Supplemental Digital Content Item 3: Table of Evidence – 2009 Studies

| **2009** | | | | | |
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| **Randomized Controlled Trials (N=51)** | | | | | |
| **Citation** | **Study Aim** | **Population / Setting** | **Study Design** | **Methods** | **Outcome Measures**  1=care processes  2=patient experience  3=patient health indices  4=quality of life  5=cost |
| 1. Bakas T, Farran CJ, Austin JK, et al. Stroke caregiver outcomes from the Telephone Assessment and Skill-Building Kit (TASK). *Top.* 2009;16(2):105-121.[1](#_ENREF_1) | To explore the efficacy of The Telephone Assessment and Skill-Building Kit (TASK) in improving stroke caregiver outcomes and addressing stroke caregiver needs. | The sample was comprised of caregivers (N=293) who were recruited from a local rehabilitation hospital and three local acute care hospitals. The final analysis included 40 caregivers. | Quantitative  Longitudinal | Subjects were randomized into the TASK intervention or the attention control group. The TASK intervention was designed to reduce caregiver task difficulty by addressing caregivers' needs in four areas and to increase caregiver optimism and reduce threat appraisal. Six outcomes were measured at baseline, 4 weeks, 8 weeks, and 12 weeks. Caregiver and stroke survivor characteristics were also measured at baseline. Caregivers in the TASK intervention group received eight weekly calls by a nurse who facilitated caregivers’ weekly assessment of skill needs using the CNCC, followed by individualized interventions that addressed priority skill needs identified by the caregiver. The final TASK notebook contained 38 written tip sheets, a stress management workbook, and a brochure on family caregiving from the American Stroke Association (ASA). After baseline, the notebook was mailed to caregivers randomized to the TASK intervention. The individualized interventions based on each caregiver’s priority skill needs enabled the caregivers to build their skills in the areas most pertinent to them during the early discharge period. | 2, 3, 4 |
| **Results** | | | **Conclusion** | | |
| The TASK intervention exhibited evidence of efficacy in increasing caregiver optimism and in reducing task difficulty and threat appraisal. TASK effects on outcomes of depressive symptoms, life changes, and general health perceptions were not significant. | | | In this small pilot study, the TASK program showed improvements in caregiver optimism, task difficulty, and threat appraisal consistent with the conceptual model derived from Lazarus’s theory. Delivered completely by telephone, the TASK program offers an inexpensive way to provide stroke caregivers with information about stroke, assistance with stroke-related care, and follow-up after discharge. However, the authors suggest that the TASK program be revised and retested in a larger and ethnically diverse randomized controlled clinical trial using separate nurse interveners. | | |

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| 2. Bakitas M, Lyons KD, Hegel MT, et al. Effects of a palliative care intervention on clinical outcomes in patients with advanced cancer: The Project ENABLE II randomized controlled trial. *JAMA: Journal of the American Medical Association.* 2009;302(7):741-749.[2](#_ENREF_2) | To determine the effect of a nursing-led intervention on quality of life, symptom intensity, mood, and resource use in patients with advanced cancer. | The sample was comprised of patients (N=279) from a National Cancer Institute–designated comprehensive cancer center in New Hampshire and affiliated outreach clinics and a VA medical center in Vermont. | Quantitative  Longitudinal | Subjects were randomized into 2 groups. Those in the usual care for persons newly diagnosed with advanced cancer were compared to those within a palliative care intervention group. The intervention used a case management, educational approach to encourage patient activation, self-management, and empowerment. The team refined and converted the in-person and group strategies used in prior studies and demonstration project to a manualized, telephone-based format to improve access to palliative care in a rural population. One of 2 advanced practice nurses with palliative care specialty training conducted 4 initial structured educational and problem-solving sessions and at least monthly telephone follow-up sessions until the participant died or the study ended. Advanced practice nurses’ caseloads were balanced by diagnosis and sex. Participants completed baseline questionnaires upon enrollment. Follow-up questionnaires were mailed 1 month after baseline and every 3 months until the participant died or study completion. | 2, 3 |
| **Results** | | | **Conclusion** | | |
| The intervention group had improved quality of life without symptom improvement. The estimated treatment effects for all participants were a mean (SE) of 4.6 (2) for quality of life (p=0.02), −27.8 (15) for symptom intensity (p=0.06), and −1.8 (0.81) for depressed mood (p=0.02). The estimated treatment effects in participants who died during the study were a mean (SE) of 8.6 (3.6) for quality of life (p=0.02), −24.2 (20.5) for symptom intensity (p=0.24), and −2.7 (1.2) for depressed mood (p=0.03). Intensity of service did not differ between the 2 groups. | | | This study shows that integration of a nurse-led palliative care intervention concurrent with anticancer treatments demonstrated higher quality of life, lower depressed mood, but limited effect on symptom intensity scores and use of resources in intervention participants relative to those receiving usual cancer care. The intervention had no effect on the number of days in the hospital and ICU, the number of emergency department visits, or anticancer treatment because the proportions of participants in each group receiving these therapies were similar. | | |

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| 3. Bauer MS, Biswas K, Kilbourne AM. Enhancing multiyear guideline concordance for bipolar disorder through collaborative care. *Am J Psychiatry.* 2009;166(11):1244-1250.[3](#_ENREF_3) | To investigate the hypothesis that treatment with a collaborative care model improved multiyear concordance with guideline recommendations for anti-manic treatment. | The sample was comprised of patients (N=306) in 11 VA hospitals who were hospitalized for bipolar disorder. | Quantitative  Longitudinal | Participants were randomly assigned at hospital discharge to receive 3 years of treatment in the collaborative care model or continued usual care. Concordance with guideline-recommended anti-manic pharmacotherapy was assessed at baseline and prospectively over six 6-month epochs. Group differences were assessed with generalized estimating equations that controlled for relevant covariates. The collaborative care model consisted of three manual-based components, which correspond to the core elements of chronic care models for medical illnesses.  Treatment of bipolar disorder was transferred to collaborative care clinics staffed by a part-time psychiatrist and a half-time nurse, with a nurse-to-patient ratio of approximately 1:50. All other mental and medical health care was provided as clinically indicated. Usual care reflected the situation that is encountered in many clinical settings in a variety of health care systems. | 3 |
| **Results** | | | **Conclusion** | | |
| A primary analysis revealed that anti-manic treatment guideline concordance was significantly higher in the collaborative care arm compared to the usual-care arm (odds ratio=1.74, 95% CI=1.05–2.88, p=0.047) after controlling for covariates. A secondary analysis among a subgroup of participants who received any anti-manic medication demonstrated concordance rates (e.g., therapeutic lithium level among those receiving lithium, therapeutic risperidone dosage among those receiving risperidone) were still significantly higher in the collaborative care group (odds ratio=1.83, 95% CI=1.10–3.05, p=0.033) and were substantially higher in both treatment arms in this subgroup than in the overall sample. | | | The findings of this study indicate that multicomponent collaborative care models, which include not only provider support for guideline implementation but also patient self-management skill enhancement and facilitated treatment access and continuity, can improve guideline concordance over the long term, even in severely impaired patients. Furthermore, this study provides the first prospectively collected data of more than 1 year’s duration on clinical practice guideline concordance in the treatment of bipolar disor­der. Additionally, it provides the first prospective bipolar clinical trials data comparing guideline concordance in an intervention group and a comparison group. Treat­ment in the multicomponent collaborative care model significantly improved and sustained long-term guideline concordance rates compared to usual care. These benefits were demonstrated despite enrolling a severely ill popu­lation with high rates of medical comorbidity, psychiatric comorbidity, suicidality, and psychosis. The lack of effect of age and bipolar type indicates that these benefits are relatively broad-based. | | |

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| 4. Berger AM, Kuhn BR, Farr LA, et al. One-year outcomes of a behavioral therapy intervention trial on sleep quality and cancer-related fatigue. *Journal of Clinical Oncology.* 2009;27(35):6033-6040.[4](#_ENREF_4) | To determine 1-year outcomes of a four-component behavioral therapy (BT) sleep intervention (Individualized Sleep Promotion Plan [ISPP]) versus a healthy eating control (HEC) on cancer related fatigue in women receiving breast cancer adjuvant chemotherapy treatment (CTX). | The sample was comprised of patients (N=219) from 12 oncology clinics. | Quantitative  Longitudinal | After randomization, BT intervention group participants spent 90 minutes with the research nurse developing a 12-item plan [ISPP (Appendix)]18 using the coscientist model,20 Participants spent 30 minutes with the research  nurse revising the BT plan 2 days before each later CTX (range, 4 to 8) and 30, 60 and 90 days after the last CTX. Revisions were based on sleep diary and BT plan adherence data. All BT plans were bolstered during 15 minute, in-person sessions 7 to 9 days after each revision. BT group participants spent an average of 327.3(SD=86.6) minutes in an average of 6.3(1.9) sessions. Women were praised for adhering and coached to address problem areas. Each woman was provided with advice and information tailored to their specific needs. The BT plan included four components common to BT therapy for insomnia: 1) stimulus control, 2) modified sleep restriction, 3) relaxation therapy, and 4) sleep hygiene counseling. | 3 |
| **Results** | | | | **Conclusion** | |
| The BT group, on average, experienced significant improvement on global sleep quality compared with the HEC group, but not on objective sleep or fatigue outcomes. Sleep quality differed over 1 years’ time (F [4,162] = 7.7, p<0.001; by group, F [1,173] = 4.8, p=0.029; and over time by group, F [4,162] = 3.3, p=0.013). Pairwise comparisons revealed significant differences between groups at 90 days (p=0.002) but not at 1 year (p=0.052). Seven days of diary and actigraphy data did not corroborate with monthly reflections (PSQI). The night awakenings (Actigraph) pattern was significantly different by group over time (p=0.046), with no differences between groups at 90 days or at 1 year. Fatigue was lower at 1 year than before CTX; no group effects were found. | | | | This study found a BT sleep intervention (ISPP©) significantly improved global sleep quality, but not fatigue, in women over 1 year after the first BT intervention and CTX. Seven days of diary and objective sleep data did not corroborate with this perception. At the time of publication, this study was believed to be the first RCT designed to prevent disturbed sleep, and thereby to reduce fatigue, as women navigate through all three phases of CTX. Although no group effects were found, fatigue was mild at 1 year and lower than before CTX. | |

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| 5. Bosworth HB, Olsen MK, Dudley T, et al. Patient education and provider decision support to control blood pressure in primary care: A cluster randomized trial. *Am Heart J.* 2009;157(3):450-456.[5](#_ENREF_5) | To examine the effects of a telephonic patient behavioral intervention and a provider decision support intervention in on BP control among adults with hypertension treated in a primary care setting. | The sample consisted of patients (N=438) and primary care providers in a (N=32) primary care clinic of the Durham VA Medical Center. | Quantitative  LongitudinalCluster Randomized Trial | This was a 2-level (primary care provider and patient) cluster randomized trial with 2-year follow-up occurring among patients with hypertension enrolled from a Veterans Affairs Medical Center primary care clinic. Primary care providers (N=17) in the intervention received computer-generated decision support designed to improve guideline concordant medical therapy at each visit; control providers (N =15) received a reminder at each visit. Patients received usual care or a bimonthly tailored nurse-delivered behavioral telephone intervention to improve hypertension treatment. | 3 |
| **Results** | | | **Conclusion** | | |
| There was not a significant improvement in BP control across the 3 intervention groups relative to the reminder control group over the 2-year follow-up. In secondary analyses, there were improvements in BP control among patients who received the nurse-administered behavior intervention (40.1%-54.4% over the 2-year study period; 14.3% improvement, p=0.03), but there was no between-group differences at the end of the study. The improvement was observed with a relatively easy-to-administer, brief telephone intervention that did not result in increased number of primary care provider visits. Overall, the provider decision support intervention did not have an appreciable effect on BP control in this study. | | | The brief behavioral intervention showed improved outcomes over time, but there were not significant between group differences. Computer-based decision support patient management system delivered at the point of care did not result in significant improvements in BP control, whereas a telephone-delivered patient intervention resulted in meeting a priori specified clinically significant end point; this difference was not statistically significant from the control group. A brief nurse-administered telephone intervention may have a clinical effect on BP control rates in a primary care setting. | | |

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| 6. Bosworth HB, Olsen MK, Grubber JM, et al. Two self-management interventions to improve hypertension control: A randomized trial. *Annals of Internal Medicine.* 2009;151(10):687-695.[6](#_ENREF_6) | To compare the effectiveness of blood pressure (BP) self-monitoring alone or in combination with a  nurse-administered tailored behavior self-management intervention to usual care. | The sample consisted of patients (N=636) at 2 Duke University Health System primary care clinics. | Quantitative  Longitudinal | The patients were randomly assigned to receive usual care, a tailored behavioral telephone intervention, home BP monitoring, or the behavioral intervention plus BP monitoring. Patients in the tailored behavior self-management intervention received bi-monthly telephone calls by a single nurse. Each encounter included a core group of modules potentially implemented during each call plus additional modules activated at specific intervals. Patients randomized to the home BP monitor intervention received arm or wrist monitors (depending on arm circumference). At each 6-month outcome assessment, patients were retrained if needed. Patients were asked to take their BP three times per week on three separate days, at the same time of day, and record their values in a log. Patients randomized to the combined intervention received a home BP monitor, training on its use, and the bi-monthly nurse-administered behavioral self-management intervention. | 3, 5 |
| **Results** | | | **Conclusion** | | |
| Patients randomized to the combined behavioral and home BP monitor group showed the greatest improvement in the proportion of BP control. At 24 months, the adjusted improvement in the combined group compared to usual care was 11.0% (95% CI: 1.9%, 19.8%; p=0.012). As compared to usual care, the relative improvement for the behavioral group was 4.3% (95% CI: −4.5%, 12.9%; p=0.34) and for the home BP monitoring group was 7.6% (95% CI: −1.9%, 17.0%; p=0.096) at 24 months. The largest sustained improvement for systolic and diastolic BP was observed in the combined home BP monitor and behavioral intervention group. The 3-way interaction of behavioral-by-home monitoring-by-month was significant (p=0.041 for systolic and p=0.004 for diastolic model) indicating that the main effects of home BP monitoring and the behavioral interventions on blood pressure over time are enhanced by the presence of each other. | | | Neither intervention alone improved BP control at 24 months; however, the combination intervention resulted in a clinically significant improvement in BP control of 11% compared with usual care. Patients in the combined intervention group also had a clinically meaningful decrease in systolic BP of 3.9 mm Hg compared with the usual care group. The combination of home monitoring with patient self-management interventions may be a valuable tool for improving blood pressure control rates at a minimal cost. | | |

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| 7. Brandon AF, Schuessler JB, Ellison KJ, et al. The effects of an advanced practice nurse led telephone intervention on outcomes of patients with heart failure. *Applied Nursing Research.* Nov 2009;22(4):e1-7.[7](#_ENREF_7) | To determine if patients with heart failure (HF) who received telephone enhanced disease management led by an advanced practice nurse (APN) would experience fewer HF-related hospital readmissions and have improved quality of life (QOL) and self-care behaviors (SCBs) than do the patients with HF who received usual care. | The sample was comprised of patients (N=20) in a single cardiology receiving care for heart failure at a single cardiology practice in rural east central Alabama practice. | Quantitative  Longitudinal  Pre-Post | Demographic data were collected on age, gender, race, marital status, education, income, and severity of HF based on a HF classification scale. Pre-tests and post-tests were performed to detect changes in these outcomes related to the APN-led telephone intervention.  The frequency of the single APN-led intervention was weekly for 2 weeks and every 2 weeks for the following 10 weeks. There were seven telephone appointments for each patient in the APN-led intervention group. The telephone calls ranged from 5 to 30 minutes and included education about the pathophysiology of HF, a low sodium diet, smoking cessation, flu/pneumonia vaccinations, when to call the physician with symptoms of exacerbation, and medication adherence. Patients in the control group received the usual care provided by their cardiologist. The Minnesota Living With Heart Failure Questionnaire was used to measure QOL and the 29-item SCB scale developed by was used to measure SCBs of the participants in this study. | 3, 4, 5 |
| **Results** | | | **Conclusion** | | |
| There was a significant interaction in HF-related hospital readmissions over time in the APN-led telephone intervention versus usual care (F=7.63, p=0.013), with the APN  intervention group having significantly fewer hospital readmissions over time. The results for the APN's intervention on SCBs also revealed a significant interaction  (p<0.001), indicating that the intervention group improved significantly more than did the control group over the course of the study. There was an improvement in the mean SCB scores for the intervention group (from 95.9 to 128), whereas the control group's SCB mean score did not change (M=94 at each testing). The intervention group reported more improvement in overall QOL, and the control group reported a decrease in overall QOL. The mean pretest score for total QOL for the intervention group was 52.1 and their posttest score for total QOL was 33.4, indicating an improvement in perceived QOL overall. The control group's pretest score for total QOL was a mean of 51.1 and the  post-test score for total QOL was a mean of 57.7, suggesting a decrease in perceived QOL overall. | | | In conclusion, the strong evidence of improvement in HF related readmissions and SCBs of patients with HF lends credence to APN-led telephone interventions and necessitates further exploration of the APN's role in aiding patients with HF to achieve desired outcomes. | | |

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| 8. Bullock L, Everett KD, Mullen PD, et al. Baby BEEP: A randomized controlled trial of nurses' individualized social support for poor rural pregnant smokers. *Maternal and child health journal.* 2009;13(3):395-406. [8](#_ENREF_8) | To test the effectiveness of an adaptation of the New Zealand trial weekly social support calls throughout the pregnancy  delivered by a nurse plus beeper access to the nurse to  decrease stress and depression compared with a previously tested series of eight prenatal smoking cessation booklets mailed at weekly intervals singly and in combination. | The sample was comprised of women (N=695) at rural Women Infant and  Children Nutritional (N=21) Supplement (WIC) clinics in a Midwest state. | Quantitative  Longitudinal | Participants randomized to Baby BEEP groups (N=345) received weekly calls throughout pregnancy plus 24-7 beeper access to the nurse for any additional social support needed. The research nurse’s role on the calls was to use empathetic listening skills and provide social, emotional and/or informational support in response to each woman’s individual needs, such as stressors she was facing and ways she could manage her stress responses. Saliva cotinine samples were collected monthly from all groups by other nurses at home visits up to 6 weeks post-delivery. The following instruments were used for data collection: The Fagerstrom Test for Nicotine Dependence (FTND) , 4-Item Perceived Stress Scale, Prenatal Psychosocial Profile, and the Mental Health Index-5. | 3 |
| **Results** | | | **Conclusion** | | |
| Over the course of the study, researchers collected 3,877 saliva samples, with an average of six samples for each participant (range 1–12). At the end of pregnancy all four study  groups had at least 17% abstinent, with the percent abstinent ranging upward to 22%. No statistically significant differences were found for booklet and social support or for the interaction (Likelihood Ratio Chi-Square=1.38, p=0.72). At the postpartum measure, abstinence was lower—11 to 13%—and there were neither main effects nor interaction effects (Likelihood Ratio Chi-Square=1.39, p=0.70). | | | High abstinence rates in the controls indicate the power of biologic monitoring and home visits to assess stress, support, depression, and intimate partner violence; these elements plus booklets were as effective as more intensive interventions. In conclusion, the successful implementation of the Baby BEEP study makes this an important trial providing significant information about smoking cessation interventions with rural, low-income pregnant women. The study’s methods led to exceptional treatment acceptability (as measured by the retention rates) and are particularly meaningful given the target population of vulnerable low income rural women. Although the original hypothesis was not supported, getting one of every five women in all four groups to stop smoking is useful clinical information. | | |

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| 9. Cohan D, Gomez E, Greenberg M, et al. Patient perspectives with abbreviated versus standard pre-test HIV counseling in the prenatal setting: A randomized-controlled, non-inferiority trial. *PLoS ONE.* 2009;4(4)[9](#_ENREF_9) | To evaluate decisional conflict, HIV knowledge and testing uptake associated with two HIV testing strategies among English and Spanish-speaking pregnant women. | The sample was comprised of English and Spanish speaking pregnant women (N=278) initiating prenatal care at San Francisco  General Hospital. | Quantitative  Longitudinal | Participants were randomized to receive either abbreviated or standard nurse performed HIV test counseling at the initial prenatal visit. At the onset of the prenatal appointment, all pregnant women received a low-literacy HIV educational brochure to be read at a later time. During the appointment, the nurse administered either the standard or abbreviated HIV pretest counseling script, documented the woman’s decision to take or not take the HIV test. Immediately following the appointment, blinded, bilingual study staff administered a structured questionnaire to each participant. The questionnaire included the 10-item O’Connor Low-Literacy Decisional Conflict Scale (DCS), a 9-item instrument assessing basic HIV knowledge, a scale assessing perceived risk of being HIV positive, and reasons for testing or not testing and satisfaction with information received and the decision-making process. At a 2–4 week follow-up clinician visit, blinded study staff administered a second survey following HIV test result disclosure by the medical provider. The second survey included items adapted from Simpson et al. and evaluated overall satisfaction with the consent and results disclosure process as well as the decision to undergo HIV testing. | 2 |
| **Results** | | | **Conclusion** | | |
| There was no significant difference in the proportion of women with low decisional conflict (71.6% in AA vs. 76.4% in SA, p=0.37), and the observed mean difference between the groups of 3.88 (95% CI: 20.65, 8.41) did not exceed the non-inferiority margin. HIV testing uptake was very high (97. 8%) and did not differ significantly between the 2 groups (99.3% in AA vs. 96.5% in SA, p=0.12). Likewise, there was no difference in satisfaction with testing decision (97.8% in AA vs. 99.3% in SA, p=0.36). However, women in AA had significantly lower mean HIV knowledge scores (78.4%) compared to women in SA (83.7%, p<0.01). | | | This study suggests that streamlining the pre-test consenting process, while associated with lower knowledge, does not compromise patient decision making or satisfaction regarding HIV testing. While there were no differences seen in testing uptake in this study, this streamlined approach to pretest consenting would likely facilitate the systematic implementation the CDC guidelines recommending universal HIV testing of pregnant women. As such, abbreviated HIV testing strategies may be associated with increased HIV testing uptake on a population level without jeopardizing patients’ decision-making process. | | |

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| 10. Counsell SR, Callahan CM, Tu W, et al. Cost analysis of the geriatric resources for assessment and care of elders care management intervention. *Journal of the American Geriatrics Society.* 2009;57(8):1420-1426.[10](#_ENREF_10) | To provide a cost analysis of the Geriatric Resources for Assessment and Care of Elders (GRACE) intervention. | The sample consisted of low-income seniors (N=951) recruited from 6 urban community health centers in Indianapolis, Indiana. | Quantitative  Longitudinal | This study was a randomized controlled trial with physicians as the unit of randomization. Overall, 474 seniors participated in the intervention while 477 participated in usual care. Intervention participants received home-based care management for 2 years by a nurse practitioner and social worker who collaborated with the primary care physician and a geriatrics interdisciplinary team and were guided by 12 care protocols for common geriatric conditions. During the course of the study, detailed records were kept of the volume and content of care delivered by the GRACE team, and these records formed the basis of the intervention cost estimate. | 5 |
| **Results** | | | **Conclusion** | | |
| Mean 2-year total costs for intervention patients were not significantly different from those for usual care patients in the full sample ($14,348 vs. $11,834; p=0.20) and high-risk group ($17,713 vs. $18,776; p=0.38). In the high-risk group, increases in chronic and preventive care costs were offset by reductions in acute care costs, and the intervention was cost saving during the post-intervention, or third, year ($5,088 vs. $6,575; p<0.001). Mean 2-year total costs were higher in the low-risk group ($13,307 vs. $9,654; p=0.01). | | | This cost analysis of a home-based geriatric care management intervention that improved the quality of care and patient health found that treating patients enrolled in the GRACE intervention tended to be more costly to the healthcare delivery system than treating patients in usual care, although cost differences were not statistically significant. Chronic and preventive care costs, including costs of the intervention, were higher for intervention patients. In the low-risk group, annual total costs were consistently higher for intervention than usual care patients, but in the group at high risk of hospitalization, costs were similar between intervention and usual care patients over the first 2 years, with cost savings in the year after the intervention had been completed. | | |

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| 11. Dixon L, Goldberg R, Iannone V, et al. Use of a critical time intervention to promote continuity of care after psychiatric inpatient hospitalization. *Psychiatr Serv.* Apr 2009;60(4):451-458.[11](#_ENREF_11) | To assess the effectiveness of a brief three-month critical time intervention (B-CTI) model in improving continuity of psychiatric outpatient care for individuals with serious mental illness who are discharged from inpatient psychiatric treatment facilities. | The sample consisted of veterans (N=135) in multiple hospitals who were diagnosed as having serious mental illness and were discharged from an acute inpatient unit. | Quantitative  Longitudinal | Participants were randomly assigned to receive either B-CTI or usual care. The three-month B-CTI intervention begins before discharge. A B-CTI clinician meets with the patient, assesses needs, and maintains a high level of patient contact after discharge. Participants completed interviews at baseline and three months later. Chart reviews provided data on service utilization in the six months post-discharge. This study’s adapted B-CTI model roots patients within existing systems of community-based services and social support, thereby facilitating the transition from inpatient hospitalization to outpatient services and community living. The three-month intervention begins before hospital discharge. The B-CTI clinician, who has training in nursing or social work, receives a referral and immediately meets with the patient to assess individual needs and barriers to outpatient care. The clinician builds rapport, develops individualized treatment goals, identifies barriers to treatment, and establishes a case management plan. | 2, 3, 5 |
| **Results** | | | **Conclusion** | | |
| Compared with the control group, the B-CTI group had significantly fewer days between hospital discharge and the first outpatient visit. A greater proportion of participants in the B-CTI group had a mental health or substance abuse visit within 30 days and 180 days of discharge. Participants in the B-CTI group had more total mental health and substance abuse visits within 30 days and 180 days of discharge. Those in the B-CTI group also had greater continuity of outpatient care, as evidenced by a greater number of two month blocks with two or more outpatient visits over 180 days. There were no overall differences between the groups in days of hospitalization or emergency room visits Overall satisfaction with mental health services did not differ between the groups. Participants in the B-CTI group reported receiving significantly more help in scheduling mental health and medical outpatient appointments and in tracking and getting to those appointments. Those in the B-CTI group reported receiving more information on name, dose, and type of medication prescribed for them and receiving more aid in contacting family members and social supports, making community connections, and helping family members to better understand mental illness and other related issues Compared with participants in the control group, those in the B-CTI group described significantly greater levels of satisfaction with legal and safety issues (5.30±1.5 versus 4.72±1.5; p=0.026) and greater frequency of social contacts (2.92 ±1.15 versus 2.40 ±1.08; p=0.013). | | | This study provides evidence that BCTI targeted at the point of inpatient discharge can be helpful in promoting post-discharge continuity of care. This study contributes to an emerging body of evidence supporting the effectiveness of brief critical time interventions to improve continuity of care for individuals with psychiatric disabilities. | | |

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| 12. Fincher L, Ward C, Dawkins V, et al. Using telehealth to educate Parkinson's disease patients about complicated medication regimens. *Journal of gerontological nursing.* 2009;35(2):16-24.[12](#_ENREF_12) | To determine the usefulness and usability of telehealth medication counseling for Parkinson’s Disease Research Education and Clinical Center (PADRECC) patients. | The sample was of patients (N=75) in a single VA hospital designed to care for patients with Parkinson’s disease. | Quantitative Qualitative  Longitudinal  This study was part of a larger randomized controlled trial. | Patients taking three or more medications for Parkinson’s disease were randomly as­signed to three teaching groups: in person, videophone or telephone and were fol­lowed over time at 3-month and 6-month intervals. Within 14 days of enrollment, a 20-minute standardized Parkinson’s disease (PD) medication counseling session was undertaken via the assigned telehealth modality at a date and time set by the participant. Patient and nurse use­fulness of the intervention was evaluat­ed by responses to a 15-question Likert scale and elicited comments. The intervention consisted of a theory-based structured protocol delivered by four neuroscience nurses who completed 4 hours of training on the didactic content (e.g., medications, self-management activities) and documentation and concluded with a simulated patient telehealth practice session. | 1, 2 |
| **Results** | | | **Conclusion** | | |
| The total Patient Post-Telehealth Questionnaire (PPTQ) score was significant: t(34)=0.896, p=0.004, 95% confidence interval (CI)=1.90 to 3.12; the eta square of 0.02 reflects a small effect size in favor of videophone medication counseling for these PD patients. Overall, participants were more satisfied with the videophone (mean=16.43, SD=3.12) than the telephone (mean=18.07, SD=1.89) telehealth method. Overall, the mean NPTQ use­fulness subscores were not signifi­cantly different (mean=30.64, SD=5.89) between the two telehealth modalities (mean=29.33, SD=5.44). The independent-sample t-test score for the NPTQ was t(47)=0.805, p=0.581, 95% CI = –1.96 to 4.57. Five NPTQ items related to counseling of correct medication use and identi­fication of changes in symptoms or functioning of the PD patients were significantly better for the video­phone group as compared with the telephone group. The qualitative analysis of the inter­view data indicated strong patient satisfaction with the telehealth intervention. | | | Telehealth counseling ses­sions were considered useful by this group of movement disor­der patients with tremors, whose functional ADLs often took twice as long to complete than for the average older adult. The elderly veterans found videophones an acceptable and easy to use tele­health tool for their homes. In this study, the participants with PD thought videophone sessions provided a supportive connection with the nurse specialist, as was reflected in both their written words and questionnaire findings. Patients found the vid­eophone more useful for informa­tion exchange on changes in mood or emotions, changes in physical functioning, and on learning self-management strategies for meals, sleep, and constipation and were more satisfied with their counseling and the equipment. The nurses found the video­phone more useful for the teach­ing and learning sessions regard­ing medications, side effects, and changes in the patient’s physical functioning. Visual assessment of patient symptoms and visual verifi­cation of the correct drug, dosage, and scheduling in the teaching-learning process may explain this finding. | | |

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| 13. Friedman B, Wamsley BR, Liebel DV, et al. Patient satisfaction, empowerment, and health and disability status effects of a disease management-health promotion nurse intervention among Medicare beneficiaries with disabilities. *The Gerontologist.* 2009;49(6):778-792.[13](#_ENREF_13) | The purpose of the disease management–health  promotion nurse intervention was to enhance primary care by adding nurse home visiting. | The sample consisted of Medicare beneficiaries (N=766) from eight counties in western New York, six in West Virginia, and five in Ohio. | Quantitative  Longitudinal | Beneficiaries were randomly assigned to one of four groups: a) a control group that was eligible for the traditional Medicare Part A and B fee-for-service benefits, b) a disease management – health promotion nurse group, c) a voucher group that received a monthly consumer-directed voucher benefit, and d) a combination group that received both the nurse intervention and the voucher. Eleven nurses provided services to the participants. The nurse intervention was derived from the logic that empowering older adults with chronic illness to better manage their own health and interact more effectively with health practitioners would result in improved satisfaction as well as in better health and disability outcomes. The average caseload during the “steady-state” phase of the demonstration was approximately 65 patients per nurse. Each patient had an average of 3.24 goals developed with the nurse during the time he or she was enrolled. | 2, 3 |
| **Results** | | | **Conclusion** | | |
| The patients whose activities of daily living (ADL) were reported by the same  respondent at baseline and 22 months following baseline had significantly fewer dependencies at 22 months than did the control group (p=0.038). This constituted the vast majority of respondents. In addition, patient satisfaction significantly improved for 6 of 7 domains, whereas caregiver satisfaction improved for 2 of 8 domains. However, the intervention had no effect on empowerment, self-rated health, the SF-36 physical and mental health summary scores, and the number of dependencies in instrumental ADL. | | | This intervention holds the potential to reduce the rate of functional decline and improve satisfaction for Medicare beneficiaries with ADL dependence. | | |

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| 14. Heidrich SM, Brown RL, Egan JJ, et al. An individualized representational intervention to improve symptom management (IRIS) in older breast cancer survivors: three pilot studies. *Oncology nursing forum.* 2009;36(3):E133-143.[1](#_ENREF_15)4 | To test the feasibility and acceptability of an individualized representational intervention to improve symptom management (IRIS) in older breast cancer survivors and test the short-term effects of an IRIS on symptom distress. | The sample was comprised of women (N=82) in a single oncology clinic. | Quantitative  Longitudinal | IRIS is a counseling interview conducted by advanced practice nurses (APN) and is driven by the individual’s needs. Participants were encouraged to describe their beliefs about their most bothersome symptoms along the five dimensions of representation. Through a discussion of symptom management strategies, the APN then summarized the beliefs and the consequences of those beliefs to create conditions for conceptual change. The APN and the participant create a symptom management plan in which the participant identifies goals and strategies that will help reach those goals. Session two of the intervention was carried out over the phone. During the phone interview, the nurse and participant review the symptom management plan to analyze progress, determine which strategies have been most useful, determine if any barriers are impeding progress, and revise the plan as needed. | 2, 3, 4 |
| **Results** | | | **Conclusion** | | |
| The most significant findings in these studies were the reports of changes in symptom  management behaviors. In pilot studies 1 and 2, women in the intervention group were more likely to change their own behavior or were able to accomplish a change in medical treatment compared to women in the control group. However, differences in symptom distress measures between the two groups were small and not always significant. Many of the self-care or medical treatment changes women initiated over the course of 8 weeks might not have been in place long enough by the 8- or 16-week assessment for changes in distress to take place. Strategies were changed over time and some strategies took many weeks to implement. Life events sometimes delayed the implementation of new strategies. In addition, although most women rated the new strategies as effective, these were subjective, rather than objective, measures. | | | The theoretical model also suggests that barriers to symptom management mediate the influence of an IRIS on symptom distress and that an IRIS should reduce barriers to symptom management. Mediating effects in these small pilot studies could not be examined; however, a number of communication barriers were described and many of the strategies women chose were communication-enhancement strategies. Further work is needed to determine whether other salient barriers to self-care of symptoms in older cancer survivors exist. The pilot studies were designed to test the feasibility and acceptability of an IRIS. The results clearly should be viewed with caution given the small sample sizes. Furthermore, the samples of older women were homogeneous in terms of race and ethnicity, although not in terms of socio-demographic or health variables. However, an IRIS is an intervention most likely to be effective across diverse groups. This needs to be demonstrated in further research. | | |

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| 15. Henrichs BM, Avidan MS, Murray DJ, et al. Performance of certified registered nurse anesthetists and anesthesiologists in a simulation-based skills assessment. *Anesthesia and Analgesia.* 2009;108(1):255-262.15 | To determine whether experienced anesthesiologists and Certified Registered Nurse Anesthetists (CRNAs) have comparable skill levels in managing acute conditions. | The sample was comprised of anesthesiologists (N=35) and CRNAs (N=26) from multiple hospitals. | Quantitative  Cross- Sectional  Randomized, Single-Blinded Study | Sixty-one specialists each managed 8 of 12 randomly selected, scripted, intraoperative simulation exercises. Participants were expected to recognize and initiate appropriate therapy for intraoperative events during a 5-minute period. The twelve scenarios were designed in a similar manner to those used for earlier studies. These scenarios were identical to those used by the same group in a previous study, in which they were shown to have good reliability and validity. | 1 |
| **Results** | | | **Conclusion** | | |
| The results for the performances of the anesthesiologists are also reported in a companion manuscript. The anesthesiologists achieved a modestly higher mean overall score than CRNAs (66.6% +/- 11.7 [range = 41.7%-86.7%] vs. 59.9% +/- 10.2 [range = 38.3%-80.4%] p<0.01). There were no significant differences in performance between groups on individual encounters. The two-way ANOVA yielded a significant group effect (F1=7.8, p<0.01). There was no significant group by scenario interaction suggesting that the overall difference in performance, by group, was reasonably consistent from scenario to scenario. There was a significant effect attributable to scenario (F11=60.7, p<0.01). This indicates that the combined average of anesthesiologists’ and CRNAs’ mean scores varied considerably as a function of the clinical content of the scenario. Performance did not improve as individuals progressed through each of the eight scenarios. | | | In this simulation-based skill assessment, anesthesiologists achieved modestly higher overall scores than CRNAs. However, the similar broad range in both groups indicates that certification and clinical practice alone are not sufficient guarantees of universal satisfactory performance. Systematic crisis skill training with a high-fidelity simulator or with other methods should be incorporated into the formal curriculum of both anesthesiology and CRNA trainees. Clinical simulation can provide anesthesia practitioners with useful training in the recognition and management of life-threatening intraoperative emergencies. | | |

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| 16. Izquierdo R, Morin PC, Bratt K, et al. School-centered telemedicine for children with type 1 diabetes mellitus. *J Pediatr.* Sep 2009;155(3):374-379[16](#_ENREF_16) | To test the feasibility and effectiveness of the use of telemedicine technology with school nurses to improve care for children with type 1 diabetes. | The sample was comprised of students (N=41) in public schools in Onondaga County, New York (N=25). | Quantitative  Longitudinal | Subjects, ages 5 to 14 years (grades kindergarten through eighth) were randomized to usual care (18 students; 13 schools) or intervention (23 students; 12 schools). Usual care included medical visits every 3 months and communication between school nurse and diabetes team as needed by phone. The intervention group received usual care plus a telemedicine unit in the school nurse office to videoconference between the school nurse, child, and diabetes team every month. The intervention group, in addition to usual care, used a school telemedicine system with a centrally managed internet- based portal to facilitate communication between the school and diabetes center. This portal supported a teleconferencing collaboration software application and content to address generally accepted requirements for clinical data exchange and school-based care diabetes-related education,3-5 together with commercially available blood glucose data interpretation and collaboration software for the LifeScan One-Touch Ultra 2 home glucose monitoring device (LifeScan). | 3, 4, 5 |
| **Results** | | | **Conclusion** | | |
| There was a significant difference between the telemedicine and usual care groups during the first 6 months (p<0.02). A1c values increased from baseline to 6 months for students in the usual care group (not statistically significant) but decreased in the telemedicine cohort (p<0.02), and the improvement was maintained over the next several months. No significant differences were observed after the 6-month point (the beginning of summer vacation). Urgent visits to the school nurses for diabetes-related problems and urgent calls to the diabetes center decreased significantly over time in the telemedicine group but not in the usual care group. The Diabetes Dimension of PedsQL Diabetes Module did not differ between groups. There was significant improvement after month 6 on this dimension (p<0.04) for subjects in the telemedicine intervention but not usual care group. There were significant improvements on this dimension before the summer break for children in the telemedicine intervention (p<0.02), but usual care showed no significant change during this time. However, subjects in the usual care group improved significantly after the 6-month time point, whereas telemedicine participants remained at levels similar to at 6 months. | | | Students in the telemedicine group had fewer hospitalizations and emergency department visits, which was attributed to the frequent contact the diabetes team had with the students, school nurses, and families. Researchers hypothesized that the face-to-face videoconferencing and simultaneous visual review of transmitted values, graphical information, and patterns from glucose meters and pumps contributed to this success. Over time, they expect that the cost of the telemedicine equipment will decrease, and this equipment could be used for multiple purposes within schools, increasing the cost-effectiveness. | | |

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| 17. Jack BW, Chetty VK, Anthony D, et al. A reengineered hospital discharge program to decrease rehospitalization: a randomized trial. *Annals of Internal Medicine.* 2009;150(3):178-187.[17](#_ENREF_17) | To test the effects of an intervention designed to minimize hospital utilization after discharge. | The sample consisted of patients (N=749) at an urban, academic, safety-net hospital. | Quantitative  Longitudinal | A nurse discharge advocate worked with patients during their hospital stay to arrange follow-up appointments, confirm medication reconciliation, and conduct patient education with an individualized instruction booklet that was sent to their primary care provider. A clinical pharmacist called patients 2 to 4 days after discharge to reinforce the discharge plan and review medications.  Participants and providers were not blinded to treatment assignment. | 2, 3, 5 |
| **Results** | | | **Conclusion** | | |
| Intervention participants had a lower rate of hospital utilization than usual care participants (incidence rate ratio, 0.695 [95% CI, 0.515 to 0.937]); p=0.009). The intervention was most effective among participants with hospital utilization in the 6 months before index admission (p=0.014). Adverse events were not assessed. | | | In summary, the RED program successfully reduced hospital utilization, improved patient self-perceived preparation for discharge, and increased PCP follow-up. In 2007, the National Quality Forum Consensus Standards Maintenance committee identified hospital discharge as a critical area for improvement. The resulting National Quality Forum “Safe Practice” was based largely on the principles of the RED program. This study provides data supporting the implementation of the discharge standards promoted by the National Quality Forum. | | |

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| 18. Kenrik Duru O, Ettner SL, Vassar SD, et al. Cost evaluation of a coordinated care management intervention for dementia. *American Journal of Managed Care.* 2009;15(8):521-528.[18](#_ENREF_18) | To calculate intervention costs and the potential cost offset of a care management intervention that substantially improved the quality of dementia care. | The sample was comprised of patient-caregiver dyads (N=481) in multiple community care clinics. | Quantitative  Longitudinal | Patient caregiver dyads in the intervention arm were assigned a care manager, who was trained in the use of Internet-based care management software. The care managers performed a structured home assessment, identified problems, initiated care plan actions, and sent a summary to the primary care physician and other designated providers. Care managers provided ongoing  follow-up as needed, with in-home reassessments every 6 months. | 5 |
| **Results** | | | **Conclusion** | | |
| There were no significant differences in inpatient or out-patient utilization between the 2 study groups at baseline or at follow-up. The intervention had a fixed start-up cost of $70,256 and annual fixed costs of $24,162 to each of the healthcare organizations regardless of the number of patient-caregiver dyads enrolled. Assuming that the intervention enrolled 200 patient-caregiver dyads, the variable cost to the healthcare organizations would be $98 per patient per month. Examining the payer perspective with the cost of nursing home stays included, the mean monthly adjusted costs of healthcare and caregiving services during the follow-up period were $219 less for the intervention group compared with the usual care group ($1,402 vs. $1,621 per patient per month), although the difference was not statistically significant (p=0.55). Results were similar if the cost of nursing home stays was excluded, with a nonsignificant reduction of $256 in costs for the intervention group ($1,119 vs. $1,375 per patient per month, p=0.47). The ongoing mean cost of the intervention was approximately $118 per patient per month for the healthcare organizations and community organizations together. The mean monthly adjusted costs of healthcare and caregiving services during the follow-up period, representing the potential cost offset, were $555 less for the intervention group compared with the usual care group ($5,332 vs. $,5887 per patient per month), although the difference was again not statistically significant (p=0.28). | | | This cost analysis of a dementia care management intervention did not demonstrate a significant cost offset. However, given its positive effects on outcomes, the intervention may represent a worthwhile approach to improving the quality of dementia care and health outcomes for persons with dementia. Healthcare organizations should evaluate the potential of dementia care management as a means of promoting evidence-based practices and ensuring the best possible outcomes for patients with dementia and their caregivers. | | |

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| 19. Kim MT, Han HR, Song HJ, et al. A community-based, culturally tailored behavioral intervention for Korean Americans with type 2 diabetes. *Diabetes Educator.* 2009;35(6):986-994.[19](#_ENREF_19) | To test the efficacy of a culturally tailored comprehensive type 2 diabetes management intervention for Korean American immigrants  (KAIs) with type 2 diabetes. | Korean American Immigrants (N=79) in a single community health clinic participated in this study. | Quantitative  Longitudinal | The participants with confirmed eligibility were then randomly assigned to either the SHIP-DM intervention group (N=41) or the control (delayed intervention) group (N=42) by computer-automated random assignment. There were 3 concurrent intervention  components: 2-hour weekly education sessions for 6  weeks, home glucose monitoring with teletransmission  (HGMT), and monthly telephone counseling by a bilingual nurse for 24 weeks. The first component, a structured education program, was delivered at a community site (the KRC) by trained bilingual nurses and a nutritionist. The education program was aimed at enhancing diabetes knowledge and promoting diabetes self-care behaviors for glucose control and was centered on the following 6 topics: 1) overview of type 2 diabetes and general diabetes management guidelines, 2) short- and long-term complications of uncontrolled type 2 diabetes, 3) healthy eating and nutrition, 4) reading food labels and exercise, 5) medications and food-drug interactions, and 6) problem solving and communication skills with a primary care physician. | 3, 4 |
| **Results** | | | **Conclusion** | | |
| The final analysis using a series of analyses of covariance showed significant differences in physiologic outcomes between the 2 groups. In particular, the intervention group experienced a greater than 1% reduction in A1C at both 18 and 30 weeks, with 10% and 15%, respectively, of the intervention group achieving the suggested goal of A1C <7% at the 2 follow-up data collection points. There was also a significant drop in fasting glucose at 18 weeks, although the reduction was no longer significant at 30 weeks (p=0.062). At 30 weeks, the intervention group showed significantly lower levels of total cholesterol and triglyceride when compared with the control group. The intervention group also showed a trend toward a lower high-density lipoprotein when compared with the control group, but this difference was not statistically significant (p=0.059). An analysis of the psychobehavioral outcomes also revealed positive results: as compared with the control group, the intervention group showed significant improvements in diabetes knowledge, self-care activities, self-efficacy, attitudes toward diabetes, depression, and quality of life. For the diabetes knowledge items that were applicable only to insulin-injecting participants (N=12), the intervention group tended to score better than the control group, although the difference was not statistically significant. | | | The targeted intervention in KAIs with diabetes has demonstrated that a community-based, culturally tailored intervention using trained bilingual nurse counselors and self-monitoring of glucose can be effective in improving clinical indicators of diabetes and in increasing participants’ level of diabetes-related knowledge and self-efficacy. It also suggests that this approach may have high applicability to other immigrant groups with similar challenges. Future research with a larger sample size and longer follow-up period is warranted to extend and further validate these promising results. | | |

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| 20. Krieger J, Takaro TK, Song L, et al. A randomized controlled trial of asthma self-management support comparing clinic-based nurses and in-home community health workers: The Seattleking county healthy homes II project. *Archives of Pediatrics and Adolescent Medicine.* 2009;163(2):141-149.[20](#_ENREF_20) | To compare the marginal benefit of in-home asthma self-management support provided by community health workers (CHWs) with standard asthma education from clinic-based nurses. | The sample consisted of children (N=309) in homecare. | Quantitative  Longitudinal | The CHWs clients received 1 intake and an average of 4.5 follow-up visits during the course of a year and interim telephone communication. At the intake visit, CHWs reviewed participants’ asthma control, self-management practices, and access to medical care. Based on this assessment, results from a home environmental checklist and allergy testing, and use of motivational interviewing methods, CHWs developed a set of protocol-driven client and CHW actions. At follow-up visits, CHWs assessed progress and reviewed a core set of educational topics. Community health workers also provided social support and advocacy for clients, fit allergen-impermeable bedding encasements on the children’s beds, and gave participants a low-emission vacuum with a power head and embedded dirt finder, 2-layer microfiltration vacuum bags, a high-quality doormat, a cleaning kit, and plastic medication boxes. For the standard education group, the project employed existing clinic nurses and a visiting project nurse. Nurses conducted a structured intake that they used in conjunction with allergy test results to develop a client-specific asthma-management plan. They also prepared an asthma action plan, which was reviewed by the patient’s medical provider. Education began at the initial visit and the nurses offered clients 3 follow-up clinic visits at 3-month intervals. | 3, 4, 5 |
| **Results** | | | **Conclusion** | | |
| Both groups showed significant increases in caretaker quality of life (nurse-only group:  0.4 points; 95% confidence interval [CI], 0.3–0.6; nurse + CHW group: 0.6 points; 95% CI, 0.4–0.8) and number of symptom-free days (nurse only: 1.3 days; 95% CI, 0.5–2.1; nurse + CHW: 1.9 days; 95% CI, 1.1–2.8), and absolute decreases in the proportion of children who used urgent health services in the prior 3 months (nurse only: 17.6%; 95% CI, 8.1%–27.2%; nurse + CHW: 23.1%; 95% CI, 13.6%–32.6%). Quality of life improved by 0.22 more points in the nurse + CHW group (95% CI, 0.00–0.44; p=0.049). The number of symptom-free days increased by 0.94 days per 2 weeks (95% CI, 0.02–1.86; p=0.046), or 24.4 days per year, in the nurse + CHW group. While use of urgent  health services decreased more in the nurse + CHW group, the difference between groups was not significant. | | | Researchers conclude that adding in-home asthma self-management support from CHWs to in-clinic education from an asthma nurse improves asthma control in a pediatric, low-income, multiethnic population. Participants who received home visits had more symptom-free days and a small increase in caretaker quality of life relative to those receiving only clinic-based services. Evidence now supports the effectiveness of multiple methods for providing asthma self-management support, including home visits by CHWs and other health professionals, clinic based individual education, and group education. | | |

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| 21. Leveille SG, Huang A, Tsai SB, et al. Health coaching via an internet portal for primary care patients with chronic conditions: A randomized controlled trial. *Medical care.* 2009;47(1):41-47.[21](#_ENREF_21) | To test the effectiveness of an internet portal-based nurse coaching intervention to promote patient-primary care provider (PCP) discussion about chronic conditions. | The sample was comprised of patients (N=241) and primary care doctors (N=34) from 2 hospital-based practices and 2 community-based practices associated with the Beth Israel Deaconess Medical Center (BIDMC) in Boston. | Quantitative  Longitudinal | One-week and 3-month patient surveys assessed visit experiences, target conditions, and quality of life; chart abstractions assessed diagnosis and management during PCP visit. The intervention incorporated principles of behavior change based on Social Cognitive Theory, positing that self-efficacy about performing a task exerts a strong influence on behavior. Upon randomization, each intervention group patient received a standardized PatientSite message from the nurse e-coach that provided a brief description of the screened condition(s) and general tips on how to communicate more effectively with one’s PCP. The e-coach note also emphasized that patients’ active participation in the patient-physician relationship may enhance their health care experience. The message encouraged patients to use a link to the intervention website for additional communication tools and to correspond with the e-coach via PatientSite. | 1, 2, 3, 4 |
| **Results** | | | **Conclusion** | | |
| Similar high percentages of intervention (85%) and control (80%) participants reported discussing their screened condition during their PCP visit. More intervention than control patients reported their PCP gave them specific advice about their health (94% vs. 84%; p=0.03) and referred them to a specialist (51% vs. 28%; p=0.002). Intervention participants reported somewhat higher satisfaction than controls (p=0.07). Results showed no differences in detection or management of screened conditions, symptom ratings, and quality of life between groups. | | | Internet portal-based coaching produced some possible benefits in care for chronic conditions but without significantly changing patient outcomes. Limited sample sizes may have contributed to insignificant findings. Further research should explore ways internet portals may improve patient outcomes in primary care. | | |

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| 22. Ma J, Berra K, Haskell WL, et al. Case management to reduce risk of cardiovascular disease in a county health care system. *Arch Intern Med.* 2009;169(21):1988-1995.[22](#_ENREF_22) | To evaluate a nurse- and dietitian-led case management (CM) program for reducing major cardiovascular disease (CVD) risk factors in low-income, primarily ethnic minority patients in a county health care system. | Patients (N=419) in the San Mateo Medical Center outpatient clinics in northern California. | Quantitative  Longitudinal | Participants were men and women of aged 35 to 85 years who had moderately to severely elevated levels of major modifiable CVD risk factors with or without a history of atherosclerotic CVD or diabetes mellitus. Most of the participants were of an ethnic minority. The primary outcome was the Framingham risk score (FRS). Participants in the usual care (UC) and CM groups were instructed to continue routine medical care with their primary care physician. CM participants received a one-on-one nurse- and dietitian-led CM intervention previously demonstrated to reduce multiple major risk factors in patients with or at risk for CVD, including medically underserved patients. As in previous studies, case managers emphasized behavior change and medical management strategies. The Stanford and San Mateo Heart to Heart (HTH) program differed by focusing on high-risk patients served by public health primary care clinics. Unlike previous interventions, all patients had primary care physicians who integrated their care with the case managers’ semiautonomous, protocol-based approach to risk factor management. | 3 |
| **Results** | | | **Conclusion** | | |
| A total of 419 patients at elevated risk of CVD events were randomized and followed up for a mean of 16 months (81.4% retention). The mean FRS was significantly lower for the CM vs. UC group at follow-up (7.80 [95% confidence interval, 7.21-8.38] vs. 8.93 [8.36-9.49]; p=0.001) after adjusting for baseline FRS. This is equivalent to 5 fewer heart disease events per 1,000 individuals per year attributable to the intervention or to 200 individuals receiving the intervention to prevent 1 event per year. The pattern of group differences in the FRS was similar in subgroups defined a priori by sex and ethnicity. The main driver of these differences was lowering the mean (SD) systolic (−4.2 [18.5] vs. 2.6 [22.7] mm Hg; p=0.003) and diastolic (−6.0 [11.6] vs. −3.0 [11.7] mm Hg; p=0.02) blood pressures for the CM vs. UC group. | | | Nurse and dietitian CM targeting multifactor risk reduction can lead to modest improvements in CVD risk factors among high-risk patients in low-income, ethnic minority populations receiving care in county health clinics. | | |

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| 23. McCarrier KP, Ralston JD, Hirsch IB, et al. Web-based collaborative care for type 1 diabetes: A pilot randomized trial. *Diabetes Technology and Therapeutics.* 2009;11(4):211-217.[23](#_ENREF_23) | To test the Living With Diabetes program with a sample of moderately poorly controlled type 1 diabetes patients in an academic diabetes clinic. | The sample consisted of patients (N=77) in a single diabetes clinic. | Quantitative  Longitudinal | A 12-month randomized trial tested a Web-based case management program in a diabetes specialty clinic. Patients 21-49 years old with type 1 diabetes receiving multiple daily injections with insulin glargine and rapid-acting analogs who had a recent A1C >7.0% were eligible for inclusion. Participants were randomized to receive either: 1) usual care plus the nurse-practitioner-aided Web-based case management program (intervention) or 2) usual clinic care alone (control). We compared patients in the two study arms for changes in A1C and self-efficacy measured with the Diabetes Empowerment Scale. | 2, 3 |
| **Results** | | | **Conclusion** | | |
| Over the course of the trial, the intervention group experienced an average decrease in A1C test values of 0.37%, while the control group experienced a slight increase of 0.11%. The mean baseline A1C among study participants was 8.0%. We observed a non-significant decrease in average A1C (-0.48; 95% confidence interval -1.22 to 0.27; p=0.160) in the intervention group compared to the usual care group. The intervention group had a significant increase in diabetes-related self-efficacy compared to usual care (group difference of 0.30; 95% confidence interval 0.01 to 0.59; p=0.04). | | | Use of a Web-based case management program was associated with a beneficial treatment effect on self-efficacy, but change in glycemic control did not reach statistical significance in this trial of patients with moderately poorly controlled type 1 diabetes. Larger studies may be necessary to further clarify the intervention's impact on health outcomes. | | |

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| 24. McCorkle R, Dowd M, Ercolano E, et al. Effects of a nursing intervention on quality of life outcomes in post-surgical women with gynecological cancers. *Psycho-oncology.* 2009;18(1):62-70.[24](#_ENREF_24) | To test if women with gynecological cancers in the nursing intervention group will demonstrate higher quality of life (QOL) as assessed by depressive symptoms, uncertainty, symptom distress, and overall QOL. | Women with a diagnosis of ovarian cancer were (N=123) recruited from a Connecticut teaching hospital. | Quantitative  Longitudinal  Single-Blind Randomized Clinical Trial | Patients in the nursing intervention group received  6 months of tailored specialized care by an oncology Advanced Practice Nurse (APN). The primary objective of the intervention was to assist patients in developing and maintaining self-management skills post-operatively and to facilitate their active participation in decisions affecting their subsequent treatment, which included chemotherapy. APN activities included symptom management and monitoring, emotional support, patient  education, coordination of resources, referrals, and  direct nursing care. Services included 18 patient contacts during the first 6 months after hospital discharge. The plan of care and intervention strategies were individually tailored to each patient’s needs and personal priorities and were determined jointly by the nurse and patient. | 4 |
| **Results** | | | **Conclusion** | | |
| In the case of nursing intervention only versus attention control, the rate of improvement in Mishel Uncertainty in Illness Scale (MUIS) was significantly greater for the intervention group (p=0.0006). However, in the case of Center for Epidemiological Studies–Depression Scale (CES-D), Symptom Distress Scale (SDS), and the Short-Form  Health Survey (SF-12)-physical scores, the attention control group appeared to perform better over time. When the intervention was modeled as three levels of increasing ‘dose’, then the intervention contributed to a significantly better improvement over time in the case of MUIS (p=0.0001) and SF-12-mental (p=0.0023), but less improvement over time for CES-D (p=0.0033) scores. The psychiatric consultation–liaison nurse (PCLN) component was found to significantly increase the rate of improvement over time for MUIS (p=0.0181), SDS (p=0.0001), SF-12-mental (p=0.0001), and SF-12-physical (p=0.0001) scores. For the CES-D, there was no significant effect of the PCLN component (p=0.64). | | | These findings substantially inform understanding of intervention strategies needed to improve QOL outcomes for patients recovering from cancer surgery and undergoing chemotherapy. They suggest the potential benefit of a comprehensive intervention directed by APNs with a PCLN psychological evaluation that spans the existential plight of cancer and bridges the transition from hospital to home, recovery from surgery, and initiation of chemotherapy. Nurse tailored interventions that target both physical and psychological aspects of QOL in women recovering from cancer surgery and undergoing chemotherapy produce stronger outcomes than interventions that target solely one QOL aspect. | | |

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| 25. Moreno L, Dale SB, Chen AY, et al. Costs to Medicare of the Informatics for Diabetes Education and Telemedicine (IDEATel) Home Telemedicine demonstration: Findings from an independent evaluation. *Diabetes care.* 2009;32(7):1202-1204.[25](#_ENREF_25) | To estimate the impacts on Medicare costs of providing a particular type of home telemedicine to eligible Medicare beneficiaries with type 2 diabetes. | Medicare beneficiaries receiving telehealth services(N=2,169) participated in this study. | Quantitative  Longitudinal | Two cohorts of beneficiaries living in two medically underserved areas of New York between 2000 and 2007 were randomized to intensive nurse case management via televisits or usual care. After randomization, treatment and control group members continued receiving diabetes care from their primary care physicians, but treatment group members’ physicians received recommendations from the IDEATel diabetologists concerning the care of participants. Treatment group members were offered installation of a home telemedicine unit (HTU) and training in its use. | 5 |
| **Results** | | | **Conclusion** | | |
| Informatics for Diabetes Education and Telemedicine (IDEATel) did not reduce Medicare costs in either site. Total costs were between 71 and 116% higher for the treatment group than for the control group. Only for cohort 1 were mean annual total Medicare Part B expenditures significantly higher (13% of the control group mean; p=0.025) for treatment group members than for control group members in upstate New York. Total intervention costs were $8,924 and $8,437 per person per year for phases I and II, respectively. The costs during phase II were lower than during phase I because the costs were spread over a longer period. The savings in total Medicare expenditures in any site or cohort were either nonexistent or too small to offset the high costs of the intervention. Total per-person costs were between $9,500 and $9,800 higher for treatment group than for control group members for cohort 1 and $6,200 to $8,700 for cohort 2 (p<0.001). | | | For IDEATel to be cost-effective, the intervention-related costs would have to be drastically reduced, while maintaining clinical impacts. Less expensive telephonic interventions and diabetes case-management programs have yielded comparable improvements in beneficiaries’ clinical outcomes to IDEATel’s impacts. Even if intervention costs were halved and the program reduced hospitalizations by 50%, both unlikely scenarios, the program would still increase costs to the government. | | |

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| 26. Ockene JK, Reed GW, Reiff-Hekking S. Brief patient-centered clinician-delivered counseling for high-risk drinking: 4-year results. *Annals of Behavioral Medicine.* 2009;37(3):335-342.[26](#_ENREF_26) | To determine the effect at 48 months of a screening and brief patient-centered physician- and nurse practitioner-delivered intervention implemented during a routine primary care visit on the reduction of alcohol consumption by high-risk drinkers. | The sample was comprised of patients (N=333) from 4 primary care internal medicine practices. | Quantitative  Longitudinal | The special intervention (SI) included training providers (MDs and nurse practitioners [NPs]) in 2 1/2-hour sessions to perform a brief (5–10 minute) patient-centered counseling intervention previously demonstrated to be effective with smokers and an office support system that screened patients, cued providers to intervene, and made patient education materials available. Usual care (UC) practices only had the educational materials available. | 3 |
| **Results** | | | **Conclusion** | | |
| At 48 months, SI participants maintained significant reductions in drinks per week seen at 6 and 12 months. However, there were no longer significant differences in drinks per week, binges per month, percentage of low-risk drinking, relapse rates, and new quits between the SI and UC groups at 48 months that had been seen at earlier follow-up. There was a significant effect of prior low-risk drinking status at 12 months; those who were low-risk drinkers at 12 months were more likely to stay low-risk drinkers at 48 months regardless of treatment group. | | | Overall, these data for the cohort of participants recruited into PH-II are consistent with the authors’ previous publications showing a significant effect of the single brief intervention at 6 and 12 months and the effect of reduced levels of drinking maintained at 48 months (relative to baseline) resulting in a reduction in health risk exposure time. However, at 48 months, both SI and UC groups had reduced their drinking by a similar amount and there were no longer between-group differences. | | |

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| 27. Parry C, Min SJ, Chugh A, et al. Further application of the care transitions intervention: Results of a randomized controlled trial conducted in a fee-for-service setting. *Home Health Care Services Quarterly.* 2009;28(2-3):84-99.[27](#_ENREF_28) | To test whether a self-care model for transitional care that has been demonstrated to improve outcomes in Medicare Advantage populations-The Care Transitions Intervention-could also improve outcomes in a Medicare fee-for-service population. | Patients (N=86) at a single senior care center participated in the study. | Quantitative  Longitudinal | The Care Transitions Intervention was designed to address potential threats to quality and safety during care transitions by providing patients and their caregivers with tools and support to encourage them to more actively participate in their care transitions. The Care Transitions Intervention promotes self-management of chronic conditions via a coaching model aimed at helping patients understand how to get their needs met and how to more effectively communicate during health care interactions. The intervention was built on four pillars or conceptual domains that were derived from patient and caregiver feedback obtained from earlier qualitative studies regarding those factors that would be most valuable to them during care transitions. The four pillars include: a) a reliable medication self-management system, b) a patient-centered record owned and maintained by the patient to facilitate cross-site information transfer, c) timely follow-up with primary or specialty care, and d) an unambiguous list of “red flags” indicative of a worsening condition and instructions on how to respond to them. The four pillars were operationalized through two mechanisms designed to encourage older patients and their caregivers to assert a more active role during care transitions as well as to foster care coordination and continuity across settings: a) a Personal Health Record (PHR) and b) a series of visits and phone calls with a Transition Coach. | 5 |
| **Results** | | | **Conclusion** | | |
| Intervention patients had lower hospital readmission rates than control patients at each time interval. The differences were statistically significant at 90 days. Intervention patients were significantly less likely to be rehospitalized at 90 and 180 days for the same condition that precipitated the index hospitalizations. | | | National attention to improving the quality of transitional care is expanding. Evidence-based models of care are needed that promote greater cross-setting collaboration between health care professionals and also between health care professionals and patients along with their family caregivers. The Care Transitions Intervention is a patient-centered self-care model that is designed to help patients ensure that their needs are met as they transition across settings. By ensuring that patients’ needs are met, this model may potentially reduce rates of subsequent hospital readmissions when employed in a variety of care settings and under different financing mechanisms. | | |

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| 28. Peikes D, Chen A, Schore J, et al. Effects of care coordination on hospitalization, quality of care, and health care expenditures among medicare beneficiaries 15 randomized trials. *JAMA - Journal of the American Medical Association.* 2009;301(6):603-618.[28](#_ENREF_29) | To determine whether care coordination programs reduced hospitalizations and Medicare expenditures and improved quality of care for chronically ill Medicare beneficiaries. | The sample was comprised of patients (N=18,309) from multiple health care practices in Maine; Baltimore, Maryland; Washington, DC; eastern Virginia; southern Florida; east central Illinois; St Louis, Missouri; northwestern Iowa and southeastern South Dakota; Phoenix, Arizona; New York City; eastern Pennsylvania; Houston, Texas; and central California. | Quantitative  Longitudinal | Nurses provided patient education and monitoring (mostly via telephone) to improve adherence and ability to communicate with physicians. Patients were contacted twice per month on average; frequency varied widely. All of the programs assigned patients to a care coordinator. Although one program used licensed practical nurses, all other programs required care coordinators to be registered nurses and 4 programs required them to have bachelor of science in nursing degrees. In all programs, the care coordinators assessed patients’ needs and developed patient care plans. | 1, 5 |
| **Results** | | | **Conclusion** | | |
| Two programs had treatment-control differences in the number of annual hospitalizations that were significant at the 5% level. Mercy reduced annual hospitalizations by 0.168 per person per year (17% of the control group mean, p=0.02). The Charlestown program had an increase of 0.118 hospitalizations per person per year or 19% more than the control group mean (p=0.04). In addition, Georgetown reduced annual hospitalizations by 0.494 per person per year (24% of the control group mean, p=0.07). None of the programs reduced regular Medicare expenditures, even without the fees paid to the care coordination programs. Only 2 programs had a significant difference in expenditures and, in both of these programs, the treatment group had higher expenditures (Charlestown by $186 per member per month [19%, p=0.03] and Carle by $61 per member per month [9%, p=0.08]). Treatment group members were approximately 1.3 to 2.6 times (6.1 to 40 percentage points) more likely than control group members to recall receiving education during the preceding 12 months on diet, exercise, and warning signs of disease exacerbation, and receiving educational materials. | | | Viable care coordination programs without a strong transitional care component are unlikely to yield net Medicare savings. Programs with substantial in-person contact that target moderate to severe patients can be cost-neutral and improve some aspects of care. Results suggest that care coordination, as practiced by the programs participating in the demonstration from 2002 to 2006, holds little promise of reducing total Medicare expenditures for beneficiaries with chronic illnesses. These findings are relevant to recent policy interest in medical homes as a way to improve care coordination, improve quality, and reduce costs. By providing close links between the patient’s nurse coordinator and physician, substantial in-person contact between the patient and the care coordinator, and (presumably) timely information on hospital admissions, the medical home model may be able to replicate or exceed the success of the most effective Medicare Coordinated Care Demonstration (MCCD) programs. However, the modest benefits suggest that future research will need to determine how to more effectively improve patient outcomes. The successful interventions also may offer more detailed lessons for medical homes about how best to educate and monitor patients, the types of patients for whom they are likely to be most effective, and how to help patients overcome barriers to better self-care. | | |

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| 29. Powers BJ, Olsen MK, Oddone EZ, et al. The Effect of a Hypertension Self-Management Intervention on Diabetes and Cholesterol Control. *American Journal of Medicine.* 2009;122(7):639-646.[29](#_ENREF_30) | To evaluate the effect of a tailored hypertension self-management intervention on the unintended targets of glycosylated hemoglobin (HbA1c) and low-density lipoprotein cholesterol (LDL-C). | The sample was comprised of patients (N=744) from 3 Durham VA (Veterans Affairs) Medical Center primary care clinics. | Quantitative  Longitudinal  2-Year Cluster Randomized Control Trial | The nurse telephoned patients within 1 week of randomization and then every 2 months over 24 months to deliver the intervention for a total of 12 nurse calls. At each call, the nurse delivered scripted information drawn from the following 9 educational and behavioral modules: hypertension knowledge; memory; social support; patient/provider communication; medication refill reminders; appointment compliance; health behaviors (diet, exercise, smoking, alcohol use); health literacy aids; and medication side effects. To ensure that the intervention information was standardized, the nurse used a database application, which contained predetermined scripts and tailoring algorithms. | 3 |
| **Results** | | | **Conclusion** | | |
| For the patients with diabetes, the hypertension self-management intervention resulted in a 0.46% reduction in HbA1c over 2 years compared with usual care (95% confidence interval, 0.04%-0.89%; p=0.03). For LDL-C, there was a minimal 0.9 mg/dL between-group difference that was not statistically significant (95% confidence interval, −7.3-5.6 mg/dL; p=0.79). The mean HbA1c decreased by 0.28% in the intervention arm (95% confidence interval [CI], 0.59-0.04), but increased by 0.18% in the usual care arm (95% CI 0.11-0.47). Based on the linear mixed-effects model, the estimated mean reduction in HbA1c over 2 years in the intervention compared with the usual care group was 0.46% (95% CI, 0.04%-0.89%; p=0.03). Patients’ estimated baseline HbA1c (random intercept) and 2-year change (slope) were negatively correlated, indicating that patients with higher levels at baseline had steeper rates of improvement over the 2-year period. However, this correlation was similar in the intervention and control groups, suggesting that the intervention was not more effective in patients with higher baseline HbA1c. While LDL-C decreased over the 2-year study period in both groups, there was no significant between-group difference in this outcome, with an estimated mean difference of 0.9 mg/dL LDL-C lowering in the usual care group compared with the nurse self-management intervention (95% CI, 7.3-5.6; p=0.79). Similar to the analysis of HbA1c, patients with higher LDL-C at baseline had steeper rates of improvement over the 2-year  period; however, there was no differential effect between the intervention and control groups. | | | There was a significant effect of the self-management intervention on the unintended target of HbA1c,but not LDL-C. Chronic disease self-management interventions might have “spill-over” effects on patients' comorbid chronic conditions. There was some evidence that a telephone administered nurse self-management intervention targeting blood pressure control may have a modest “spill-over” effect on diabetes control at 2 years; however, the intervention had no significant effect on LDL cholesterol. Given the growing prevalence of multimorbidity and the synergistic relationship between cardiovascular risk factors, interventions that can simultaneously target multiple determinants of risk may be particularly valuable in optimizing patient outcomes. | | |

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| 30. Resnick B, Cayo J, Galik E, et al. Implementation of the 6-week educational component in the Res-Care intervention: Process and outcomes. *Journal of continuing education in nursing.* 2009;40(8):353-360.[30](#_ENREF_31) | To describe the implementation of a restorative care educational program that was a central component of the Res-Care Intervention program. | Nursing assistants (N=523) in nursing homes (N=12) participated in this study. | Quantitative  Longitudinal | A total of 523 nursing assistants consented to participate in the study, with 265 of these individuals working at sites randomized to treatment. The 6-week educational component of the Res-Care Intervention was developed to help nursing assistants change their philosophy of long-term care from one focused on providing care for residents to one geared toward optimizing function in each resident by encouraging each individual to engage in all activities at his or her highest functional level engagement may range from participating in hand-over-hand bathing to attending an exercise class. All nursing assistants working at the facility were invited and encouraged to attend the educational sessions, regardless of whether they consented to participate in the Res-Care Intervention study. The nursing assistants at the treatment site had 6 weeks of training on restorative care that involved 30 minutes of education each week. Nursing assistants at the control sites had a single 30-minute in-service on managing behavioral problems commonly seen in dementia. All educational sessions were provided by an advanced practice nurse who was a member of the research team. | 1 |
| **Results** | | | **Conclusion** | | |
| Immediately after the 6-week educational training for restorative care, there was a statistically significant increase in the number of correct responses on the Restorative Care Knowledge test to 11.4 (SD=2.7, F=280.4, p<0.05). | | | The Res-Care Intervention used multiple methods (group instruction, individual instruction, and paper-and-pencil test) to expose the nursing assistants to the 6-week in-service program about restorative care. Nearly 86% of the participants who gave consent to participate at the treatment sites were exposed to this material. Rigorous follow-up was provided by each site’s restorative care nurse, with more than half of participants being exposed during one-on-one educational sessions. Conversely, without the same rigorous follow-up, only a small percentage (18%) of those at the control sites was exposed to the in-service educational sessions. These findings were consistent with earlier reports of attendance during educational sessions in nursing home settings. Moreover, the experience reinforced the importance of addressing the nursing home environment (e.g., workload, administrative support) and the needs of the learners (e.g., interest, learning style). The authors found that at the sites where the nursing assistants were scheduled to attend class or told that the in-service sessions were mandatory, attendance rates tend to be higher. Unfortunately, the research team did not have any administrative authority within the study sites and consequently had little control over how invested the administrators would be in ensuring nursing assistant attendance at the training sessions. | | |

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| 31. Resnick B, Gruber-Baldini AL, Zimmerman S, et al. Nursing home resident outcomes from the res-care intervention. *Journal of the American Geriatrics Society.* 2009;57(7):1156-1165.[3](#_ENREF_32)1 | To test the effectiveness of a restorative care (Res-Care) intervention on function, muscle strength, contractures, and quality of life of nursing home residents, with secondary aims focused on strengthening self-efficacy and outcome expectations. | Residents (N=487) from Maryland nursing homes (N=12) participated in this study. | Quantitative  Longitudinal  Randomized Controlled Repeated-Measure Design | Res-Care was a two-tiered self-efficacy-based intervention focused on motivating nursing assistants and residents to engage in functional and physical activities. The Barthel Index, Tinetti Gait and Balance, grip strength, Dementia Quality-of-Life Scale, self-efficacy, and Outcome Expectations Scales for Function were used to measure outcomes. All nursing assistants (NAs) working in the treatment sites were invited to attend a 6-week in-service program provided by an advanced practice nurse. Some of the NAs who participated in the Res-Care intervention in-service also consented to participate in pre- and post-evaluations of knowledge and self-efficacy; these results are reported elsewhere. Days and timing of the weekly classes were based on the recommendation of administrative staff in the facilities and generally were held once a week at two different time points for the day and evening shifts. The classes were interactive and involved role playing and discussions with the NAs about their prior experiences, knowledge, and concerns associated with restorative care. | 4 |
| **Results** | | | **Conclusion** | | |
| There were significant treatment-by-time interactions (p<0.05) found for the Tinetti Mobility Score and its gait and balance subscores and for walking, bathing, and stair climbing. Specifically, there was significant improvement in overall mobility and balance from baseline to 4 months (from 4.74 to 5.70 in the intervention group vs. from 6.71 to 6.33 in the control group for mobility and from 2.59 to 3.20 in the intervention group vs. from 3.50 to 3.28 in the control group for balance) and less decline in gait at 12 months (from 2.29 to 2.27 at 12 months in the intervention group vs. from 3.18 to 2.32 in the control group). There was no significant difference over time between groups with regard to contractures, grip strength, quality of life, self-efficacy, or outcome expectations. | | | The findings provide some evidence for the utility and safety of a Res-Care intervention in terms of improving function in NH residents. The findings from this study provide some support for the primary hypotheses focused on maintaining or improving function in nursing home (NH) residents. Future restorative care studies should focus on functional activities, as according to the Barthel Index, and include the use of actigraphy to more objectively establish the overall physical activity of residents. Increasing physical activity may have a greater overall benefit in terms of mood and quality of life of the residents | | |

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| 32. Rollman BL, Herbeck Belnap B, LeMenager MS, et al. Telephone-delivered collaborative care for treating post-CABG depression: A randomized controlled trial. *JAMA - Journal of the American Medical Association.* 2009;302(19):2095-2103.[32](#_ENREF_33) | To test the effectiveness of telephone-delivered collaborative care for post- coronary artery bypass graft (CABG) depression vs. usual physician care. | Patients (N=302) from 7 university-based and community hospitals in or near Pittsburgh, Pennsylvania participated in this study. | Quantitative  Longitudinal | Eight months of telephone-delivered collaborative care was provided by nurses working with patients' primary care physicians and supervised by a psychiatrist and primary care physician from this study. A nurse care manager telephoned intervention patients to review their psychiatric history, provide basic psychoeducation about depression and its effect on cardiac disease, and describe treatment options. Treatment options included providing a workbook to enhance patients’ understanding and ability to self-care for depression; initiation or adjustment of antidepressant pharmacotherapy prescribed under their primary care physician’s direction; watchful waiting for mildly elevated mood symptoms; or referral to a local mental health specialist (psychologist or psychiatrist). | 3, 4, 5 |
| **Results** | | | **Conclusion** | | |
| The intervention patients reported greater improvements in mental HRQL (all *p*≤0.02) (SF-36 MCS: Δ, 3.2 points; 95% confidence interval [CI], 0.5-6.0), physical functioning (DASI: Δ, 4.6 points; 95% CI, 1.9-7.3), and mood symptoms (HRS-D: Δ, 3.1 points; 95% CI, 1.3-4.9); and were more likely to report a 50% or greater decline in HRS-D score from baseline (50.0% vs. 29.6%; number needed to treat, 4.9 [95% CI, 3.2-10.4]) than usual care patients (p<0.001). Men with depression were particularly likely to benefit from the intervention (SF-36 MCS: Δ, 5.7 points; 95% CI, 2.2-9.2; p=0.001). However, the mean HRQL and physical functioning of intervention patients did not reach that of the non-depressed comparison group. | | | Compared with usual care, telephone-delivered collaborative care for treatment of post-CABG depression resulted in improved HRQL, physical functioning, and mood symptoms at 8-month follow-up. Additional research is necessary to develop improved treatments for women and patients with resistant depression, and to examine the economic effect of this intervention. | | |

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| 33. Schillinger D, Wang F, Handley M, et al. Effects of self-management support on structure, process, and outcomes among vulnerable patients with diabetes. *Diabetes care.* 2009;32(4):559-566.[33](#_ENREF_34) | To examine the effects of two self-management support (SMS) strategies across outcomes corresponding to the Chronic Care Model. | The sample was comprised of patients (N=339) from multiple community health clinics in the San Francisco Department of Public Health. | Quantitative  Longitudinal | Outpatients with poorly controlled diabetes from county-run clinics were enrolled in a three-arm trial. Participants, more than half of whom spoke limited English, were uninsured, and/or had less than a high school education, were randomly assigned to usual care, interactive weekly automated telephone self-management support with nurse follow-up (ATSM), or monthly group medical visits with physician and health educator facilitation (GMV). SMS models were delivered in English, Spanish, and Cantonese. We measured 1-year changes in structure (Patient Assessment of Chronic Illness Care [PACIC]), communication processes (Interpersonal Processes of Care [IPC]), and outcomes (behavioral, functional, and metabolic). | 2, 3 |
| **Results** | | | **Conclusion** | | |
| Compared with the usual care group, the ATSM and GMV groups showed improvements in PACIC, with effect sizes of 0.48 and 0.50, respectively (p=0.01). Only the ATSM group showed improvements in IPC (effect sizes 0.40 vs. usual care and 0.25 vs. GMV,  p<0.05). Both SMS arms showed improvements in self-management behavior versus the usual care arm (p<0.05), with gains being greater for the ATSM group than for the GMV group (effect size 0.27, p= 0.02). The ATSM group had fewer bed days per month than the usual care group (-1.7 days, p< 0.05) and the GMV group (-2.3 days, p=0.01) and less interference with daily activities than the usual care group (odds ratio 0.37, p=0.02). | | | Patient-centered SMS improves certain aspects of diabetes care and positively influences self-management behavior. ATSM seems to be a more effective communication vehicle than GMV in improving behavior and quality of life. Providing tailored SMS for linguistically and ethnically diverse diabetic patients in a safety net system resulted in improvements in patients’ experiences with chronic illness care, self-efficacy, and self-management behaviors. The ATSM model, which combines accessible technology with targeted interpersonal support, yielded more robust and consistent improvements across many levels of the CCM, including functional status. For SMS programs to also translate into improvements in metabolic indicators, they may need to be combined with additional features of the CCM, such as decision support regarding medication intensification. | | |

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| **Randomized Controlled Trials (N=51)** | | | | | |
| **Citation** | **Study Aim** | **Population/ Setting** | **Study Design** | **Methods** | **Outcome Measures**  1=care processes  2=patient experience  3=patient health indices  4=quality of life  5=cost |
| 34. Schnipper JL, Hamann C, Ndumele CD, et al. Effect of an electronic medication reconciliation application and process redesign on potential adverse drug events: a cluster-randomized trial. *Arch Intern Med.* Apr 27 2009;169(8):771-780.[34](#_ENREF_35) | To measure the impact of an information technology-based medication reconciliation intervention on medication discrepancies with potential for harm (potential adverse drug events [PADEs]). | The sample was comprised of patients (N=322) at 2 large academic hospitals in Boston, Massachusetts. | Quantitative  Longitudinal | The intervention consisted of an IT application designed to facilitate medication reconciliation, integrated into the internally developed computerized provider order entry (CPOE) systems at the 2 hospitals, and process redesign involving physicians, nurses, and pharmacists. Patients in the usual care study arm received the pre-intervention standard of care. Residents documented medication histories in admission notes; pharmacists reviewed medication orders for appropriateness. At discharge, physicians wrote discharge orders (without facilitated access to preadmission medication histories); nurses educated patients about their medications. | 1 |
| **Results** | | | **Conclusion** | | |
| Among 160 control patients, there were 230 PADEs (1.44 per patient), while among 162 intervention patients there were 170 PADEs (1.05 per patient) (adjusted relative risk [ARR], 0.72; 95% confidence interval [CI], 0.52-0.99). A significant benefit was found  at hospital 1 (ARR, 0.60; 95% CI, 0.38-0.97) but not at hospital 2 (ARR, 0.87; 95% CI, 0.57-1.32) (p=0.32 for test of effect modification). Hospitals differed in the extent of integration of the medication reconciliation tool into computerized provider order entry applications at discharge. | | | An interdisciplinary medication reconciliation intervention comprising novel IT and process redesign was associated with a significant reduction in unintentional medication discrepancies with potential for harm. Institutions should strongly consider adopting electronic medication reconciliation tools as availability increases. Site-specific differences suggest that electronic medication reconciliation tools should facilitate comparisons of medication lists at transition points and use of these lists to order medications for the next care setting. Provider education on taking complete medication histories and purposeful “independent redundancies” in the reconciliation process (e.g., nurses verifying the accuracy of physician-produced medication histories) are also likely important to the success of any medication reconciliation effort. Future research should be directed at more rigorous evaluations of the environments, medication reconciliation interventions, and implementation characteristics that best improve outcomes and at further development and evaluation of commercially available electronic medication reconciliation tools. Ideally, multicenter studies using methods such as randomized controlled trials or interrupted time series analyses should be conducted using more downstream health outcomes (such as total ADEs and hospital readmissions). More work is needed to eliminate serious medication reconciliation errors and make transitions in care as safe as possible. | | |

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| 35. Schnipper JL, Ndumele CD, Liang CL, et al. Effects of a subcutaneous insulin protocol, clinical education, and computerized order set on the quality of inpatient management of hyperglycemia: results of a clinical trial. *J Hosp Med.* Jan 2009;4(1):16-27.[35](#_ENREF_119) | To determine the effects of a multifaceted quality improvement intervention on the management of medical inpatients with diabetes mellitus or hyperglycemia. | The sample was comprised of consecutively enrolled patients (N=169) with type 2 diabetes or inpatient  hyperglycemia. | Quantitative  Longitudinal | The study intervention consisted of three components. First, a glycemic management protocol was developed, consisting of a set of specific treatment  recommendations, including: 1) bedside glucose monitoring; 2) stopping oral diabetes agents in most patients; 3) estimating total daily insulin requirements; 4) prescribing basal, nutritional, and supplemental insulin based on the patient’s total insulin requirements, preadmission medication regimen, and nutritional status; 5) adjusting insulin on a daily basis as needed; 6) managing hypoglycemia; 7) suggestions for discharge orders; and 8) indications for an endocrinology consultation. The protocol was printed as a pocket guide, distributed to all members of the PACE service, and used to guide all other interventions. The second intervention component consisted of diabetes educational sessions. The third was an order set built into the computer provider order entry (CPOE) system, which was created to parallel the glycemic management protocol and facilitate insulin orders for patients eating discrete meals, receiving continuous liquid enteral nutrition (tube feeds), or receiving nothing by mouth. Other components of the order set facilitated glucose monitoring and other laboratory tests and ordering consultation when appropriate. | 1, 3 |
| **Results** | | | **Conclusion** | | |
| The mean percent of readings per patient between 60 and 180 mg/dL was 59% prior to the intervention and 65% afterward (adjusted effect size 9.7%; 95% confidence interval [CI], 0.6%-18.8%). The percent of patient days with any hypoglycemia was 5.5% pre-intervention and 6.1% afterward (adjusted odds ratio 1.1; 95% CI, 0.6–2.1). Use of scheduled nutritional insulin increased from 40% to 75% (odds ratio 4.5; 95% CI, 2.0–9.9) and adjusted length of stay decreased by 25% (95% CI, 9%-44%). Daily insulin adjustment did not improve, nor did glucose control beyond hospital day 3. | | | The authors found a relationship between a relatively low-cost quality improvement intervention and improved glycemic control in the non-ICU general medical setting. Such a finding suggests the benefits of the algorithm itself to improve glucose control and of the implementation strategy. Other institutions may find this intervention a useful starting point for their own quality improvement efforts. Both the algorithm and implementation strategy are deserving of further improvements and future study. | | |

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| 36. Schraeder C, Fraser C, Clark I, et al. The effect of primary care management on lipids testing and LDL-C control of elderly patients with comorbidities. *Professional Case Management.* 2009;14(2):84-95.[36](#_ENREF_36) | To evaluate the effectiveness of the Medicare Coordinated Care Demonstration (MCCD) Illinois site, on selected clinical outcomes over 36 months. | The sample consisted of Medicare Part A & B patients (N=1,977) from the Carle Clinic Association practices & Carle Foundation hospital in rural areas of east central Illinois. | Quantitative  Longitudinal | The Carle MCCD intervention contains the core components of the chronic care model (CCM), including a delivery system providing a combination of case management and disease management services by primary care teams. A key emphasis of the intervention is to develop the patient’s ability to self-manage his or her chronic condition(s) with support from a nurse case manager (NCM). This support includes providing individualized assessment, care planning, education, coordination, and psychosocial support. Patient, NCM, and physician decision supports include having access to appropriate blood tests, trended laboratory test results and other health measures, and disease-specific, evidence-based medical and nursing guidelines maintained by a board of MCCD medical directors. Electronic clinical information systems allow for “real time” access to individual patient information, as well as the tracking of individual contacts and interventions. The tracking systems provide e-mail alerts notifying the NCM about specific patient contact within the Carle system, including emergency department visits, hospital admissions and discharges, outpatient procedures, and appointments with other clinicians. | 1, 3 |
| **Results** | | | **Conclusion** | | |
| Intervention group patients had higher lipids-testing rates during the first 2 years than control group patients. Once tested, more than 80% of patients in both groups were retested in subsequent years. There were no differences in the percentage of intervention group patients who were in low-density lipoprotein cholesterol (LDL-C) control at program entry and at the end of 36 months as compared with control group patients (maintained control). However, a higher percentage of intervention group patients who were not in the LDL-C control at baseline were in control after 36 months as compared with control group patients (achieved control). | | | This study suggests that physician-NCM team care in an integrated, multispecialty group practice can accelerate patient and physician guideline adherence, but that this effect diminishes over time as guidelines are adopted into general practice. It also suggests that clinical health status indicators, in this case LDL-C therapeutic control, can be improved in an elderly, comorbid patient population through increased lipids testing and the use of lipid-lowering medications. | | |

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| 37. Shea S, Weinstock RS, Teresi JA, et al. A Randomized trial comparing telemedicine case management with usual care in older, ethnically diverse, medically underserved patients with Diabetes Mellitus: 5-year results of the IDEATel Study. *J Am Med Inform Assoc.* 2009;16(4):446-456.[37](#_ENREF_37) | To examine the effectiveness of a telemedicine intervention to achieve clinical management goals in older, ethnically diverse, medically underserved patients with diabetes. | The sample was comprised of Medicare recipients (N=1,665) residing in New York State. | Quantitative  Longitudinal | Participants randomized to the intervention group received a home telemedicine unit (American Telecare, Inc, Eden Prairie, MN) consisting of a web-enabled computer with modem connection to an existing telephone line. The home telemedicine unit had the  following components: 1) a web camera that allowed video conferencing with nurse case managers at the Berrie Diabetes Center at Columbia University or the Joslin Diabetes Center at SUNY Upstate Medical University; 2) home glucose meter and blood pressure cuff connected to the home telemedicine unit through an RS-232 serial port, so that home fingerstick glucose and blood pressure readings could be uploaded into a clinical database; 3) access to patients’ own clinical data; and 4) access to a special educational web page created for the project by the American Diabetes Association in English and Spanish and in regular and low-literacy versions in each language. Nurse case managers were trained in diabetes management and in the use of computer-based case management tools to facilitate interactions through videoconferencing with patients. | 3 |
| **Results** | | | **Conclusion** | | |
| In the intervention group (N=844), mean HgbA1c improved over one year from 7.35% to 6.97% and from 8.35% to 7.42% in the subgroup with baseline HgbA1c ≥7% (N=353). In the usual care group (N=821) mean HgbA1c improved over one year from 7.42% to 7.17%. Adjusted net reductions (one-year minus baseline mean values in each group, compared between groups) favoring the intervention were as follows: HgbA1c, 0.18% (p = 0.006), systolic and diastolic blood pressure, 3.4 (p=0.001) and 1.9 mm Hg (p<0.001), and LDL cholesterol, 9.5 mg/dL (p < 0.001). In the subgroup with baseline HgbA1c ≥7%, net adjusted reduction in HgbA1c favoring the intervention group was 0.32% (p=0.002). Mean LDL cholesterol level in the intervention group at one year was 95.7 mg/dL. The intervention effects were similar in magnitude in the subgroups living in New York City and upstate New York. | | | Telemedicine case management intervention achieved reductions in HgbA1c, LDL-cholesterol, and systolic and diastolic blood pressure levels net of changes over time in the group receiving usual care. No differences were seen between the groups in all-cause mortality. The study population was a large, ethnically diverse sample of elderly Medicare beneficiaries residing in medically underserved areas. This study is unique in the current medical literature due to its duration, large sample size, the inclusion of both rural and urban participants, and the multiple barriers to medical care the participants faced. The IDEATel study provides much needed evidence supporting the effectiveness of telemedicine as a means to deliver long term diabetes care to at risk populations. | | |

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| 38. Shelledy DC, Legrand TS, Gardner DD, et al. A randomized, controlled study to evaluate the role of an in-home asthma disease management program provided by respiratory therapists in improving outcomes and reducing the cost of care. *J Asthma.* Mar 2009;46(2):194-201[38](#_ENREF_38) | To compare the effectiveness  of a five-week, in-home asthma management program (AMP) provided by respiratory therapists (RTs) to a program  provided by nurses (RNs) and to usual care (UC) provided in physician offices or clinics. | Patients (N=159) in a home care setting participated in this study. | Quantitative  Longitudinal | Subjects (age 18–64) who had been admitted to the emergency department (ED) or hospital for acute asthma exacerbation were randomized to three groups: AMP-RT, AMP-RN or UC. Subjects in the UC group were instructed to return to their regular primary care physicians for routine follow-up. The two AMP groups received an in-home program provided by an RT or RN. The respiratory therapists and nurses employed for the AMP arms of the study had graduated from an accredited college or university respiratory therapy or registered nurse educational program of at least two years in length and held state licenses in Texas as respiratory care practitioners (RCP) or registered nurses (RN). The AMPs included: 1) use of objective measures of lung function to assess severity of asthma and to monitor the course of therapy; 2) environmental control measures to avoid or eliminate factors that precipitate asthma symptoms or exacerbations; 3) comprehensive pharmacological therapy for long-term management designed to reverse and prevent the airway inflammation characteristic of asthma as well as pharmacological therapy to manage asthma exacerbations; 4) patient education that fosters a partnership among the patient, his or her family, and clinicians. | 1, 2, 3, 5 |
| **Results** | | | **Conclusion** | | |
| At 6 months, both AMP groups (AMP-RN N=54; AMP-RT N=46) had significantly fewer (p*<*0.05) hospitalizations and in-patient days, lower hospitalization costs, and greater HRQOL physical component summary change scores (PCS) and PS than UC (N=59). AMP-RT also had greater PEFR, SGRQ Total and SGRQ Symptoms change scores when compared to UC and significantly better AESM and PS scores as compared to AMP-RN and UC. | | | A 5-week in-home asthma management program delivered to patients following an ED or hospital asthma admission can improve outcomes and reduce hospitalization costs when compared to usual care. Respiratory therapists and nurses were equally effective in reducing the number of hospitalizations, length of stay and hospital costs and in improving the SF-36 physical summary scores. The RT group also  had better PEFR, SGRQ Total and SGRQ Symptoms change scores, higher asthma episode self - management scores, and better PS when compared to usual care. An in-home asthma management program can be effectively delivered by respiratory therapists and may reduce hospitalizations, cost, and improve the quality of life and patient satisfaction in a population prone to asthma exacerbation. | | |

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| 39. Sikorskii A, Given CW, Given B, et al. Differential symptom reporting by mode of administration of the assessment: Automated voice response system versus a live telephone interview. *Medical care.* 2009;47(8):866-874.[39](#_ENREF_39) | To evaluate if there is a differential reporting of symptoms by the mode of assessment: automated voice response (AVR) versus a live telephone interview among cancer patients with solid tumors undergoing chemotherapy. | Patients (N=386) at multiple hospitals / oncology clinics participated in this study. | Quantitative  Longitudinal | After completing intake telephone interview administered by a person, patients were randomized to either nurse arm or AVR arm to receive a 6-contact 8-week symptom management intervention. Patients in the nurse arm were called by specially trained nurses, and patients in the AVR arm were contacted via automated system to assess their symptoms and deliver symptom management strategies. Each telephone contact began with the assessment of severity of symptoms on a 0-10 rating scale. In the nurse-directed arm, tailored cognitive-behavioral symptom management strategies supplemented with the reference to the Symptom Management Guide (SMG) were delivered for symptoms above threshold of 4 in severity. In the AVR arm, a pre-recorded female voice queried patients regarding their severity for their symptoms. To rate symptom severity, patients pressed the appropriate numbers on their telephone keypads. For symptoms rated at 4 or higher, the AVR delivered information and self-care strategies: patients were directed to the sections of the SMG that informed them about strategies to manage the symptoms that were above threshold. | 3 |
| **Results** | | | **Conclusion** | | |
| When compared with patients contacted by a nurse, patients contacted by the AVR reported higher severity of nausea and vomiting, diarrhea, poor appetite, constipation, diarrhea, pain, and alopecia controlling for prior intake symptom assessment that was free of mode effect. Symptom reporting varied by age, with the oldest group of patients reporting higher severity to the nurse. | | | The results highlight the importance of accounting for mode effects in designing trials of interventions for symptom management. When different types of interventions are delivered using different modes, and symptom assessments are used to determine which symptoms should and which should not be targeted with interventions, mode effects need to be considered. For example, according to the National Comprehensive Cancer Network guidelines, scores of 4 or higher in severity indicate the need for symptom management. However, if given the same underlying level of severity, patients report this severity differently to an AVR versus a nurse, then adjustments to the thresholds that trigger intervention delivery are needed. | | |

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| 40. Skelly AH, Carlson J, Leeman J, et al. Controlled trial of nursing interventions to improve health outcomes of older African American women with type 2 diabetes. *Nursing research.* 2009;58(6):410-418.[40](#_ENREF_40) | To test the effectiveness of the symptom-focused diabetes intervention, it was compared to an attentional control focused on weight management and diet skills training in older African American women with type 2 diabetes, residing in the rural Southeast. | African American women (N=180) in multiple community health / primary care clinics participated in this study. | Quantitative  Longitudinal | The symptom-focused intervention involved teaching and counseling modules delivered by a nurse in the participant's home over a series of four 60-minute bimonthly visits. Three months after completion of the intervention, participants in the booster arm received four telephone calls at approximately 2-3 week intervals with the spacing of the calls covering a 12-week interval similar to that of the intervention. Calls averaged 15 minutes each. To build on the therapeutic relationship formed during home visits, the calls were made by the same intervention nurse that made the home visits, using an established protocol. The intervention's effects on metabolic control (HBA1c level), symptom distress, perceived quality of life, and self-care practices were evaluated in comparison to the attentional control. Also evaluated was the impact of a booster intervention on sustaining the effects of the symptom-focused intervention. | 3 |
| **Results** | | | **Conclusion** | | |
| Baseline HbA1 was 8.3 in the intervention group (N=60), 8.29 in the intervention with booster group (N=55), and 8.44 in the attentional control condition (N=59). HbA1c declined significantly in the whole sample (0.57%) with no differences between study arms. Participants in the booster arm decreased HbA1c by 0.76%. Symptom distress, perceived quality of life, impact of diabetes, and self-care activities also improved significantly for the whole sample with no significant differences between study arms. | | | In summary, the data support the effectiveness of both the symptom-focused intervention and weight and diet attentional control. The symptom-focused intervention was particularly effective when supplemented with a telephone booster, achieving a .76% drop in HbA1c over 9 months in a high-risk group of African American elders. Both approaches and the addition of the booster were parsimonious in terms of contact time (4 hours in-home visits + 1-1.5 hours of phone contacts for the booster) and, thereby, are readily translatable to practice. The high retention rates and positive feedback from participants indicate that the interventions were well-received by participants. The study findings suggest that the symptom-focused and weight and diet approaches can be combined into a revised intervention with the potential for a greater effect on outcomes. | | |

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| 41. Song MK, Ward SE, Happ MB, et al. Randomized controlled trial of SPIRIT: An effective approach to preparing African-American dialysis patients and families for end of life. *Research in Nursing and Health.* 2009;32(3):260-273.[41](#_ENREF_41) | To determine the feasibility and acceptability of the Sharing Patients’ Illness Representations to Increase Trust (SPIRIT) in African Americans with ESRD and their surrogate decision makers; and examine the preliminary effects of SPIRIT on patient-surrogate congruence in goals of care,  patients’ decisional conflict, surrogate decision making confidence, and participants’  psychosocial-spiritual well-being. | The sample was comprised of dyads (N=58) of African American patients and caregivers from out-patient dialysis centers (N=6) in western Pennsylvania. | Quantitative  Qualitative  Longitudinal  Randomized Controlled, Pre/post-test | Participants (patient-surrogate dyads) were stratified by type of dialysis (hemodialysis vs. peritoneal) and then randomized with equal allocation to the SPIRIT intervention or to usual care control, using permuted block randomization. SPIRIT was an approximately 1-hour, single session, interview with a patient-surrogate dyad, delivered by a trained nurse interventionist who had completed 3.5 days of training. The training was a competency based program using training manuals and it relied primarily on role playing and skill demonstration. The nurse interventionist was not African American and had 13 years of clinical experience in medical/surgical nursing. The intervention took place in a private room at the dialysis clinic either before or after dialysis or on a nondialysis day depending on the dyad’s preference. For peritoneal dialysis patients, intervention sessions were delivered after their clinic appointment. Researchers evaluated patients’ deaths and surrogates’ end-of-life decision making to assess surrogates’ perceptions of the benefits and limitations of the SPIRIT while facing end-of-life decisions. | 1, 2 |
| **Results** | | | **Conclusion** | | |
| Intervention dyads’ congruence at T2 was significantly improved from baseline (χ2 [1, N=57] =4.29, p=0.04, odds ratio = 3.30). However, dyads’ congruence at T3 was not significantly improved from baseline (χ2 [1, N=54] = 2.64, p=0.10). Patients’ decisional conflict did not change over time; there were no group differences in changes (T1 - T2 & T1 - T3). Surrogates’ decision making confidence and both patients and surrogates psychosocial-spiritual well-being in the two groups improved over time, but there were no differences between the groups on these measures. The intervention patients’ quality of communication scores were significantly higher than the control group at T2 (U=283.50, p=0.03) and T3 (U=165.00, p<0.01). Similarly, the intervention surrogates’ quality of communication scores were significantly higher than the control group at T2 (U=95.00, p<0.01) and T3 (U=139.00, p=0.03). Compared to control patients, those in the intervention group reported better (lower scores) quality of the interaction during intervention at T2 (U = 180.00, p<0.01, U=183.50, p<0.01). Intervention surrogates, compared to control surrogates, reported better (lower scores) quality of the interaction with the interventionist at T2 (U=139.00, p=0.01), but U=147.50, p=0.08). | | | The authors found SPIRIT to promote communication between African American dialysis patients and their chosen surrogates was effective and well received. A subsequent session may help patients and their surrogates make practical plans to communicate patients’ wishes with others (e.g., other family members, spiritual advisors, and healthcare providers). Study findings from the 4 patient deaths suggest further tests of SPIRIT to examine its efficacy in reducing surrogate difficulties in end-of-life decision making and potential benefits on bereavement. | | |

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| 42. Swanson KM, Chen HT, Graham JC, et al. Resolution of depression and grief during the first year after miscarriage: A randomized controlled clinical trial of couples-focused interventions. *Journal of Women's Health.* 2009;18(8):1245-1257.[42](#_ENREF_42) | To examine the effects of three couples-focused interventions and a control condition on women and men's resolution of depression and grief during the first year after miscarriage. | The sample was comprised couples (N=341) within the Puget Sound (Washington) area. | Quantitative  Longitudinal  Repeated Measures Pre/post-test | Three hundred forty-one couples were randomly assigned to nurse caring (NC) (three counseling sessions), self-caring (SC) (three video and workbook modules), combined caring (CC) (one counseling session plus three SC modules), or control (no treatment). Interventions, based on Swanson's Caring Theory and Meaning of Miscarriage Model, were offered 1, 5, and 11 weeks after enrollment. The content for all three interventions in the Couples Miscarriage Healing Project (CMHP) was based on the Meaning of Miscarriage Model (MMM). | 3 |
| **Results** | | | **Conclusion** | | |
| There was no evidence to suggest that self-caring (SC), combined caring (CC), or control was more effective than nursing care (NC) in hastening women or men's resolution of pure grief (PG), grief-related emotions (GRE), or depression. Furthermore, under no circumstance did co-varying on CES-D scores at each measurement wave make a meaningful difference in interpretation of the relative effectiveness of NC, SC, and CC on women or men's resolution of PG or GRE. | | | The findings provided evidence that one fairly rushed counseling session (as in CC) was not enough to positively influence women's depression and may have played a part in hindering men's resolution of depression. Three sessions, however, hastened women's resolution of depression and, at the very least, did no harm to men's. The authors conclude that whereas SC was quite effective in hastening women’s grief resolution and CC positively accelerated men’s grief resolution, it took three theory-based couples-focused nurse counseling sessions to most adequately support couples’ emotional healing after miscarriage. | | |

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| 43. Tappen RM, Williams CL. Therapeutic conversation to improve mood in nursing home residents with Alzheimer's disease. *Research in Gerontological Nursing.* 2009;2(4):267-275.[43](#_ENREF_43) | To test a newly developed, empirically based modified counseling approach. | Nursing home residents (N=30) in a single long-term care facility participated in the study. | Quantitative  Longitudinal | Thirty-minute modified counseling sessions (Therapeutic Conversation) were provided three times per week for 16 weeks to participants in the treatment group. Therapeutic Conversation is a psychotherapeutic approach modified for individuals with Alzheimer’s disease (AD). | 3 |
| **Results** | | | **Conclusion** | | |
| On the post-test, treatment group participants evidenced significantly less negative mood than the control group on the Montgomery-Asberg Depression Rating Scale and the Sadness and Apathy subscales of the Alzheimer's Disease and Related Disorders Mood Scale. The differences approached significance on the Dementia Mood Assessment Scale. With the exception of one subscale of the AD-RD Mood Scale (Hostile), treatment group participants evidenced increased positive mood and decreased negative mood, whereas control group participants maintained the same level or declined. ANCOVA controlling for baseline mood scores were conducted on the outcome measures of mood and depressive symptomatology. Treatment group participants who engaged in Therapeutic Conversation evidenced a significant decline in sadness (F[2,27]=5.01, p=0.03) and apathy (F[2,27]=4.21, p=0.05), as measured on the subscales of the AD-RD Mood Scale, whereas control group participants remained at the same level. Treatment group participants also evidenced a significant decline in depressive symptomatology as measured by the MADRS (F[2,27]=5.52, p=0.02). Treatment group participants’ improvement in mood as measured by the DMAS compared with the decline in control group participants approached significance (F[2,27]=3.59, p=0.06). The differences between the two groups on the Hostile, Contented, and Spirited subscales of the AD-RD Mood Scale were not significant | | | Results suggest that a therapeutic counseling approach can be effective in treating the dysphoria commonly found in individuals with AD. | | |

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| 44. Titler MG, Herr K, Brooks JM, et al. Translating research into practice intervention improves management of acute pain in older hip fracture patients. *Health services research.* 2009;44(1):264-287.[44](#_ENREF_44) | To test an interdisciplinary, multifaceted, translating research into practice (TRIP) intervention to: a) promote adoption, by physicians and nurses, of evidence-based (EB) acute pain management practices in hospitalized older adults, b) decrease barriers to use of EB acute pain management practices, and c) decrease pain intensity of older hospitalized adults. | Patients (N=1,401), nurses (N=172) and physicians (N=61) from 12 acute hospitals in the Midwest. | Quantitative  Longitudinal | The translation research model guided the design of the translating research into practice intervention to address the characteristics of the innovation (EB acute pain management practices), communication, users, and social context. The TRIP intervention included a 60-minute continuing education program for senior administrative leaders to discuss their role in promoting adoption of EB pain management practices and foster support for revision of institution-specific documents (e.g., documentation forms, policies, and procedures). Twice during implementation, chief nurse executives were provided brief articles about the project, written specifically for each hospital, to include in organizational publications. | 1, 3 |
| **Results** | | | **Conclusion** | | |
| The Summative Index for Quality of Acute Pain Care (0–18 scale) was significantly higher for the experimental (10.1) than comparison group (8.4) at the end of the TRIP implementation phase. At the end of the TRIP implementation phase, patients in the experimental group had a lower mean pain intensity rating than those in the comparison group (p=0.0001). | | | Study findings demonstrate that a multifaceted TRIP intervention decreases pain intensity, and positively effects clinicians’ practice behaviors and barriers to use of EB acute pain management practices. These findings are consistent with other studies that demonstrate the effectiveness of multifaceted TRIP interventions. This study adds to the empirical knowledge of TRIP by: 1) applying the diffusion of innovation (DoI) framework to the clinical practice of acute pain management of older adults hospitalized with a hip fracture and 2) testing a multifaceted TRIP intervention composed of specific strategies that addressed four areas of the DoI framework——the nature of the EBP topic, communication, users, and social system. To the authors’ knowledge, the DoI model has neither been applied to acute pain management in hospitals nor to guide selection of implementation strategies. Study findings provide recommendations for health care personnel regarding implementation interventions to improve health care practices. | | |

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| **Randomized Controlled Trials (N=51)** | | | | | |
| **Citation** | **Study Aim** | **Population/ Setting** | **Study Design** | **Methods** | **Outcome Measures**  1=care processes  2=patient experience  3=patient health indices  4=quality of life  5=cost |
| 45. Wakefield BJ, Holman JE, Ray A, et al. Outcomes of a home telehealth intervention for patients with heart failure. *Journal of telemedicine and telecare.* 2009;15(1):46-50.[45](#_ENREF_45) | To evaluate the efficacy of two telehealth applications, delivered by telephone and videophone, for improving outcomes of patients following hospital discharge for an acute exacerbation of heart failure. | The sample was comprised of patients (N=148) from a single VA hospital. | Quantitative  Longitudinal | Patients were screened within 24 hours of admission to identify potential participants admitted for heart failure exacerbation. The intervention, modeled on previous work, was consistent with American heart Association guidelines. Two registered nurses conducted all intervention contacts, which included a maximum of 14 contacts over 90 days. The study nurses reviewed the discharge plan of care with patients during the first intervention contact and reinforced it during subsequent contacts. During all intervention contacts, the study nurses assessed patients using a standardized symptom review checklist. | 1, 2, 3, 5 |
| **Results** | | | **Conclusion** | | |
| There were no significant differences among the three groups or across time for either of the self-efficacy measures. There were no significant differences in the perceptions of care among the groups or over time. Satisfaction with telehealth was measured at the end of the intervention period and again at 180 days in the intervention groups only. There were no significant differences between the telephone and videophone groups at either 90 or 180 days. The responses were: control 38%; telephone 52%; and videophone 83% (p=0.001). At the end of the 90-day intervention, the responses were: control 29%, telephone 48%; and videophone 59% (p=0.04). No significant differences in changes in medications appeared at the 180 day follow-up. Control group patients were significantly more likely to correctly state the purpose and/or side effects of their current medications at enrollment. The responses were: control 97%; telephone 69%; and videophone 69% (p=0.01). However, there were no significant differences between the three groups at 90 or 180 days. Intervention patients from 69% at enrollment to 94-96% at the end of the 90 day intervention period. | | | Patients in the intervention group were more likely to report changes in medications at enrollment and at the end of the 90-day intervention period. Their understanding of their medications improved from 69% at enrollment to 94% and 96% at the end of the intervention. This group had small but non-significant increases in self-efficacy scores (confidence to manage disease and symptoms) from enrollment to the end of the intervention. These scores decreased at the 180-day follow-up. No significant differences appeared across the groups in satisfaction with care. In conclusion, although intervention group patients did not improve in self-efficacy, they were more likely to have medication adjustments over the 90-day intervention period. This group also increased their knowledge about medications. It is impossible that routine monitoring of symptoms by the study nurses led to these adjustments and accounted for intervention patients’’ significantly delayed time to readmission relative to controls. However, this should be validated in a larger sample of patients. | | |

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| 46. Weaver MR, Conover CJ, Proescholdbell RJ, et al. Cost effectiveness analysis of integrated care for people with HIV, chronic mental illness and substance abuse disorders. *Journal of Mental Health Policy and Economics.* 2009;12(1):33-46.[46](#_ENREF_46) | To evaluate the cost-effectiveness of integrated HIV primary care, mental health, and substance abuse services among triply diagnosed patients. | The sample was comprised of patients (N=431) with HIV, diagnosed mental health and substance abuse disorders from 4 treatment facilities (Chicago, IL; St Louis,MO; Seattle, WA; and Detroit, MI). | Quantitative  Longitudinal | After patients were randomized to the intervention group (N=232) or control group (N=199), health service costs were measured at baseline and three, six, nine and 12 months. These costs included hospital stays, emergency room visits, outpatient visits, residential treatment, formal long-term care, case management, and both prescribed and over-the-counter medications. Costs for each service were the product of self-reported data on utilization and unit costs based on national data (2002 dollars). Quality of life was measured at baseline and six and 12 months using the SF-6D, as well as the SF-36 physical composite score (PCS) and mental composite score (MCS). There were differences in interventions across sites. In Chicago, mental illness (MI) and substance abuse (SA) and case management teams collaborated on diagnosis, treatment planning, service delivery and coordination of care. St. Louis, a multi-disciplinary team provided MH, SA and case management services and coordinated care with an offsite medical provider. In Seattle, an adherence counselor coordinated care with on-site medical providers and on or off-site MH and SA services. In Detroit, a nurse provided case management and coordinated care across medical, MH and SA services. | 4, 5 |
| **Results** | | | **Conclusion** | | |
| The total average monthly cost of health services during the three months prior to baseline was $3,235 for the intervention group and $3,556 for the control group. The total average monthly cost during the 12 months of the trial decreased to $3,052 (6%) for the intervention group, and $3,271 (8%) for the control group. Although the change in total average monthly cost was not significant for either group, the percentage of total average monthly cost attributable to hospital services decreased significantly from 37% at baseline to 28% (p<0.001) for the intervention group, and from 32% to 29% (p<0.001) for the control group. For the sample as a whole, the SF-6D decreased from 0.620 at baseline to 0.606, the PCS decreased from 43.57 to 40.76, and the MCS increased from 35.20 to 36.39. The effect of the intervention was not significant however, for any of the three measures of quality of life. | | | The results of this randomized controlled trial did not demonstrate that interventions to integrate services significantly affected the health service costs or quality of life of triply diagnosed patients. Future trials with lower baseline levels of integration, longer duration and larger sample sizes may show improvement or slow the decline in quality of life. In the meantime, health service professionals could pursue coordination or integration of care guided by the evidence that they “do no harm.” | | |

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| 47. Wewers ME, Ferketich AK, Harness J, et al. Effectiveness of a nurse-managed, lay-led tobacco cessation intervention among Ohio Appalachian women. *Cancer Epidemiology Biomarkers and Prevention.* 2009;18(12):3451-3458.[47](#_ENREF_47) | To evaluate a nurse-managed lay-led tobacco cessation intervention delivered to adult women in Ohio Appalachia. | Adult women (N=302) in county health clinics (N=14) participated in this study. | Quantitative  Longitudinal | The 12-week intervention protocol included eight face-to-face visits by the lay health adviser involving behavioral counseling and nicotine replacement therapy. Participants set a quit date for week 3; at that time, participants were instructed to apply a free 21 mg nicotine patch daily for 8 wk. Behavioral counseling was provided by the lay health adviser at each visit, which occurred weekly during weeks 1 to 4 and biweekly at weeks 5 to 12. Each visit lasted 30 to 40 min.  Throughout administration of nicotine replacement, all  unused nicotine patches were collected and recorded at each visit. A new supply of replacement was then distributed, based on the amount of product needed until the next scheduled visit. Implementation of the intervention strategies were documented by the lay health adviser at each visit. A clinic nurse was assigned to manage or supervise the implementation of the protocol. In this capacity, the nurse met weekly with each lay health adviser, either by phone or face-to-face, to discuss the smoker's progress. Topics for discussion included participant progress with quitting, barriers to cessation, and issues associated with medication adherence and behavioral counseling. | 3 |
| **Results** | | | **Conclusion** | | |
| Self-reported and cotinine-validated quit rates were significantly higher among intervention group participants compared with control group participants at 3-and 6-month follow-up (p<0.02). At 12 months, self-reported abstinence was 19.1% (intervention group) and 9.0% (control group), with cotinine-validated rates of 12.2% and 7.1%, respectively (p=0.13). Prolonged abstinence rates were significantly different between groups at 3, 6, and 12 months (p<0.02). Logistic regression analyses indicated adjusted odds of cotinine-validated quitting was associated with cigarette consumption per day (odds ratio, 0.94; 95% confidence interval, 0.89-0.99) and Center for Epidemiologic Studies Depression Scale score ≥ 16 (odds ratio, 0.39; 95% confidence interval, 0.17-0.90). | | | A lay-led approach that is managed by a nurse may serve as an effective cessation strategy among this high-risk population. Additional efforts are needed to sustain long-term abstinence, even after intensive intervention. The current study represents an important first step in developing and evaluating a lay-led approach to the delivery of evidence-based treatment among a high-risk vulnerable group. | | |

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| 48. Whittemore R, Melkus G, Wagner J, et al. Translating the Diabetes Prevention Program to Primary Care A Pilot Study. Nursing research. 2009;58(1):2-12.48 | To test the translation of a diabetes prevention program (DPP) modified specifically for nurse practitioners (NPs) to deliver in the context of primary care. | Patients (N=58) were recruited from four nurse practitioner (NP) primary care practice sites in New England. | Quantitative  Qualitative  Longitudinal | The NP sites were randomized to an enhanced standard care program or a lifestyle program. A mixed-method design was used to modify a lifestyle change program for primary care and to evaluate the processes and outcomes associated with implementing the program in NP practices. The study had two distinct phases: Phase I was an interpretive and participatory method with the purpose of modifying the intervention protocol for easier implementation in the NP practices. Phase II was a prospective clinical trial pilot study with cluster randomization and repeated measures to evaluate the reach, implementation, and preliminary efficacy of the modified lifestyle program. All participants (regardless of group assignment) received written information about diabetes prevention, a 20- to 30-minute individual session with their NP on the importance of a healthy lifestyle for the prevention of T2D (type 2 diabetes), and a 45-minute individual session with a nutritionist hired for the study. The goals of the standard care approach were similar to the DPP and represented the current treatment recommendation for individuals at risk for T2D. | 2, 3, 4 |
| **Results** | | | **Conclusion** | | |
| The NPs were able to adopt the educational, behavioral, and psychosocial strategies of the intervention easily. Motivational interviewing was more difficult for NPs. Mixed-model repeated measures analysis indicated significant trends or improvement in both groups for nutrition and exercise behavior. Participants in the lifestyle program demonstrated trends for greater percent weight loss (p=0.08) and higher HDL levels (p=0.21) over participants in the enhanced standard care program. The homeostasis model assessment (HOMA) levels demonstrated a trend to increase over time in both groups (p=0.11). There were no significant differences or trends with respect to other clinical variables. Participants in both groups demonstrated improvement over time in nutrition behavior (p=0.001) and demonstrated a significant monthly increase in exercise behavior (p=0.001), with lifestyle participants demonstrating trends toward greater improvement in exercise (p=0.08). While there was a decrease in depressive symptoms, this change was not significant. Participants of the lifestyle program were more satisfied with the program compared to standard care participants (t=2.06; p=0.048). | | | Results demonstrate a collaborative process of translating the DPP into the primary care setting, with NPs taking part in shaping and implementing the intervention protocol. While this was a small pilot study from one geographical area, with relatively short program duration, preliminary results indicate that a lifestyle program can be implemented in primary care by NPs, reach the targeted population, and be modestly successful. | | |

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| **Randomized Controlled Trials (N=51)** | | | | | |
| **Citation** | **Study Aim** | **Population/ Setting** | **Study Design** | **Methods** | **Outcome Measures**  1=care processes  2=patient experience  3=patient health indices  4=quality of life  5=cost |
| 49. Wolff JL, Rand-Giovannetti E, Palmer S, et al. Caregiving and chronic care: The guided care program for families and friends. *Journals of Gerontology - Series A Biological Sciences and Medical Sciences.* 2009;64(7):785-791[49](#_ENREF_49) | To describe the development and structure of the Guided Care Program for Families and Friends (GCPFF) as well as preliminary results and lessons learned from an ongoing randomized trial. | The sample was comprised of primary care givers (N=308), nurses (N=7), and primary care physician teams (N=14) in 3 Mid-Atlantic health care delivery systems. | Quantitative  Longitudinal | The GCPFF melds support for family caregivers with the delivery of coordinated and comprehensive chronic care and seeks to improve the health and well-being of both patients and their family caregivers. Baseline interviews were conducted in-person; follow-up interviews (approximately 6 months after each patient's start date) were conducted by telephone by rigorously trained, closely supervised professional interviewers who were masked to group assignment, used computer-assisted interviewing technology, and underwent 10% reliability testing. Primary caregivers were asked about sociodemographic characteristics, employment, health, and the nature of assistance provided to patients. Primary outcomes of interest included depression, as measured by the Center for Epidemiological Studies Depression (CESD), and strain, based on the Caregiver Strain Index (CSI). A mailed survey was administered to intervention group caregivers who had participated in the GCPFF Workshop and to those who had not participated. | 3 |
| **Results** | | | **Conclusion** | | |
| This article details the findings of cluster-randomized controlled trial of GC that is underway in 14 primary care physician teams. Outcomes were examined for intervention (N=115; 89.9% response rate) and control (N=122; 92.4% response rate) caregivers who completed 6-month surveys and whose care recipients remained alive and enrolled in the study. At 6-month follow-up, intervention group caregivers’ mean Center for Epidemiological Studies Depression (CESD) and Caregiver Strain Index (CSI) scores were respectively 0.97 points (p=0.14) and 1.14 points (p=0.06) lower than control group caregivers’. Among caregivers who provided more than 14 hours of weekly assistance at baseline, intervention group caregivers’ mean CESD and CSI scores were respectively 1.23 points (p=0.20) and 1.83 points (p=0.04) lower than control group caregivers’. | | | The GCPFF was designed to benefit caregivers of high risk older adults within the context of a new model of comprehensive primary care that combines several of the previous two decades ’ most successful chronic disease innovations. The developmental work and initial implementation experiences substantiate the feasibility of a nurse, based in primary practice, working simultaneously with patients and their caregivers. Moreover, early data from this cluster randomized controlled trial indicate that some benefit may have been experienced by caregivers who remained enrolled in GC for 6 months. Outcomes will continue to be monitored at 18-months follow-up. | | |

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| **Randomized Controlled Trials (N=51)** | | | | | |
| **Citation** | **Study Aim** | **Population/ Setting** | **Study Design** | **Methods** | **Outcome Measures**  1=care processes  2=patient experience  3=patient health indices  4=quality of life  5=cost |
| 50. Yehle KS, Sands LP, Rhynders PA, et al. The effect of shared medical visits on knowledge and self-care in patients with heart failure: A pilot study. *Heart and Lung: Journal of Acute and Critical Care.* 2009;38(1):25-33.[50](#_ENREF_50) | To compare self-care knowledge and practices among community-living patients with heart failure (HF). | Community living adults with heart failure (N=34) in a single cardiology practice participated in this study. | Quantitative  Longitudinal | Participants were randomly assigned to an advanced practice nurse-led semi-structured group education and support intervention in the office setting versus standard care and completed the Heart Failure Knowledge Test and Self-Care Heart Failure Index at baseline and 8 weeks. Participants in the intervention group privately saw the clinic’s one nurse practitioner for a 10- minute physical examination and met in a group of up to 6 other patients with HF plus a friend or family member for a 1-hour semi-structured education and support group. Half of the intervention group had their physical examination before the group time, and half received it after the group time. The education was provided by the nurse practitioner and the primary investigator. | 3 |
| **Results** | | | **Conclusion** | | |
| From baseline to 8 weeks, Heart Failure Knowledge Test scores improved more for the intervention group than the control group (F time × group=4.90, df=1.21; p=0.038). There was no difference in groups' rates of change on the total Self-Care Heart Failure Index. | | | The findings reveal improved knowledge when education and support are provided in a shared medical appointment setting. The shared medical visit model may be feasible as a way to provide patients with heart failure and their families with ongoing education and a supportive environment. Although more research is needed, the findings of this study suggest there is potential for improvement in knowledge and self-care when education and support are provided in a shared medical group setting. | | |

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| **Randomized Controlled Trials (N=51)** | | | | | |
| **Citation** | **Study Aim** | **Population/ Setting** | **Study Design** | **Methods** | **Outcome Measures**  1=care processes  2=patient experience  3=patient health indices  4=quality of life  5=cost |
| 51. Zielinski DS, Eckenrode J, Olds DL. Nurse home visitation and the prevention of child maltreatment: Impact on the timing of official reports. *Development and Psychopathology.* 2009;21(2):441-453.[51](#_ENREF_51) | To examine the effects of the Nurse Family Partnership (NFP), a program of prenatal and infancy home visiting by nurses, on the timing of verified reports of child maltreatment. | Mothers receiving homecare (N=237) in a small, semirural city in the Appalachian region of New York State. | Quantitative  Longitudinal | The study examined differences between the full intervention (Treatment IV) and the combined comparison group (Treatment Groups I and II). In their home visits, the nurses had three major goals: a) to improve the outcomes of pregnancy by helping women improve their prenatal health, b) to improve the child’s health and development by improving parents’ competence in early care of the child, and c) to improve the mothers’ economic self-sufficiency by helping  them develop a vision for the future, plan future pregnancies, complete their educations, and find work. | 3 |
| **Results** | | | **Conclusion** | | |
| The findings provide evidence that the NFP’s success in reducing the number of maltreatment reports resulted in part from in its impact on the timing of the maltreatment process. When examining the interaction between treatment effects during different time periods, Cox regression models showed a highly significant interaction (β=2.13, SE=0.43, p=0.00), indicating that the treatment effect between ages 4 and 15 is larger than the effect between ages 0 and 4. Only 58% (any maltreatment) and 63% (neglect) of comparison group children reached age 15 without a report, whereas 81 and 87% of the nurse visited children, respectively, did not a have report. Although initial neglect reports continued in the comparison group through age 12, first-time reports among nurse visited children ceased after age 3. | | | The analyses from this study showed that the intervention affected the onset of child maltreatment. Although the program did not prevent all cases of maltreatment, it is clear that it did change the trajectory of risk for these families. Although further research is required to understand more clearly the pathways through which the intervention affected the onset of maltreatment, the current findings lend support to the enduring value of this program in reducing maltreatment and improving the life course of at-risk children. | | |

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| **Quasi-Experimental Studies (N=80)** | | | | | |
| **Citation** | **Study Aim** | **Population/ Setting** | **Study Design** | **Methods** | **Outcome Measures**  1=care processes  2=patient experience  3=patient health indices  4=quality of life  5=cost |
| 52. Barrett A, Piatek C, Korber S, et al. Lessons learned from a lateral violence and team-building intervention. *Nursing administration quarterly.* 2009;33(4):342-351.[52](#_ENREF_52) | To: 1) identify and improve nurse satisfaction and group cohesion among RNs on selected nursing units through planned unit-based interventions, 2) determine the effect of a team-building intervention on cohesive team functioning, and 3) determine the effect of lateral violence training and communication style differences on improving team cohesion. | RNs from a private, not-for-profit, 247 bed teaching hospital (N=104) participated in this study. | Quantitative  Qualitative  Longitudinal  Pre-Post Observational | The sample consisted of registered nurses (RNs) from 4 diverse patient care areas, chosen on the basis of low scores on the National Database of Nursing Quality Indicators (NDNQI) RN-RN interaction subscale. The intervention focused on lateral violence and team building. A qualitative component focused on the impact of the intervention on overall group dynamics and processes. | 1 |
| **Results** | | | **Conclusion** | | |
| Pre and post mean scores on the “How Well Are We Working Together” measure were not statistically significant. RN scores on the Group Cohesion Scale (p=0.037) and the RN-RN interaction scores improved post intervention. Group sessions focused on building trust, identifying and clarifying roles, engaging staff in decision making, role-modeling positive interactions, and holding each other accountable. Overall, RNs had a difficult time determining what their needs were, but they knew that they were in chaos. | | | Key to a cohesive environment is an effective nurse manager able to drive and sustain change. | | |

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| **Quasi-Experimental Studies (N=80)** | | | | | |
| **Citation** | **Study Aim** | **Population/ Setting** | **Study Design** | **Methods** | **Outcome Measures**  1=care processes  2=patient experience  3=patient health indices  4=quality of life  5=cost |
| 53. Beck RA, Arizmendi A, Purnell C, et al. House calls for seniors: Building and sustaining a model of care for homebound seniors. *Journal of the American Geriatrics Society.* 2009;57(6):1103-1109.[53](#_ENREF_53) | To describe a 7-year experience in building and sustaining a physician home visit program. | The sample was comprised of elderly patients (N=468) receiving home care. | Quantitative  Longitudinal  Pre-Post Observational | The goal of the program is to provide medical care at home to frail elderly people who have great difficulty in accessing medical care because of physical or psychiatric disabilities. The geriatricians conduct the initial visit to develop a comprehensive medical care plan. The nurse practitioners perform almost all urgent visits and visit patients approximately every 4 to 6 weeks between physician visits. The social workers see new patients within 2 weeks of the initial visit. A patient service assistant and the social workers, nurse practitioners, and geriatricians attend a weekly patient care meeting. Patients seen in the previous week are discussed, as well as any new problems or concerns that have arisen. In a typical team meeting, lasting 90 minutes, up to 30 patients can be discussed. The team meeting is considered critical to the coordination of care and success of the House Calls program. | 2, 3, 5 |
| **Results** | | | **Conclusion** | | |
| The program has demonstrated improved quality across multiple domains, including preventive health services, recognition of geriatric syndromes, and patient satisfaction.  During the 2007/08 influenza season, of the 179 patients in the program at the time, 94% were offered the influenza vaccine; 23% (41) of those refused, and 72% (128) accepted. These rates compared favorably with the national rate of 46.5% for Medicare beneficiaries and 67% within the local healthcare system, where providers received computer-based reminders to encourage vaccination. The rate of pneumococcal vaccination in July 2008 was 82%, compared nationally with a rate of 8% in Medicare beneficiaries and 15% locally. The rate of having at least one end-of-life discussion pertaining to advance directives and goals of care and documenting in the electronic medical record was 58% in July 2008. This improved from 38% when the measure was started in 2006. The rate of documentation of a healthcare representative in the medical record was 41% in July 2008, compared with a rate of 17% locally. The rate of assessing for falls annually was 97% in July 2008, compared with 60% when the measure was started in 2006. Before being admitted to the House Calls program, many patients have not had regular, coordinated primary health care because of poor access. After assessment by the House Calls for Seniors team, 69% of patients had at least one new geriatric syndrome diagnosed; difficulty with walking was newly diagnosed 29% of the time, cognitive impairment 25% of the time, and depression 13.7% of the time. In 2006, the House Calls for Seniors program generated $120,604 in revenue from professional billing. Other income included $8,224 from Health Professional Shortage Area dollars and $7,722 from philanthropic support. Total revenue for the year was $136,550. Therefore, the program generated income to meet 38% of total costs. Wishard Hospital provides support to the extent that the direct costs exceed the revenues. The cost per patient per year in the program is approximately $1,480. Wishard Hospital provides office space, utilities, and medical supplies, which are not included in these costs. | | | The data reported here represent one of the first systematic descriptions of the clinical and functional  characteristics and healthcare utilization of a cohort of homebound seniors receiving physician house calls.  Preliminary findings are supportive of the programs ability to improve access to healthcare for dependent, homebound seniors, improve quality and preventive aspects of care, and to decrease cost of chronic care and readmission to acute care. | | |

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| **Quasi-Experimental Studies (N=80)** | | | | | |
| **Citation** | **Study Aim** | **Population/ Setting** | **Study Design** | **Methods** | **Outcome Measures**  1=care processes  2=patient experience  3=patient health indices  4=quality of life  5=cost |
| 54. Beckett CD, Kipnis G. Collaborative communication: Integrating SBAR to improve quality/patient safety outcomes. *Journal for r Healthcare Quality.* 2009;31(5):19-28[54](#_ENREF_55) | To evaluate the effectiveness of the Situation, Background, Assessment and Recommendation (SBAR) collaborative communication intervention for best practice. | The sample was comprised of staff (N=212) and physicians (N=30) in a pediatric/perinatal services department in a single hospital. | Quantitative  Qualitative  Cross-Sectional  Grounded Theory  Pre-test/Post-test | The evidence-based SBAR-CCE intervention included teambuilding and collaboration strategies, positive communication techniques, communication styles, empathy, and problem-solving strategies. Intervention classes offered in 16 1-hr sessions at various times throughout a 2-week timeframe provided ample opportunities for day and night shift staff to participate. The intervention included didactic content, role-play, and an original DVD demonstrating traditional and SBAR communication. | 1, 3 |
| **Results** | | | **Conclusion** | | |
| The Teamwork and Safety Climate survey is comprised of 27 items. The first 14 items are specific to teamwork climate, and the final 13 items are focused on safety climate. Differences were seen between the groups after the SBAR-CCE intervention. The Mann–Whitney U showed 18 of the 27 items to have statistically  significant differences after the intervention. At the 95% confidence interval, 12 of the 27 items showed statistical significance. Effects sizes for the individual items ranged from small 0.1 to medium 0.5. There were 6 items with a small effect, 21 items with medium effect, and 0 items with large effect. Six of the 14 teamwork climate items showed statistically significant differences between groups after the intervention. Three of the remaining items showed statistical significance only on the Mann–Whitney U, and five items showed no significant differences between the groups. Of the 13 safety climate items, six items showed statistical significance between groups, three items statistical significance only on the Mann–Whitney U, and four items showed no significant differences between groups post-intervention. Qualitative data included recorded notes from staff observations and interviews. Grounded theory methods were used to analyze the findings. The overarching theme for SBAR-CCE effectiveness was “Positive Communication.” The following comments from participants provided support for the theme: “good framework,” “strong foundation for communication,” and “increases awareness.” The strong reliability of the survey tool, consistency in providing the SBAR communication process, and the delivery of the intervention increased fidelity and reliability of the data produced by the study. Providing role models/mentors encouraged staff at all levels to adopt changes in process and communication. | | | SBAR-CCE improved patient safety outcomes by enhancing physician–nurse communication and relations. The SBAR-CCE intervention proved so successful that it is being disseminated across the entire healthcare organization to facilitate a sustainable improvement in communication, collaboration, and safety. Indications for future research include involving physician champions and other healthcare disciplines to determine effects of the intervention on clinical outcomes such as patient falls, medication errors, and sentinel events. | | |

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| 55. Berg GD, Wadhwa S. Diabetes disease management results in Hispanic medicaid patients. *Journal of Health Care for the Poor and Underserved.* 2009;20(2):432-443.[55](#_ENREF_56) | To investigate outcomes of a telephonic nursing disease management program for Medicaid patients with diabetes residing in Puerto Rico. | The sample was comprised of Medicaid patients (N=980) suffering with diabetes residing in Puerto Rico. | Quantitative  Cross-Sectional  Matched Cohort Descriptive Correlational | A customized, self-management intervention plan that included risk stratification, formal scheduled nurse education sessions, 24-hour access to a nurse counseling, and sources of symptom advice (a telephone line, printed action plans, workbooks) was created for each participant. In addition, enrollees received individualized assessment letters, and reminders (for  medication compliance and vaccination). Risk stratification was determined from direct patient assessment of medical service utilization, self-management practices, medical history, medical management, and psychosocial factors. The tool sorted patients into three categories, which determined the frequency of scheduled calls over the course of the year. The interventions were primarily delivered by telephone, with nurses calling the intervention group members’ home residence. | 3, 5 |
| **Results** | | | **Conclusion** | | |
| Compared with the control group, the intervention group showed a pronounced significant reduction in inpatient bed days (reduced by 48.0%), and in cardiac inpatient bed days (reduced by 74.6%). There were no significant differences between the two groups for beta blocker use. Compared with the control group, the intervention group did however have a significantly higher rate of ACE inhibitor use and diuretic use (higher by 23.0% and 25.4%, respectively). Adherence to treatment recommendations was significantly different between the groups, with hemoglobin A1c testing higher in the intervention group by 28.4%, influenza immunization higher by 191.7%, and pneumococcal immunization higher by 180.0%. The total costs of the intervention were $122,306; the average costs were $249.60 per intervention group member during the entire time period of program enrollment, or $24.82 per month of program enrollment. Total medical and pharmacy costs per person in the intervention group, inclusive of program fees, were $2,046 during the study period of approximately one year, compared with $2,699 in the control group during the same time period. | | | In summary, this community-based, concurrent trial of a commercial diabetes disease management intervention in Hispanic Medicaid members demonstrated significant reductions in medical services, resulting in a 24.2% reduction in the costs of care. The control group was well matched on a wide set of variables, and though the study design is limited by potential selection bias, the approach does address temporal bias and provides a methodology for researchers to evaluate private health care service innovations without a randomized trial design to infer causality from the measurement of treatment effects of a disease management program. | | |

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| **Quasi-Experimental Studies (N=80)** | | | | | |
| **Citation** | **Study Aim** | **Population/ Setting** | **Study Design** | **Methods** | **Outcome Measures**  1=care processes  2=patient experience  3=patient health indices  4=quality of life  5=cost |
| 56. Berry SA, Doll MC, McKinley KE, et al. ProvenCare: Quality improvement model for designing highly reliable care in cardiac surgery. *Quality & Safety in Health Care.* Oct 2009;18(5):360-368.[56](#_ENREF_57) | To test whether an integrated delivery system could, through the application of process redesign methodology and reliability science, implement multiple evidence-based medical practices across the continuum of care for a specific surgical intervention and deliver these practices consistently. | 254 ProvenCare patients at Geisinger | Quantitative  Longitudinal  Descriptive Correlational | The program–ProvenCare—had three components: 1) establishing best practices for elective coronary artery bypass graft (CABG) patients; 2) assembling a multidisciplinary team to “hardwire” these best practices into everyday workflow; and 3) implementing the  program with real-time data collection, feedback and  focused redesign to reach high reliability. Surgeons  reviewed all class I and IIa 2004 ACC/AHA guidelines for CABG surgery and translated them into 19 clinically  applicable recommendations. A frontline multidisciplinary team “hardwired” these, resulting in 40 measurable process elements. Feedback of gaps in care was given and the process redesigned as needed. | 1, 3 |
| **Results** | | | **Conclusion** | | |
| Comparison of clinical outcomes between the two groups shows that most adverse events occurred less often in the post-intervention ProvenCare group although the difference was significant only for the likelihood of being discharged to home. Although median postoperative length of stay was the same at 4 days for both groups, average total length of stay fell 16% from 6.3 days to 5.3 days for the ProvenCare Group resulting in a 5% reduction in hospital charges. | | | ProvenCare methodology appears to be applicable to episodic surgical intervention. Continued data abstraction over time will validate the robustness of the redesign. Although this article reviews this model only for elective CABG, the authors have actively applied it to other surgical interventions (elective total hip  replacement, cataract surgery and percutaneous coronary intervention). | | |

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| 57. Buffum MD, Buccheri R, Trygstad L, et al. Behavioral management of auditory hallucinations. *Journal of Psychosocial Nursing and Mental Health Services.* 2009;47(9):32-40.[57](#_ENREF_58) | To evaluate the implementation and benefits of a 10-session behavioral course for self-management of auditory hallucinations in patients with schizophrenia. | The sample was comprised of patients (N=32) and advanced practice nurses (N=6) at 10 VA sites. | Quantitative  Cross-Sectional  Survey | The 10-session course provides a structured approach for nurses to teach people with schizophrenia behavioral strategies to manage their auditory hallucinations. The treatment manual gives specific guidelines for class structure and climate and provides directions for each 50-minute class with scripts specific to each behavioral strategy. | 1, 3 |
| **Results** | | | **Conclusion** | | |
| One hundred percent of the nurse course leaders agreed that education and support from the authors were effective for this course implementation with their patients. Of note is that the nurse leaders found the conference calls most helpful when sites with obstacles learned how other sites successfully overcame challenges and implemented the course. Nurse course leaders found patient homework least helpful. Communication, rapport, and comfort between patients and nurses improved during the course. Nurses reported that they felt better able to ask more detailed questions about hallucinations and that patients were more open to discussing their voices. They reported that patients liked talking about voices in a safe, structured setting. Genuine discussion was described as promoting depth and bonding in the professional relationship. Nurses also reported increased patient competence and self-esteem. | | | This project confirms the value of teaching APNs an additional intervention in working with patients with persistent auditory hallucinations. Making self-management strategies available to patients with schizophrenia has the potential to decrease their distress, help them learn new coping skills, and improve their communication with the clinicians who care for them. | | |

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| 58. Chen C, McNeese-Smith D, Cowan M, et al. Evaluation of a nurse practitioner-led care management model in reducing inpatient drug utilization and cost. *Nursing Economics*  2009;27(3):160-168.[58](#_ENREF_60) | To determine the prevalence and patterns of drug utilization, with a focus on antibiotics, and to evaluate the effect of a nurse practitioner (NP)-led care  management intervention in reducing drug utilization and cost as compared to usual care among general medicine inpatients. | The sample consisted of patients (N=1,200) in multiple primary care practices. | Quantitative  Longitudinal  Descriptive Correlational Secondary Data Analysis | The NP-led interventions embedded in the multi-disciplinary doctor-nurse practitioner (MDNP) model to optimize drug utilization included the following: a) the NPs attended daily multidisciplinary rounds to facilitate communication and collaboration among care providers, to streamline multidisciplinary interventions, and to  minimize the turnaround time for laboratory testing, and medical and nursing interventions; b) the NPs routinely maintained an updated medication list and reviewed treatment regimens to monitor drug therapy and to minimize unnecessary drug utilization; c) the NPs assessed culture and susceptibility testing results twice daily to make suggestions regarding treatment regimens, or narrowing the antibiotic spectrum; and d) the NPs promoted early intravenous- to- parenteral conversion for antibiotic treatment when indicated. | 1, 5 |
| **Results** | | | **Conclusion** | | |
| The mean drug cost for the hospital stay was $743.98 per patient, ranging between  $0.48 and $35,760.48.The experimental group spent significantly less on drugs ($636 vs. $844, p=0.002), with a mean daily drug cost of $92, ranging from $0.48 to $1,413. Similar to the total drug cost, the data did not have a normal distribution. Even though the experimental group had a lower mean ($88.5) than the control ($95.8), the difference was not significant. The experimental group had significantly lower number of drug days per patient After adjusting for patients’ demographic and clinical factors, patients receiving the MDNP intervention consistently had fewer drug and antibiotic days, spent less on antibiotics alone and on overall drug costs, and were less likely to incur high drug costs. | | | The collaborative practice among the multidisciplinary team facilitated by the NPs has streamlined the care delivery process, reduced drug utilization and cost, and has subsequently shortened LOS. By documenting the economic impact on drug utilization, the results of this study are useful in evaluating the advantages of dedicating NPs in acute care settings to achieve quality care and contain inpatient drug costs. It is also evident that the cost savings produced by the MDNP intervention outweighed its intervention cost. Therefore, the overall results demonstrated that the NP care management model applied in the MDNP study has the potential to provide quality care at a lower cost among general medicine inpatients. As demand and responsibility given to NPs is increased, their role and impact on prescribing practice, cost savings, and clinical outcomes bear further exploration. Future research is also needed in antibiotic management and antibiotic resistance. In the effort to promote rational use of antibiotics or other medications to contain costs and improve the quality of drug therapy, research that validates specific role components or functions of NPs in relation to specific quality outcomes or cost-effectiveness measures are essential. | | |

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| **Citation** | **Study Aim** | **Population/ Setting** | **Study Design** | **Methods** | **Outcome Measures**  1=care processes  2=patient experience  3=patient health indices  4=quality of life  5=cost |
| 59. Chiang CY, Sun FK. The effects of a walking program on older Chinese American immigrants with hypertension: A pretest and posttest quasi-experimental design: Populations at risk across the lifespan: Population studies. *Public Health Nursing.* 2009;26(3):240-248.[59](#_ENREF_61) | To examine the effects of an 8-week walking program with and without cultural modification on hypertension among Chinese Americans. | The sample was comprised of Chinese American patients (N=128) with hypertension from Chinese churches, the Chinese Golden Age Center, and Chinese outpatient clinics in Massachusetts. | Quantitative  Longitudinal  Pre-test/Post-test | Chinese American immigrants with hypertension were assigned to walking groups. In this program, the protocol was similar to that of the control group in a non-culturally modified program, but it was modified to emphasize the Chinese cultural value of authority, family members’ involvement, harmony, and balance. In this program, the researcher encouraged the subjects to give useful opinions of people whom they respect. The opinions may have been from the older adults in the community or from a church authority. They had to be on the importance of harmony and balance for health, and be on the importance of family members’ involvement, where the family members’ involvement was shown by signing an informed consent from one of the family members. The informed consent was used for the Hawthorne effect on promoting the family members’ involvement. Under the procedure, the culturally modified walk (CMW) program was continually provided to the subjects by phone every week. | 3 |
| **Results** | | | **Conclusion** | | |
| The results showed that the walking program had no significant effects upon participant blood pressure or walking endurance. The results also revealed that individuals in the maintenance stage walked longer than those in the preparation stage. A comparison of demographic data showed that subjects with a lower level of education walked more minutes per week, which contributed to lower systolic blood pressures among this group as compared with those with a higher level of education. | | | These results suggest that this walking protocol, when translated into Chinese and when accompanied by a weekly telephone reminder and other interactions with a Chinese-speaking nurse, is appropriate to use without additional cultural modification. Future research should examine other components of Chinese culture or should apply this protocol for a longer period of time. | | |

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| 60. Cook PF, McCabe MM, Emiliozzi S, et al. Telephone nurse counseling improves HIV medication adherence: An effectiveness study. *Journal of the Association of Nurses in AIDS Care.* 2009;20(4):316-325.[60](#_ENREF_62) | To evaluate the effectiveness of ScriptAssist, a psychologically based telephone support program as a method to improve antiviral treatment (ART) adherence among persons living with HIV (PLWH) seen in standard clinical care settings. | The sample was comprised of patients (N=98) at a single HIV clinic. | Quantitative  Longitudinal  Descriptive Correlational | Ten nurses were trained to provide the ScriptAssist telephone intervention, including how to use motivational interviewing strategies to build treatment motivation with participants who were less ready for change and cognitive-behavioral problem-solving strategies with participants who were already motivated to improve their adherence. The ScriptAssist psychological counseling model emphasized assessment of individual beliefs, goals, and reactions to treatment. Although nurses did provide some education in the context of their counseling discussions, communicating a standardized set of educational topics was not a focus of the intervention; instead, participants received information in response to their individual concerns and requests. After each telephone call, nurses had the option to mail participants follow-up printed materials to reinforce themes discussed during telephone conversations. The participant’s HIV care provider received a written progress note from the ScriptAssist nurse after each call, which had the dual purpose of reporting any adherence issues identified and promoting participants’ working relationships with their health care providers. | 3 |
| **Results** | | | **Conclusion** | | |
| In all, 87 participants (88.8%) were at least 95% adherent at baseline and 11 (11.2%) were not. In an as-treated analysis, 88 of the 98 participants (92.9%) were 95% adherent or more at the time of their final telephone contact. The two most commonly reported areas of concern were ADEs (97 instances) and treatment logistics (48 instances), with a few participants also reporting concern about feeling too sick or too depressed to take medication (11 instances) or concern about the cost of treatment (6 instances). The number of concerns reported was not correlated to age, sex, or treatment complexity (number of other medications taken or number of comorbid conditions; all p values were>0.21). Furthermore, the number of concerns reported was also unrelated to the number of ADEs a participant reported, (p=0.17). The percentage of participants still receiving ART (persistence) was 76% at 6 months after the start of treatment, which was significantly higher than the expected rate of 50%.(p=0.001). Similarly, the percentage of participants reporting a minimum of 95% adherence at 6 months was significantly higher than the expected rate (p=0.001). | | | Telehealth nurse counseling is a promising modality for treatment delivery that can be implemented as an adjunct to standard clinical care. Further study using a randomized controlled trial design is needed to verify that psychologically based telehealth interventions have a direct causal role in improving adherence to ART. | | |

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| 61. Crossley L, Mueller L, Horstman P. Software-assisted spine registered nurse care coordination and patient triage-one organization's approach. *Journal of Neuroscience Nursing.* 2009;41(4):217-224.[61](#_ENREF_63) | To explore the five major steps of a software-assisted spine patient triage and RN Care Coordinator patient navigation system in this multidiscipline, multimodality comprehensive spine program. | The sample was comprised of patients (N=38) and surgeons (N=36) in a West Virginia teaching hospital. | Quantitative  Longitudinal Survey | The model consists of five major steps: medical history intake; films or studies retrieval; rapid review of the patient's medical condition and diagnostics by a spine specialist pre-appointment and subsequent triage to the appropriate level of spine care; registered nurse care coordinator patient education and guided navigation through the patient's preferred treatment plan; and last, diagnostic study, pain injection, and provider scheduling. | 2, 5 |
| **Results** | | | **Conclusion** | | |
| Survey results were analyzed by three categories: surgeon as the referring MD, family medicine practitioner as the referring MD, and both surgeon and family medicine practitioner combined. Satisfaction was reported as fair to good for the combined family medicine practitioner and surgeon group for comfort with triage (3.47), communication (3.77), and likeliness to recommend the spine center to his or her patients (3.68). Family medicine practitioners reported higher satisfaction scores than did their surgeon counterparts in two areas: comfort with triage (3.91 as compared with 3.62) and communication (4 as compared with 3.87), whereas likeliness to recommend the spine center to his or her patients was equal at a rating of 3.87. Patient satisfaction was assessed in fall 2007 through the use of a Likert-type scale survey instrument with questions about eight aspects of service ease of access, history completion, scheduling, explanation provided by the RN, patient inclusion in decisions regarding treatment by the RN, follow-up instructions provided by the RN, overall experience, and likeliness to recommend to the spine center. Survey results reflected high satisfaction with all aspects of the services provided, but more specifically, relevant to the RN care coordination role, patient satisfaction scores ranged from a score of 4.33 to 4.44 on a scale of 1 (very dissatisfied) to 5 (very satisfied). Overall patient satisfaction with their experience at the spine center was rated at 4.42, whereas the likeliness to recommend the spine center to others was rated at 4.55. | | | Patient satisfaction scores, referring physician satisfaction scores, and resultant impact on referral volumes, ancillary utilization, workload productivity, and surgical yield demonstrate that this new approach to patient triage has made significant improvements in efficiency, productivity, and service. A software-assisted patient triage process and the use of an electronic medical record to document all patient encounters by telephone, fax, and mail are essential to facilitating seamless patient care. The use of RN care coordinators to assist in appropriate patient triage and patient navigation through a complex multidisciplinary, multimodality treatment plan is imperative to provide the patient the optimum treatment options and seamless efficient access to the appropriate level of spine care to maintain his or her quality of life. | | |

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| 62. Crowley AA, Kulikowich JM. Impact of training on child care health consultant knowledge and practice. *Pediatr Nurs.* 2009;35(2):93-100.[62](#_ENREF_64) | To evaluate a pilot training program for nurse child care health consultants, child care directors, and members of community teams, and to assess the effect of the training on nurses’ and directors’ perceptions of the health consultant role, nurses’ knowledge and practice as health consultants, and child care center policies and practices. | The sample consisted of nurse child care health consultants (N=19), child care directors (N=14), and members (N=9) of community teams at a single community health center. | Quantitative  Longitudinal  Pre-Post Observational | Consultants and staff of Healthy Child Care Connecticut, a DHHS Maternal Child Health Bureau grant-funded project, developed and conducted a pilot training program for nurse child care health consultants, child care center directors, and community teams. The  training included 12 modules specific to health consultation and one module specific to health promotion. State specific information and multidisciplinary consultation was added to the basic training program. The Ecological Model of Child Care Health Consultation served as the theoretical framework, emphasizing a family centered approach to child care health consultation and including two objectives: a) to support a healthy and safe environment for children, families, and staff, and b) to promote child and family health and development. | 1 |
| **Results** | | | **Conclusion** | | |
| The training was well received by all participants; 93.5% of the sample rated the training as “excellent” and 6.5% as “good.” Among the health consultants (N=16) who completed a summary evaluation, all reported the training as “excellent.” In addition, the health consultants found the following aspects of the training especially valuable: written materials (100%), opportunity to network (93.8%), presentations of training modules (81.3%), and program/community planning (62.5%). The majority (greater than 60%) of the health consultants felt they had some previous exposure to the content; however, only 15.4% or fewer of the health consultants reported that this previous exposure to the information was in-depth. P re-test/post-test results indicated a significant increase in health consultation knowledge based on total scores (p<0.0001). At pre-test, mean performance was 38.88 (SD=3.63). At post-test, mean performance increased to 46.66 (SD=4.11). Additionally, pre-test/post-test knowledge scores were studied by module. For the nurse consultants in 8 of the 13 modules, there were significant average gains (p<0.05). Although the pre-test/post-test mean scores for the modules Care for Children who are Abused or Neglected, Promotion of Mental Health, and Nutrition were not significantly different, there was improvement in the mean scores before and after training. For one module, Oral Health, the mean scores pre- and post-training remained low. | | | This pilot training program evaluation contributes to the growing body of evidence that supports the positive effect of child care health consultation on the quality of child care and early care and education settings. Nurses comprise the vast majority of child care health consultants nationally, and this evaluation suggests that health consultation knowledge enhances nurses’ effectiveness in providing health consultation to child care and early care and education programs. | | |

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| 63. Curtis J, Lipke S, Effland S, et al. Effectiveness and safety of medication adjustments by nurse case managers to control hyperglycemia. *Diabetes Educator.* 2009;35(5):851-856.[63](#_ENREF_65) | To determine the safety and effectiveness of implementing standing orders for nurse case managers to adjust antihyperglycemic medications. | The sample consisted of patients (N=2,345) in an Indian Health Service clinic. | Quantitative  Longitudinal  Retrospective Cohort  Descriptive | A locally adapted version of Staged Diabetes Management™ (SDM; International Diabetes Center, Minneapolis, Minnesota) was adopted as the clinical practice guideline for managing diabetes. Participating patients were divided into the following 3 mutually exclusive categories: 1) Seen only by primary care providers (PCP); 2) Seen by diabetes educators for education and case management services only (NCM); 3) Seen by diabetes educators for medication adjustment (MA) in addition to education and case management services. Effectiveness of medication adjustment by nurse case managers was evaluated by comparing the frequency of documentation of hypoglycemia and the rate of change of A1C between these 3 groups. | 3 |
| **Results** | | | **Conclusion** | | |
| Significant differences (p=0.035) in hypoglycemic episodes occurred among the groups; 3 were in the primary care provider (PCP) group, 5 were in the NCM group, and 1 was in the medication adjustment (MA) group. These rates also differed (p=0.035) by Poisson regression. Hypoglycemic episodes were significantly increased (p=0.035) in patients taking insulin or both insulin and a sulfonylurea in contrast to those taking a sulfonylurea alone. Absolute A1C changes by group were -0.14, -0.48, and -1.00 percentage points per month, respectively, for the PCP, NCM, and MA groups. Each pairwise difference was significant at p<0.05. The treatment effects were also highly significant (p<0.0001) when adjusted for covariates. The difference between the PCP and MA groups was significant (p=0.014) after adjustment for multiple comparisons. The differences between the PCP and NCM groups and between the NCM and MA groups were not significant (p=0.051 and p=0.144, respectively). | | | Medication adjustments by nurse case managers according to standing orders significantly improved glycemic control, as measured by A1C, compared to adjustment by primary care provider and education only. Nurse case management without medication adjustment did not significantly improve A1C compared to adjustment by PCP t only. The incremental improvement imparted by medication adjustments by nurse case managers over case management alone was not statistically significant. In this clinical setting, implementation of a medicationadjustment protocol appears to be effective in improving short-term glucose control. This study helps to confirm the body of literature that supports a role for nurse case management in the care of people with diabetes. It further supports the conclusions of a recent meta-analysis that interventions, including nurse or pharmacist case managers making medication adjustments, result in a greater improvement in A1C than interventions that do not include these adjustments. Uniquely, this report describes the relative effectiveness of implementing nurse-directed medication adjustments in a large clinical practice serving a population of American Indian and Alaska Native patients. | | |

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| 64. Decker V, Spoelstra S, Miezo E, et al. A pilot study of an automated voice response system and nursing intervention to monitor adherence to oral chemotherapy agents. *Cancer nursing.* 2009;32(6):E20-E29.[64](#_ENREF_66) | To develop and test a system to monitor adherence with non-hormonal oral chemotherapeutic agents using an automated voice response (AVR) system plus nursing intervention. | The sample was comprised of Oncology patients (N=30) meeting inclusion/ exclusion criteria that were in treatment at two Midwestern cancer centers during a prescribed time frame. | Quantitative  Longitudinal | All enrolled participants received a copy of the Symptom Management Toolkit from the nurse recruiter at the outset of the study. Enrolled participants then received an intake interview, 8 automated voice response (AVR) calls, an exit interview, and nurse intervention calls when the AVR system indicated nonadherence and/or symptom severity of more than or equal to 4 for 3 consecutive weeks. Adherence was measured from multiple perspectives, and effectiveness of the intervention was evaluated by adherent and non-adherent groups. | 2, 3, 5 |
| **Results** | | | **Conclusion** | | |
| Seven of 30 study participants, or 23%, had confirmed non-adherence over the 8-week study period. Overall for 22 participants who finished intake, AVR intervention, and the exit interview, the average sum of symptom severity was not significant (decreasing by 4.35, with p=0.21 A comparison between adherent and non-adherent groups at intake and at exit interviews revealed no significant differences in depression scale scores. 100% of the participants who completed the satisfaction survey were either very satisfied or satisfied with the AVR for monitoring symptoms. Of these, 76% used the SMT with a high rate of referral to the appropriate section of the toolkit to manage a symptom. Of those contacted by a study nurse, 65% reported help from the nurse with symptoms and 100% reported help from the nurse with non-adherence. In summary, 60% felt that the intervention was helpful, whereas 30% felt that it was both burdensome and helpful and 10% felt that it was not helpful. Of these, 88% would recommend the intervention for symptom management, and 53%, for adherence to medications. | | | The results reflect positive ease of use, was easy to learn, and accurately captured the clinical information from patients in their homes. Most participants experienced symptoms above threshold that were severe enough to generate referral to the SMT, and non-adherence that prompted nurse interventions and an alert to their clinician. The secondary aim of this study, to determine if non-adherence can be defined and measured to examine the relationship between symptom severity and adherence was supported by the findings. | | |

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| 65. DeLeskey K. The implementation of evidence-based practice for the prevention/management of post-operative nausea and vomiting. *International Journal of Evidence-Based Healthcare.* 2009;7(2):140-144.[65](#_ENREF_67) | To bring the research evidence for the prevention/management of post-operative nausea and vomiting (PONV) into clinical practice in the surgical services department of a community hospital. | The sample was comprised of patients (N=158), anesthesiologists (N=9), and 1 CRNA in two tertiary care community hospitals in the Northeast United states. | Quantitative  Longitudinal  Pre-Post Observational | In order to assure that practice for the management and treatment of PONV, the six criteria selected for this audit must have been met: 1) PONV risk factors are identified and documented before surgery; 2) PONV risk factors are communicated to the anesthesia/surgical team before surgery; 3) Appropriate PONV treatment is ordered to be given as needed post-operatively; 4) Appropriate PONV prophylaxis is administered as indicated by risk factors; 5) Routine assessment for PONV occurs post-operatively; 6) Appropriate PONV rescue treatment is initiated as needed. Following the initial audit, the team met to discuss strategies to improve evidence-based practice. As the assessment of PONV risk was not part of the initial patient assessment at the pre-admission visit, a strategy for capturing that data and then communicating it to the anesthesia team was addressed. Evaluation of effectiveness was based on process implementation and patient outcome. | 3 |
| **Results** | | | **Conclusion** | | |
| The initial audit showed that: criterion 1 was documented 2.5% of the time and increased to 63% compliance following change management; criterion 2 was not being met at all and increased to 62% compliance; criterion 3 had 69% compliance, increasing to 77%; criterion 4 had 30% compliance, increasing to 49% following change management. The final two criteria were both at 100% following the project. Before change management, they were at 97% (criterion 5) and 100% (criterion 6). | | | The project had begun slowly, but as improvement occurred, most of the staff became involved and sought to improve patients’ experiences in surgical services. The PACES process of changing practice provided a smooth transition for using EBP. In addition, the value and importance of EBP in healthcare became clear to the surgical services team. | | |

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| 66. Duane TM, Brown H, Borchers CT, et al. A central venous line protocol decreases bloodstream infections and length of stay in a trauma intensive care unit population. *Am Surgeon.* 2009;75(12): 1166-1170.[66](#_ENREF_68) | To evaluate the benefit of a central venous line (CVL) protocol on bloodstream infections (BSIs) and outcome in a trauma intensive care unit (ICU) population. | The sample was comprised of trauma patients (N=1,622) admitted to an academic Trauma ICU. | Quantitative  Longitudinal | The authors prospectively compared three groups: Group 1 (January 2003 to June 2004) pre-protocol; Group 2 (July 2004 to June 2005) after the start of the protocol that included minimizing CVL use and strict universal precautions; and Group 3 (July 2005 to December 2006) after the addition of a line supply cart and nursing checklist. The components of the protocol included: minimizing CVL use, removal of the CVL as soon as possible, elimination of routine CVL changes and guidewire exchanges, strict universal precautions including maximal barrier precautions, and an educational program for rotating surgical trauma ICU residents. | 3, 5 |
| **Results** | | | **Conclusion** | | |
| Group 3 had a higher Injury Severity Score (ISS) compared with both Groups 2 and 1  (p=0.0002) but had a significantly lower BSI rate/1000 line days compared to both Groups 1 and 2. There was not a significant difference in BSI rate/1000 line days between Groups 1 and 2. ). Adjusting for ISS group, Group 3 had shorter ICU length of stay (LOS) compared with Group 1 (p=0.01). Logistic regression showed ISS (p=0.04) and a lack of CVL protocol (p=0.01) to be independent predictors of BSI. | | | The study evaluated separately the role of the CVL cart and nursing checklist (Group 3) to try to determine the driving force behind decreases in infection rates. Although decreases in BSI were found between Group 1 (those without a protocol) and Group 2 (those with a protocol but no cart or nursing checklist), a more significant decrease was seen between Group 1 and Group 3. Furthermore, the quarterly rates were significantly lower in group 3 compared to the two other groups yet there was not a significant decrease in rates between Groups 2 and 1. These findings suggest that active involvement of the nursing staff may be an important factor in attaining a zero infection rate. | | |

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| 67. DuBose JJ, Nomoto S, Higa L, et al. Nursing involvement improves compliance with tight blood glucose control in the trauma ICU: A prospective observational study. *Intensive and Critical Care Nursing.* 2009;25(2):101-107.[67](#_ENREF_69) | To evaluate the role of bedside nurses in achieving tight glycemic control and to determine if increasing nursing input in the development and implementation of a glycemic control policy would result in improved glucose control in the intensive care unit (ICU). | The sample consisted of 23 ICU nurses in a single hospital. | Quantitative  Longitudinal  Single-blinded Pre-Post Observational | An initial three-month blinded observational phase was conducted, during which medical record and laboratory review was utilised to document insulin use practices and glycemic control achieved with the pre-existing protocol. Afterwards, nursing in-service education was performed by the ICU staff for all trauma ICU nursing staff. After completion of the educational sessions, surveys were distributed to the nursing staff, asking  them to provide input on the development of seven critical components of a new tight glycaemic protocol for our trauma ICU. From this nursing input, a new protocol was developed which increased nursing staff responsibility for monitoring and achieving glycemic control. | 1, 3 |
| **Results** | | | **Conclusion** | | |
| There was no significant change in the percentage of total patients in the unit that were on glycemic control protocol before and after the intervention. The mean blood glucose decreased from 137.8 mg/dL to 128.2 mg/dL (p = 0.028) after the change in glycemic control policy and protocol. . It was also noted that the time to first hourly glucose measurement within goal range decreased significantly from 36 to 9 h. With a more rapid arrival at the goal glucose range, the number of glucose measurements required decreased from a total of 3811 to 2984; representing a significant decrease in nursing workload. While the total number of episodes of hypoglycemia (<60 mg/dL) increased from 1 to 5 over the three month time frames, no episodes of hypoglycemic seizures or coma were noted during either of the two periods. | | | Tight glycemic control in the ICU setting has become a standard of care. The active involvement of nursing staff in the employment of these strategies is paramount to efficient, safe, and effective glycemic control. In order to facilitate these results, nurses must be provided appropriate education, be allowed to provide early input in the process of protocol development, and have increased responsibility in the effective implementation tight glycemic protocols. | | |

| **2009** | | | | | |
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| **Quasi-Experimental Studies (N=80)** | | | | | |
| **Citation** | **Study Aim** | **Population/ Setting** | **Study Design** | **Methods** | **Outcome Measures**  1=care processes  2=patient experience  3=patient health indices  4=quality of life  5=cost |
| 68. Focht A, Jones AE, Lowe TJ. Early goal-directed therapy: improving mortality and morbidity of sepsis in the emergency department. *Joint Commission Journal on Quality and Patient Safety* 2009;35(4):186-191.[68](#_ENREF_70) | To develop a process improvement strategy for decreasing mortality associated with severe sepsis and septic shock. | The sample consisted of ED patients (N=381) in a Southeastern medical center. | Quantitative  Longitudinal  Pre-Post Observational | Researchers examined the existing literature to use only evidence based practices. An implementation plan including specific inclusion and exclusion criteria was developed. A goal-directed resuscitation algorithm, ED order sheet, and nursing flow sheet for the treatment and documentation of severe sepsis/septic shock were designed and developed. A dedicated code sepsis resource cart to contain central line insertion supplies, hemodynamic monitoring equipment, and resource documents, including algorithm, orders, and flow sheet (these were the only direct costs incurred) was procured. A code sepsis response team using a paging system was formed. Physician and staff training and evaluation materials were designed, developed, and implemented. Progress was evaluated and monitored through continuous data analysis and chart review. | 2, 5 |
| **Results** | | | **Conclusion** | | |
| No significant difference was found in absolute mortality, which decreased from 27% in the pre-intervention (control) group to 18% in the Year 1 post-intervention (treatment) group, 19% in the Year 2 post-intervention (treatment) group, and 22% in the Year 3 post-intervention treatment) group (p=0.2138). Significant differences were found between the pre-intervention and post-intervention groups for endotracheal intubation (p=0.0012), crystalloid infusion (p<0.0001), vasopressor administration (p<0.0001), and packed red blood cells (p<0.0001). An analysis of secondary outcomes showed an increase of two days in ICU use (p<0.0001), one day in ventilator utilization (p=0.0018), and two days in total hospital days (p=0.0499). Additional treatments given to patients that were not part of the original EGDT protocol showed that there was a significant (34%) increase in steroid administration (p<0.0001) and a non-significant (2%) decrease in activated protein C administration (p=0.4006). In addition, the mortality rate for septic patients with acute respiratory distress syndrome (ARDS) decreased by 30% (p=0.0127), and acute renal failure (ARF) decreased by 3% (p=0.1058). Patients not treated with the EGDT protocol (control group) had an insignificant difference in relative risk (RR) of mortality of 1.36 (p=0.1624). | | | Despite insignificant changes in absolute mortality risk, as a result of this process improvement initiative, patients who might have received delayed and/or inadequate treatment for severe sepsis or septic shock are now receiving effective, life-saving treatment. Because of the emphasis on training, consistency in applying the protocol, relatively few changes in current ED practice, and low direct expenditures for equipment, the protocol can be easily integrated into existing ED environments to allow hospitals to quickly implement this successful, best-practice program. | | |

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| **Quasi-Experimental Studies (N=80)** | | | | | |
| **Citation** | **Study Aim** | **Population/ Setting** | **Study Design** | **Methods** | **Outcome Measures**  1=care processes  2=patient experience  3=patient health indices  4=quality of life  5=cost |
| 69. Fritsch T, Kwak J, Grant S, et al. Impact of TimeSlips, a creative expression intervention program, on nursing home residents with dementia and their caregivers. *The Gerontologist.* 2009;49(1):117-127.[69](#_ENREF_14) | To assess the effect of TimeSlips (TS) on persons with dementia (PWDs) and those who care for them. | Daytime certified nursing assistants and activity staff members (N=198) in nursing homes (N=20) participated in this study. | Quantitative  Longitudinal | TimeSlips storytelling groups were formed, involving 10 – 12 residents and met once a week for 1 hour for 10 weeks. To encourage participation in creative expression through group storytelling, facilitators handed out a playful theatrical picture to serve as the basis for the story. The facilitators (nurses’ aides, social workers, and/or activity directors) asked open ended questions about the picture and recorded residents ’ responses on pads of paper, making it clear that there were no incorrect answers. Facilitators then wove the responses into a story, periodically reading it back to the participants as it progressed, to maintain the group’s focus and enthusiasm. The story was later transcribed and, together with the picture, displayed in the residents’ unit. Stories were often included in a facility’s newsletter or collated into books for families. | 1, 3 |
| **Results** | | | **Conclusion** | | |
| There were higher levels of engagement in the TS facilities (χ2=9.04, p<0.01) and higher levels of disengagement (χ2=24.76, p<0.001) in the control facilities. However, residents in the TS facilities also exhibited more frequent challenging behaviors (p<0.05). Additionally, residents in the TS group exhibited more general alertness (p<0.05), fear or anxiety (p<0.01), and sadness (p<0.05), whereas those in the control group exhibited more other or neutral affect (p<0.001). As predicted, TS staff engaged in a greater total number of interactions than did staff in control facilities (p<0.001), and a larger proportion of these interactions were social interactions. The regression analyses results showed that staff who participated in the TS training were less likely to devalue residents with dementia (p=0.013), and they also held more positive views of these persons (p<0.001. No significant differences were observed between the TS facilities and the control facilities for any of the job satisfaction and burnout measures. | | | TimeSlips is a creative storytelling method that fosters meaningful engagement between PWDs and their caregivers by encouraging storytellers with dementia to turn away from memory and reminiscence and turn toward building a story with their imaginations. Clearly, there is evidence that TS offers staff and residents an opportunity to interact in a manner that can alter staff perceptions of PWDs and encourage more social interaction. The positive findings from this study should encourage both practitioners and researchers to continue to explore the merits of creative expression programs as useful strategies for enhancing the quality of life for PWDs and important tools for facilitating culture change in LTC facilities. | | |

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| **Quasi-Experimental Studies (N=80)** | | | | | |
| **Citation** | **Study Aim** | **Population/ Setting** | **Study Design** | **Methods** | **Outcome Measures**  1=care processes  2=patient experience  3=patient health indices  4=quality of life  5=cost |
| 70. Gambino KK, Planavsky L, Gaudette H. Transition toward a nurse practitioner-managed clinic. *Journal of Cardiovascular Nursing.* 2009;24(2):132-139.[70](#_ENREF_71) | To discuss the history and transition of the Cleveland Clinic’s Preventive Cardiology and Rehabilitation Program from a traditional physician-based model to the APN-based model that it is today. | The sample was comprised of patients (N=145) seen exclusively by APNs in a cardiology clinic compared with a retrospective review of patients seen by MDs and APNs in similar clinics during the same time period. | Quantitative  Longitudinal | The delivery of care model was changed MD/APN provider delivery to one in which new patients were seen only by the physician and the medical assistant. Advanced practice nurses focused on seeing only follow-up patients, followed the plan of care as established by the physician at the entry visit, and discussed any changes with the physician as necessary.  Over time, the APNs modified each patient’s plan of care as new treatment guidelines and research findings developed. All telephone calls including prescriptions and patient concerns were addressed by the APNs with consultation with physicians as necessary. To measure effectiveness of the APN model within Preventive Cardiology and Rehabilitation, 4 areas were evaluated: continuity of care, patient satisfaction, clinical outcomes, and billing charges and volume. Outcomes from patients seen in the Preventive Cardiology and Rehabilitation Clinic after the delivery of care model change were compared to outcomes of patients from similar clinics within the same system that continued to use the MD/APN model previously used. Patient satisfaction data were surveyed over a 12-month period from May 1, 2006, through May 1, 2007, when APNs were seeing patients independently as the sole providers. | 2, 3 |
| **Results** | | | **Conclusion** | | |
| The APN patient satisfaction data related to provider care revealed either excellent or very good scores ranging from 83% to 96% (Likert scale) in 5 out of 8 questions after the delivery of care model change. Scores ranged from 84% to 94% for the “yes, definitely” response, which was the most favorable response. Billing charges and patient volume were other measures of effectiveness. There were 2,522 APN visits from May 1, 2006, to May 1, 2007. Most were billed independently with the exception of a few patients who were billed “incident to” to comply with insurance requirements. The independent billing provided $476,031 of charges by 2.2 APN fulltime equivalents (FTEs) and did not reflect actual reimbursement. In addition to patient visits, an additional 1,700 patient contacts were documented to address prescription refills, patient questions, symptoms, and test results. The time spent providing these services represented a significant source of patient satisfaction, continuity of care, and access to the patients’ healthcare providers. Statistically significant (p<0.05) includedaverage total cholesterol level which decreased by 48 mg/dL; LDL, decreasing by 36 mg/dL; and triglycerides, which decreased by 99 mg/dL. High-density lipoprotein increased by 3.5 mg/dL. Blood pressure also had statistically significant improvements17 Ultrasensitive C-reactive protein (usCRP) decreased significantly by 3.68 mg/L. | | | In summary, the transition from the physician model to the APN model resulted in improved continuity, patient access, and patient satisfaction. Patients had the same provider for scheduled visits, telephone calls, and prescription refills, except when the provider was unavailable. There were also statistically significant clinical outcomes including lipids, blood pressure, and usCRP, which are generally associated with reduced cardiovascular risk. The APN delivery of care model shows promise for achieving goals of clinics in the future. | | |

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| **Quasi-Experimental Studies (N=80)** | | | | | |
| **Citation** | **Study Aim** | **Population/ Setting** | **Study Design** | **Methods** | **Outcome Measures**  1=care processes  2=patient experience  3=patient health indices  4=quality of life  5=cost |
| 71. Gammack JK, Pulisetty S. Nursing education and improvement in oral care delivery in long-term care. *Journal of the American Medical Directors Association.* 2009;10(9):658-661.[71](#_ENREF_72) | To determine if a facility-wide oral care educational program will improve the quality of routine oral care provided to nursing home residents. | The sample consisted of resident encounters (N=229) and staff members (N=28, nurses or nurse assistants) in 2 nursing homes. | Quantitative  Longitudinal  Single-blinded Pre-Post Observational | A facility-wide 30-minute multimedia educational program on oral care in the nursing home was provided to all shifts at both study sites over the course of 2 days. All staff members were invited to attend the program and study subjects were encouraged, but not required, to participate in this training. The program was delivered by a licensed clinical and research-trained dental hygienist and included a lecture, demonstration, and hands-on skills training in oral care techniques. Participants received educational materials and oral care supplies at the completion of the program. | 1 |
| **Results** | | | **Conclusion** | | |
| During oral care delivery, most residents were cooperative, but few were fully independent in their oral care. Most residents received oral care to either the teeth or gums. For those with dentures, only half received cleaning of both the oral cavity and the dentures. There were no statistically significant differences between the pre- and post-education observations in these characteristics. There were no significant changes in any oral care measurement after the educational intervention. The average length of oral care delivery was 2.4 minutes per resident encounter before the intervention and 2.0 minutes afterward. Brushing to the teeth, gums, and/or dentures was 58 seconds in duration in the pre-training group and 52 seconds in the post-training group. Roughly half of the residents received this care with both a tooth brush and toothpaste. Fewer than 20% of residents had tongue care performed with a brush and paste and the average duration of brushing was 10 seconds or less. During the study observations, only 1 resident was observed to have flossing of teeth performed. Neither of the 2 facilities routinely stocked dental floss on the nursing care units. The mouth was rinsed with water in half of the oral care encounters and with mouthwash in one third of encounters. Study subjects made note of mouth problems in fewer than 10% of residents during oral care activities and these problems were rarely reported to a supervisor. In one third of oral care encounters, subjects did not wear gloves at any time during mouth care. | | | The oral care educational program did not result in improvement in the delivery of routine oral care to nursing home residents. | | |

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| **Quasi-Experimental Studies (N=80)** | | | | | |
| **Citation** | **Study Aim** | **Population/ Setting** | **Study Design** | **Methods** | **Outcome Measures**  1=care processes  2=patient experience  3=patient health indices  4=quality of life  5=cost |
| 72. Giordano R, Stichler JF. Improving suicide risk assessment in the emergency department. *J Emerg Nurs.* 2009;35(1):22-26.[72](#_ENREF_73) | To describe a performance  improvement project that focused on the development of an educational module to enhance nurses’ knowledge and skills in suicide prevention. | The sample was comprised of nurses in a hospital based in San Diego, California.\*  *\*No other indicators provided.* | Quantitative  Longitudinal  Pre-Post test  Evidence Based Performance Improvement | The performance improvement project included the development and implementation of an educational model for suicide risk assessment for non–mental health professionals in the emergency department’s triage area. The project included the education and training of the non–mental health professionals who work in the ED triage area. The educational module included a pre-test identifying nurses’ current knowledge level about suicide risk factors, assessment methods to identify patients at risk for suicide, and appropriate follow-up interventions or referral sources. After the educational intervention was complete, a post-test measured the change in the nurses’ scores related to suicide risk factors, assessment methods, and intervention options. The intent of the performance improvement project was to enhance awareness among nurses about suicide risk factors, resources for intervention and treatment, and potential adverse patient and organizational outcomes when risk is not identified. | 1, 5 |
| **Results** | | | **Conclusion** | | |
| Statistical analysis was used to measure the effectiveness of the educational module in changing nurses’ knowledge and competencies in identifying suicide risk factor and the  appropriate interventions. Statistical analysis of the data from the pre-test and post-test revealed a significant difference between the level of the nurses’ knowledge before and  after the educational experience (p<0.05), with higher mean scores obtained for the posttest (M=45.29, SD=3.11) when contrasted with the pre-test (M=39.73,  SD=4.16). These findings indicate that the educational module enhanced the nurses’ knowledge about suicide risk factors and appropriate care options to prevent subsequent suicide. Because this effort was a performance improvement project as contrasted with a research project, identifying the costs and benefits associated with the program was critical. It was determined that if the program was successful and cost-effective, it would be replicated in all other patient care areas to enhance nurses’ knowledge of suicidal risk factors and appropriate interventions in all clinical specialties. It is estimated that the cost of a nurse missing the identification of one patient at risk for suicide who subsequently killed himself exposes the hospital to significant legal and monetary risk. | | | This educational module addressed two important issues related to the assessment, interventions, and appropriate disposition of patients who are at risk for suicide. The JCAHO National Patient Safety Goal requires that patients being treated for emotional or behavioral disorders in general hospitals have a documented suicide-risk assessment completed. This project used research methods for the evaluation phase of the performance improvement project and statistical analysis to measure levels of change in knowledge and behavior. Following the implementation of the education module, there was a significant difference in nurses’ knowledge in identifying patients at risk for suicide and the optimal intervention for these patients. The cost/benefit of the program was positive, so there has been an administrative decision to implement the suicide prevention education and assessment tools in other hospital departments. The educational module has demonstrated promise in enhancing patient safety and decreasing risk to the patient and the hospital. | | |

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| **Quasi-Experimental Studies (N=80)** | | | | | |
| **Citation** | **Study Aim** | **Population/ Setting** | **Study Design** | **Methods** | **Outcome Measures**  1=care processes  2=patient experience  3=patient health indices  4=quality of life  5=cost |
| 73. Grando VT, Buckwalter KC, Maas ML, et al. A trial of a comprehensive nursing rehabilitation program for nursing home residents post-hospitalization. *Research in Gerontological Nursing.* 2009;2(1):12-19.[73](#_ENREF_74) | To examine the feasibility of implementing a comprehensive nursing rehabilitation program (CNRP) designed to promote the physical functioning of moderately frail nursing home residents post-hospitalization. | The sample consisted of nursing home residents (N=24) in a single nursing home. | Quantitative  Longitudinal | The first intervention, the Capacity Intervention, was directed at improving the physical capacity of the frail older adults and involved individualized, one-on-one, biweekly exercise sessions. It incorporated upper-body and lower-body resistance and a range of motion workouts that included warm-up, chair, standing, and cool-down exercises. These sessions involved demonstrations of the exercises, individual coaching, and protective supervision. The second intervention, the Performance Intervention, was aimed at promoting mobility and activities of daily living (ADLs). These biweekly, individualized, one-on-one session s included endurance walking, balance exercises, and ADLs practice. The last intervention, the Facilitating Intervention, focused on education and stress reduction. It was designed to enhance frail older adults’ beliefs about their ability to engage in physical activity. The facilitating intervention involved weekly one-on-one sessions that included: instruction about the kinds of exercises and activities needed; a supportive relationship that reinforced desirable beliefs and values related to an active lifestyle; and stress-reduction techniques (progression relaxation and guided imagery) to reduce emotional stress that might negatively influence older adults’ motivation to be active. | 1 |
| **Results** | | | **Conclusion** | | |
| Testing of the small convenience sample suggested that participants’ ADL functioning may have improved. Using the Wilcoxon matched-pairs test, the authors found a significant improvement in ADL functioning between the pretest and posttest scores (p>0.05) after 4 weeks of participating in the study. These preliminary findings need to be verified in a larger study designed to test the efficacy of the CNRP. | | | This pilot study examined the feasibility of implementing a CNRP aimed at promoting the physical functioning of moderately frail older adult nursing home residents after hospitalization. Although the authors found that the CNRP was easy to implement in nursing homes and that frail older adults found the interventions beneficial, the most important findings resulted from what did not work well. The timing of the intervention provide to be a barrier to participation, the CNRP included ADLs practice the participants did not require, and the modified Physical Performance Test did not capture changes in frail older adults’ physical functioning. These findings provide direction for the development of future studies needed to improve the daily functioning of this frail population and ensure nursing home residents maintain their health, independence, and quality of life after hospitalization. | | |

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| **Citation** | **Study Aim** | **Population/ Setting** | **Study Design** | **Methods** | **Outcome Measures**  1=care processes  2=patient experience  3=patient health indices  4=quality of life  5=cost |
| 74. Hatler C, Mast D, Bedker D, et al. Implementing a rapid response team to decrease emergencies outside the ICU: one hospital's experience. *Medsurg Nurs.* 2009;18(2):84-90, 126.[74](#_ENREF_75) | To describe use of a rapid response team (RRT) of critical care nurses and respiratory therapists to enhance recognition and timely response to patients’ deteriorating conditions. | The sample consisted of all patients receiving the services of the Rapid Response Team within a prescribed timeframe at one 620 bed urban AZ hospital. | Quantitative  Longitudinal  Pre-Post Observational  Performance  Improvement | The RRT was conceptualized as a consultative service bringing critical care expertise to the medical-surgical patient’s bedside. Initiation of the RRT was designed to occur with one phone call to the house manager, a seasoned registered nurse charged with assuring staffing adequacy/patient placement and facilitating inter- departmental communication. When the house manager received a RRT call, he or she would activate the paging system for RRT responders. RRT members can provide necessary intervention and, if needed, assist with the patient transfer to a higher level of care. Provision of additional skills, as well as early intervention and management, was believed to lead to fewer emergency calls outside the ICUs. Critical components of the RRT deployment included determining the structure of the RRT, clarifying criteria for summoning the RRT, designing a documentation method for RRT calls, educating physicians and staff members, and evaluating the success of the process. The planning phase lasted about 3 months. | 1, 3 |
| **Results** | | | **Conclusion** | | |
| For evaluation of the effectiveness of RRT deployment, the number of patients receiving defibrillation in the absence of a pulse and/or receiving chest compressions to maintain cardiopulmonary perfusion was examined. The year before full implementation of RRT (May 2005-April 2006), 23 adult cardiac arrests with attempted resuscitation occurred outside the intensive care areas (0.93 non-intensive care unit (ICU) adult code arrests per 1,000 discharges based on 24,739 adult discharges). After implementation (May 2006-April 2007), the number of cardiac arrests with attempted resuscitation occurring outside the intensive care areas was 16 (0.63 codes per 1,000 discharges based on 25,470 adult discharges). This represented a 32% decrease in non-ICU adult codes after implementation of the adult RRT. Although the goal of decreasing non-ICU adult codes by 50% was not met, the 32% decrease reflects a clinically significant improvement. At the beginning of the pilot period, the RRT received an average of eight calls per month. After a year of implementation throughout the hospital, approximately 15 RRT calls per month were initiated. An eight-item survey was used to evaluate staff members’ satisfaction with RRT response. Likert responses indicated overall staff satisfaction in the pilot phase at 97%. | | | Evaluation of the RRT deployment identified some necessary modifications to the original plan. Review of documentation indicated a need for additional staff development programs and a more proactive method for identifying potential problems. Implementation of the RRT shows promise for improving patient safety outcomes. | | |

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| **Quasi-Experimental Studies (N=80)** | | | | | |
| **Citation** | **Study Aim** | **Population/ Setting** | **Study Design** | **Methods** | **Outcome Measures**  1=care processes  2=patient experience  3=patient health indices  4=quality of life  5=cost |
| 75. Hendrix CC, Abernethy A, Sloane R, et al. A pilot study on the influence of an individualized and experiential training on cancer caregiver's self-efficacy in home care and symptom management. *Home Healthcare Nurse.* May 2009;27(5):271-278.[75](#_ENREF_76) | To investigate if an individualized and experiential training can promote family caregiver’s confidence (self-efficacy) in home care and symptom management. | The sample consisted of patients and family caregivers (N=20) of patients in one Southeastern medical center. | Quantitative  Longitudinal  Pre-Post Observational Performance Improvement | The training is a structured intervention based upon key areas relevant to home caregiving of patients with hematological malignancies. The intervention specially incorporated discussion topics about each key area, using a pictorial caregiving manual that the caregiver could take home. The intervention was also patient-centered and tailored to the needs of the individual so that it was most relevant and memorable. | 2, 3 |
| **Results** | | | **Conclusion** | | |
| Total scores in self-efficacy, Cancer Caregiver Self-Efficacy Measure (CCSE), of caregivers were significantly higher immediately post-training (p<0.001) and at 1-week post-hospital discharge of cancer patients (p<0.001). Immediately after receiving the individualized experiential training, all 20 appraised themselves as confident to highly confident as reflected by their total CCSE scores ranging from 115 to 226 (baseline total scores were between 49 and 191, significance of the change not noted. This level of confidence seemed to be sustained, although a bit lower, at 1 week of hospital discharge with total CCSE scores ranging from 103 to 207. | | | The findings of this study suggest that one-to-one experiential training for family caregivers may be effective in increasing caregiver self-efficacy in cancer symptom management and home care. Additionally, offering the training prior to hospital discharge of their loved one may be an optimal time since hospital to home transition is often replete with problems. Having similar training immediately following hospital discharge by home care nurses may also show the same benefit, as transition of care offers excellent teachable moments for both patients and their family caregivers. In the authors’ ongoing study, the hospital to home transition period is being further investigated as a key moment of training and support for patients and their family caregivers. | | |

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| **Quasi-Experimental Studies (N=80)** | | | | | |
| **Citation** | **Study Aim** | **Population/ Setting** | **Study Design** | **Methods** | **Outcome Measures**  1=care processes  2=patient experience  3=patient health indices  4=quality of life  5=cost |
| 76. Herdman TH, Burgess LPA, Ebright PR, et al. Impact of continuous vigilance monitoring on nursing workflow. *Journal of Nursing Administration.* 2009;39(3):123-129.[76](#_ENREF_77) | To evaluate nursing workflow after the implementation of a continuous vigilance monitoring system to determine if the system enhanced patient-centric nursing care. | The sample consisted of observations (N=7,281) from 104 registered nurses, licensed practical nurses, nurse’s aides, and nursing students (N=104) at 3 different VA hospitals. | Quantitative  Longitudinal  Pre-Post Observational | LifeBed Patient Vigilance System is an automated, continuous vigilance monitoring system that measures heart rate (HR) and respiratory rate (RR) and also provides bed exit alert for fall prevention. The device was designed to improve patient safety and hospital bed utilization by providing continuous, noncontact, noninvasive monitoring. Data were collected at the 3 study time periods: baseline (pre-implementation) and 3 and 9 months after implementation. Research staff observed 1 to 2 nurses during an entire 8-hour shift. | 1 |
| **Results** | | | **Conclusion** | | |
| Direct care activities changed significantly between baseline and 3 months post-implementation for all sites, with sites 2 and 3 showing an increase and site 1 showing a decrease in direct care activities. Comparing baseline to 9 months, the increases and decreases persisted as before, but only site 1 continued with a statistically significant decrease. Documentation activities increased significantly except for site 2 at 3 months. Indirect nursing activities significantly increased for all sites at 3 and 9 months, but increases were not statistically significant at site 1, and site 3 had statistically significant decreases for both time periods. Administrative activities were significantly decreased at all sites at both 3 and 9 months. Housekeeping activities decreased significantly overall at both 3 and 9 months, with variability in results between sites. Miscellaneous activities decreased significantly overall at 3 months but was not different at 9 months, with variability in results between sites. | | | Despite some variation between sites, the overall results for all sites combined indicate an increase in patient-centric RN care with continuous vigilance monitoring. On the basis of previous studies, patient outcomes should improve if RNs can increase the amount of time they spend with patients. This can result from increasing the nurse-to-patient ratio or by altering workflow to selectively increase certain nursing activities when needed. This study demonstrated that this continuous vigilance system can provide this selective increase, by requiring nursing assessment and management of alarms generated by the system. The decreases seen with administrative activities will need to be more closely evaluated and addressed. | | |

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| **Citation** | **Study Aim** | **Population/ Setting** | **Study Design** | **Methods** | **Outcome Measures**  1=care processes  2=patient experience  3=patient health indices  4=quality of life  5=cost |
| 77. Hix C, McKeon L, Walters S. Clinical nurse leader impact on clinical microsystems outcomes. *Journal of Nursing Administration.* 2009;39(2):71-76.[77](#_ENREF_78) | To examine the impact of Clinical Nurse Leaders (CNLs) at the Department of Veterans Affairs Tennessee Valley Healthcare System, outcomes from 5 diverse microsystems were evaluated before and after CNL implementation using electronic scheduling system  reports, patient medical records, and quality improvement reports. | The sample was comprised of patients from the ambulatory surgery unit (N=4,927), patients from the surgical inpatient unit (N=174), patients from the GI laboratory (N=14,187), patients from the surgical intensive care unit (N=696), and patients in the transitional care unit (N=795) at a single VA hospital. | Quantitative  Longitudinal  Pre-Post Observational Performance Improvement | Senior nursing leadership from the Tennessee  Valley Healthcare System (TVHS) and senior nursing administrators from the Department of Veterans Affairs (VA) have been involved in the implementation of the CNL role since its inception in 2004. Members of the TVHS nursing executive team led the national pilot evaluation of the impact of the CNL role on 4 domains: financial, patient satisfaction, quality/internal processes, and innovation. | 1, 3, 5 |
| **Results** | | | **Conclusion** | | |
| During the pre-CNL time period; 301 (13.4%) patient surgeries on the ambulatory surgery unit were cancelled within 24 hours of the scheduled appointment time. Eight months after institution of CNL role and implementation of pre-surgical telephone assessment there was a significant (2%) decrease in surgery cancellation rate (p=0.034). Twenty-one months after implementation of CNL role and TKA transfusion protocol, there was a significant (20%) decrease in number of patients receiving blood transfusions (p=0.018).Thirty-one months after initiation of CNL role and implementation of scheduling grids, same-day appointments, and laboratory structural changes, there was a significant (10%) decrease in the rate of missed opportunities via missed appointments and cancelations (p=0.001). Seven months after CNL role implementation and initiation of a VTE prophylaxis monitoring tool, there was a significant (28.6%) increase in VTE prophylaxis implementation for critically ill, intubated patients (p=0.001). Eleven months after implementation of CNL role and RDP redesign, TCU resident participation increased significantly by 8% (p=0.029). | | | Evaluation of the selected quality indicators suggests that CNL interventions significantly improved microsystem outcomes at TVHS. All 5 of the quality measures demonstrated significant improvement after implementation of CNL-led performance improvement projects. This study extends the finding from the initial pilot by the TVHS executive nursing team that found improvement in microsystem performance after implementation of the CNL role. Together, the 2 studies strongly suggest that the CNL role and performance  positively impact clinical, patient satisfaction, and financial outcomes. Data support the CNL role as a major force in organizing the efforts of the clinical microsystem to improve outcomes with sustained performance over time. | | |

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| **Quasi-Experimental Studies (N=80)** | | | | | |
| **Citation** | **Study Aim** | **Population/ Setting** | **Study Design** | **Methods** | **Outcome Measures**  1=care processes  2=patient experience  3=patient health indices  4=quality of life  5=cost |
| 78. Horvath B, Norville R, Lee D, et al. Reducing central venous catheter-related bloodstream infections in children with cancer. *Oncology nursing forum.* 2009;36(2):232-238.[78](#_ENREF_79) | To determine whether a comprehensive  educational program influenced the incidence of  hub colonization of central venous catheters (CVCs) and  bloodstream infection rates in children with cancer, to identify risk factors related to infection rates, and to determine the impact of an educational program on nurses’ knowledge of CVC care for children with cancer. | The sample was comprised of catheter hub cultures (N=51) obtained from children with cancer (N=27), and nurses (N-121) who participated in the educational intervention at a pediatric cancer center in a children’s hospital in the Southwestern U.S. | Quantitative  Longitudinal  Prospective | CVC hub cultures were obtained prior to and three months after an educational intervention. A written pre- and post-education assessment was used to evaluate the nurses’ learning. | 1, 3 |
| **Results** | | | **Conclusion** | | |
| Post-test mean score of 87% was significantly higher than the pretest mean score of 72%. Prior to the education program, 57% of the hubs were culture positive, and after the educational program, the proportion of culture positive hubs was reduced to 36%. | | | . A comprehensive educational program increases nurses’ knowledge of CVC care and reduces CVC hub colonization and catheter-related bloodstream infections in children with cancer. Patient and family participation in practice changes is very important because they have the most to gain. Additional research evaluating the relationship between hub colonization and subsequent bloodstream infection in a larger sample is warranted. | | |

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| **Citation** | **Study Aim** | **Population/ Setting** | **Study Design** | **Methods** | **Outcome Measures**  1=care processes  2=patient experience  3=patient health indices  4=quality of life  5=cost |
| 79. Jallo N, Bray K, Padden MP, et al. A nurse-driven quality improvement program to improve perinatal outcomes. *The Journal of Perinatal & Neonatal Nursing.* 2009;23(3):241-250.[79](#_ENREF_80) | To evaluate the influence of a perinatal nurse case management program on perinatal outcomes for at-risk pregnant women | The sample consisted of pregnant women enrolled in a managed care organization (N=21,691) in multiple hospitals. | Quantitative  Qualitative  Longitudinal  Pre-Post Observational  Evidence Based Performance Improvement | There are 4 main components of the Partners in Pregnancy (PnP) program: 1) identification of the target population, 2) serial risk assessments, 3) matched interventions to identified risks, and 4) measures for test of change. The Plan Do Study Act cycles are used throughout the program development to test the change and revise as necessary. Case management services are directed by the PnP nursing team. | 5 |
| **Results** | | | **Conclusion** | | |
| Preliminary evaluation of the PnP program was conducted using a pre/post-program implementation design. Four quarters of pre-PnP program NICU length of stay (LOS) and cost data, representing the baseline of a 12,167 member count, were compared with 4 quarters immediately following the implementation of the PnP program with a member count of 9,524. Trends were positive. The average LOS decreased by more than 2 days. The NICU payment per admission was also reduced by approximately 22%, from $14,482 preprogram to $11,310 post-program. Evaluation of self-reported process measures for the 168 members, who received home visitation, was also promising. For example, 81% reported using stress management techniques; 27% reported decreasing or stopping smoking during pregnancy; and 88.5% demonstrated increased attendance at scheduled prenatal appoints. Trust developed within the relationships between the nurse case managers and the patients, emotional support was provided, and the perceived value of the program by the patients was high. | | | The PnP case management program was developed and implemented by nurses who recognized the importance of their role in QI. The nursing team integrated a holistic framework, the best evidence, their clinical expertise, and the pregnant member’s unique values and circumstances. Although PTB rates were not available for trending due to system issues, improvement in the trends related to NICU LOS and NICU costs pre/post-program were viewed as positive. The improvement of these proxy measures for the health of the infant are initial steps in the reduction of the PTB rate. | | |

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| **Citation** | **Study Aim** | **Population/ Setting** | **Study Design** | **Methods** | **Outcome Measures**  1=care processes  2=patient experience  3=patient health indices  4=quality of life  5=cost |
| 80. Janson SL, Cooke M, McGrath KW, et al. Improving chronic care of type 2 diabetes using teams of interprofessional learners. *Academic Medicine.* Nov 2009;84(11):1540-1548.[8](#_ENREF_81)0 | To improve the care and outcomes of adult patients with type 2 diabetes by teaching interprofessional teams of  learners the principles and practices of the Improving Chronic Illness Care Model. | The sample was comprised of adults with type 2 diabetes (N=384) in two general internal medicine clinics within the University of California, San Francisco (UCSF) ambulatory care clinics. | Quantitative  Longitudinal  Non-Randomized Parallel Cohort | Patients in the intervention group received care from the  interprofessional diabetes management team, using the Improving Chronic Illness Care model as a guide to improving care for the intervention group. Patients in the control group received usual care from an assigned traditional track internal medicine resident. Processes of care, clinical outcomes, healthcare utilization, and feedback from the interprofessional team members were measures of effectiveness of the model of care intervention. | 1, 3 |
| **Results** | | | **Conclusion** | | |
| Intervention patients more frequently received assessments of HbA1c (p=0.01), LDL-C (p=0.009), BP (p=0.08), MA (p=0.05), smoking status assessment (p=0.02), and foot exams (p=0.0005). There were no significant differences between groups at the final assessments for any clinical status measures. Intervention patients had significantly more planned general medicine visits (p=0.006) than did control patients. The intervention group had fewer emergency room visits ( p=0.17) and hospitalizations (p=0.68) than did control patients. The intervention group had a significant difference in scheduled visits and a decrease of 0.5 acute care (non-ED) visits in non-primary care settings for the intervention group. Patients who did not return for a visit during the study had significantly higher diastolic BP (p=0.01) and tended not to have a prescription for ACE/ARB (p=0.001). Overall, at the end of the intervention period, and in contrast to the comparison group, learners in the interprofessional diabetes management intervention group improved significantly in all measured components of the ICIC Model. These learners felt significantly more prepared to access and use the decision support system, clinical information system, and community resources at the end of one year. They felt significantly more successful in delivering diabetes care and providing self-management support to patients. The comparison group failed to improve on all but one of the items. | | | Study results showed that interprofessional learners, supported by interprofessional faculty, were able to learn and implement population-based quality improvement initiatives based on the ICIC Model. Remarkably, despite relatively short rotations and constantly changing composition, the teams learned to work together to improve the quality of diabetes care in one half-day, weekly clinic and demonstrated significant improvements in the processes of care. | | |

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| 81. Jarrett LA, Emmett M. Utilizing trauma nurse practitioners to decrease length of stay. *J Trauma Nurs.* 2009;16(2):68-72.[81](#_ENREF_82) | To describe a nurse practitioner model utilized to decrease the length of stay and improve the quality of discharge planning for hospitalized trauma patients between 1999 and 2006. | The study was conducted in 3 academic hospitals affiliated with the West Virginia University School of Medicine. | Quantitative  Longitudinal  Pre-Post Observational  Evidence Based  Performance Improvement | In 1998, CAMC initiated a strategic planning process  to address barriers to establishing a full trauma care continuum. Based on the evidence at that time, a delivery of care model was developed that expanded the Trauma Team to include nurse practitioners.  The first nurse practitioner was hired in 1999. The primary focus of this nurse practitioner was to develop the role of an advanced practice nurse in an acute care area that had never utilized nurse practitioners as well as to decrease length of stay. In 2001, additional funding was granted and a second nurse practitioner was hired to further implement the program creating more opportunity for advanced practice. The responsibilities of the nurse practitioner currently include working with consultants to develop their plan of care and determining or establishing a payor source if needed. Trauma patients are followed by the nurse practitioners along the continuum from the medical-surgical intensive care unit (MSICU) to discharge. The nurse practitioner works with all disciplines of the team, including physical, occupational, and speech therapists; the ostomy nurses; nursing staff; social workers; and case coordinators, to determine the appropriate discharge destination of the patient and work toward that goal on a daily basis. Nurse practitioners are expected to contribute to the expanse and dissemination of knowledge through research. On a daily basis, the nurse practitioners act as an educational resource to the nursing staff and also provide formal education as well. | 1, 5 |
| **Results** | | | **Conclusion** | | |
| Trauma length of stay declined significantly from the time prior to the complement of nurse practitioners to the trauma team. The length of stay has declined in all 4 of the Injury Severity Score (ISS) groups. The first ISS group, 1 to 9, declined from 4.4 days in 2001 to 2.3 days in 2006. The second ISS group, 10 to 15, declined from 5.7 days in 2001 to 4.7 days in 2006. The third ISS group, 16 to 24, declined from 8.7 days in 2001 to 7.1 days in 2006. The last ISS group, 25 to 75, declined from 14.7 days in 2001 to 13.5 days in 2006. | | | In conclusion, the benefits of utilizing nurse practitioners in primary care settings are well documented. This study contributes to the documentation of utilizing nurse practitioners in a hospital trauma service. In addition, since no literature was found describing how trauma nurse practitioners are used in other countries, this model may be helpful in initiating the use of advanced practice nurses. | | |

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| 82. Kalina M, Tinkoff G, Gleason W, et al. A multidisciplinary approach to adverse drug events in pediatric trauma patients in an adult trauma center. *Pediatr Emerg Care.* 2009;25(7):444-446.[82](#_ENREF_83) | To derive and implement a multidisciplinary practice and education based model of pediatric trauma patient care to identify and decrease adverse medication events. | The sample was comprised of pediatric trauma patients (N=259) in an adult trauma center | Quantitative  Longitudinal | The control group for the study consisted of pediatric patients admitted to the adult trauma center in 2003, while the intervention group consisted of similar patients admitted after the implementation of a multidisciplinary team in 2004. There were no significant differences between the groups in age, sex, mechanism of injury, injury severity score, or length of hospital stay. Before implementation of the multidisciplinary team, a specialist was only involved in pediatric trauma patient care when requested by the attending trauma surgeon. The multidisciplinary team newly developed consisted of a pediatric hospitalist, pediatric care coordinator, pediatric nurse, pharmacist, and the trauma service to manage pediatric trauma patients from admission until discharge at a level 1 adult trauma center. The multidisciplinary team mandated collective decision making for medication dosing and administration, weight documentation, and implemented a medication error reporting system. Adverse drug events were measured by prescribing error and administration error. | 1 |
| **Results** | | | **Conclusion** | | |
| There were significant reductions in the number of medication prescribing errors (40%, p=0.05), and in the number of medication administration errors (53%, p=0.05), in the study group. The most common medications prescribed incorrectly included morphine sulfate and Tylenol. Weight documentation improved significantly in the study group (p=0.048). | | | The multidisciplinary team members, other than the trauma service, included the pediatric hospitalist, the pediatric care coordinator, the pediatric nurse, and the pharmacist. In many trauma systems, these “specialists” are available but their involvement in patient care is by request from the attending trauma surgeon, as was the case in this system. After implementation of the multidisciplinary team, all members attended the pediatric trauma activation in the emergency department and provided input into patient care throughout hospitalization. Each added their expertise to the decision making process. In study patients, the authors found that the incidence of medication prescribing and medication administering errors could be significantly decreased with a multidisciplinary approach to their care. | | |

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| 83. Kim JH, Menon U. Pre-and postintervention differences in acculturation, knowledge, beliefs, and stages of readiness for mammograms among Korean American women. *Oncology Nursing Forum.* 2009;36(2):E80-E92.[83](#_ENREF_84) | To assess differences in acculturation, knowledge, beliefs, and stages of readiness for mammograms from pre- to post-intervention among Korean American women aged 40 years or older. | The sample was comprised of Korean American women aged 40 years or older with no breast cancer diagnoses and who were non-adherent with mammography screening (N=300) at a community service organization in Chicago. | Quantitative  Longitudinal  Prospective Repeated Measures | The GO EARLY educational program was a 45-minute, stage-based, semi-structured, interactive session on breast cancer and early screening knowledge and beliefs offered to three groups of Korean American women (precontemplators, contemplators, and relapsers). The principal investigator facilitated the education sessions. GO EARLY content was translated into Korean and each presentation was formulated to appeal to Korean American women. Each stage-based educational session was supplemented by Microsoft® PowerPoint® slides to illustrate certain topics with culturally appropriate graphics. All three groups received the same information about breast cancer facts and figures, risk factors, treatments, screening rates for Korean American women, and recommended screening guidelines. Measure included pre and post intervention surveys, including sociodemographic data. | 2,3 |
| **Results** | | | **Conclusion** | | |
| No significant intervention effects were noted on stages of readiness for mammography use. Women in the contemplation stage had significantly lower knowledge scores than women in the relapse stage (p<0.05). Women in the pre-contemplation stage had significantly higher cons scores compared to women in the contemplation and relapse stages (p<0.01); they also had significantly lower self-efficacy and cons scores than women in all other stages (p<0.05 and p<0.01, respectively).Women in the contemplation stage had significantly higher (p<0.01) cons scores than women in the relapse stage. Mean scores for acculturation, knowledge, and self-efficacy increased significantly (p<0.05) from pre- to post-intervention. Women in the pre-contemplation stage had a significantly decreased mean score for perceived risk or susceptibility (0.9 point decrease). Mean scores for perceived cons decreased significantly by 2.7 points (p<0.01). Women in the pre-contemplation stage had significantly decreased mean cons (6.7 point decrease); cons for women in the contemplation stage decreased by 4.7 points; and for women in the relapse stage, cons decreased by 2 points. Mean scores for perceived self-efficacy scores increased significantly by 0.9 points (p<0.01). Women in the contemplation stage had significantly increased self-efficacy (1.9 points), and for women in the relapse stage, self-efficacy increased by 0.7 points. Mean scores for perceived fear decreased significantly by 1.4 points (p<0.01); relapsers had significantly decreased fear by 1.5 points. Mean scores for perceived modesty significantly decreased by 0.7 points (p<0.01); relapsers had significantly decreased modesty by 0.4 points. Mean scores for fatalism decreased significantly by 0.6 points (p<0.01), true for women in all three stages: pre-contemplation (1.8 point decrease), contemplation (1 point decrease), and relapse (0.4 point decrease). | | | This was the first study to assess stages of readiness for mammography use and to test a stage-based targeted breast cancer screening intervention specifically designed to increase mammography use among non-adherent Korean American women. The GO EARLY intervention was feasible and culturally sensitive to Korean American women (Korean language, feedback from target sample, graphics, and appropriate use of Korean vernacular), and can be replicated in various Korean American communities. In addition, except for acculturation, the authors were able to show changes in beliefs from pre- to post-intervention. The authors believe the intervention was successful in changing beliefs. Each woman’s decision to use mammography is influenced by a combination of her perceptions of breast cancer and early screening and her stage of readiness to have a mammogram, as well as system-related issues (e.g., getting timely appointments, access to care). In future research, the authors hope to incorporate aspects of the healthcare environment to assess the combined effect of beliefs and environment. | | |

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| 84. King AB, Wolfe GS. Evaluation of a diabetes specialist-guided primary care diabetes treatment program. *Journal of the American Academy of Nurse Practitioners.* 2009;21(1):24-30.[84](#_ENREF_85) | To investigate the benefits of the Diabetes-focused, Algorithm-directed care, Midlevel practitioner-administered, Electronically coached, Treatment  (DAMET-2) program for disseminating guidance in the treatment of diabetes from a central specialist clinic to primary care centers with access to midlevel provider services. | The sample consisted of type-2 diabetes patients (N=145) at two primary care practices. | Quantitative  Longitudinal | Two separate primary care practices were selected to participate; one as the control practice and one as the intervention group practice. The two groups had no significant difference in baseline characteristics. In the experimental group, the clinic nurse practitioners (NPs) received a 6-hour instruction in the use of the treatment algorithms based on ADA guidelines of care, the accompanying algorithm guidebook for reference, and flow sheets for the chart record in the clinic. Throughout the study, diabetes specialists and NPs held telephone conference calls every 2–4 weeks and had bimonthly visits to monitor and review individual and group progress. The NPs faxed flow sheets to diabetes specialists who responded within 24 hours to critique the proposed treatment plan. In addition, in the primary care sites, several hours of clinic schedule per week were designated specifically for patients with diabetes, for the treatment of their diabetes and related cardiovascular risk factors. Medications were provided by prescription only and were not provided at the clinic. In the control group, no contact was made with the individual patients after the chart review and during the 12-month study. | 3 |
| **Results** | | | **Conclusion** | | |
| Although there was not a statistically significant change in HbA1c from baseline, the group of experimental subjects that had greater than or equal to two clinic visits and the experimental group (all subjects) both achieved a reduction in HbA1c from baseline of nearly 0.5% compared to the adjusted control group that only had a HbA1c reduction of -0.06%. At the end of the study, a mean reduction in all other secondary variables (LDL-C, non-HDL-C, SBP, and DBP) from baseline was observed in all groups. Similar to HbA1c, the experimental groups had greater mean reductions from baseline in the secondary endpoints, non-HDL-C and SBP, than subjects in the adjusted control group. In the control group, there was a greater reduction in the LDL-C from baseline than in the experimental groups. This result was likely because of implementation of a campaign for greater awareness and treatment of elevated LDL-C by the control group physicians, a factor outside of the methods of the study. | | | Although the results of the present study were not entirely consistent with those of the previous pilot study, they have provided important insights on how the program might be more effectively implemented. For the primary endpoint, the experimental groups showed a greater reduction in HbA1c values than the control group, although the change did not achieve statistical significance for this small population. At the end of the study, the experimental group also showed greater mean reductions from baseline than the control group for non-HDL-C and SBP but not LDL-C or DBP. The greater LDL-C reduction in the control group was likely the result of more aggressive use of statin treatment as compared with the experimental group. It was encouraging that subjects in all groups were able to achieve mean improvements from baseline in the parameters measured over the course of the 12-month study (HbA1c, LDL-C, non-HDL-C, SBP, and DBP). | | |

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| 85. Kliger J, Blegen MA, Gootee D, et al. Empowering frontline nurses: A structured intervention enables nurses to improve medication administration accuracy. *Joint Commission Journal on Quality and Patient Safety.* 2009;35(12):604-612.[85](#_ENREF_86) | To evaluate an 18-month-long Integrated Nurse Leadership Program (INLP), which was designed to improve the reliability of medication administration by developing and deploying nurse leadership and process improvement skills on one medical/surgical inpatient unit. | The sample was comprised of medication doses (N=1,841) in 7 units in 6 hospitals in the San Francisco Bay Area. | Quantitative  Longitudinal  Pre-Post Observational Evidence Based Performance Improvement | The INLP, developed by a nurse leader and other professionals at the University of California San Francisco Center for the Health Professions, is a quality improvement (QI) collaborative aimed at developing nurses’ leadership skills and improving the processes and outcomes for a predetermined QI project. The INLP “change framework” is designed to apply to any clinical problem or project. The program is designed to lead clinicians through an entire process of QI, during which INLP participants learn to innovate, test innovations, diffuse innovations throughout the hospital, and embed innovations in hospital policies and daily practice.  The central tenet of INLP is that placing frontline nurses  (and other clinicians) in fundamental roles in an improvement effort is necessary to achieve successful outcomes. To enable clinicians to effectively drive improvement efforts, INLP trains individual clinicians with an 18-month curriculum designed around its change framework of developing individual skills for  each of four core elements of QI: individual, team, culture, and process. Through a combination of off-site workshops and hospital-based team trainings and consultations, INLP provides training, support, and tools aimed at developing each set of skills. INLP participants work on a hospital-based QI project to apply the skills developed in the off-site workshops in real time. | 1 |
| **Results** | | | **Conclusion** | | |
| Five of the six hospitals showed improvement in medication administration accuracy. Overall, accuracy improved from 85% of medication doses being correct at baseline to 92% at 6 months after the intervention and 96% at 18 months after the intervention. The differences between baseline and 6 months and between 6 months and 18 months for the total group were statistically significant (p<0.05) and represent substantial clinical improvements. | | | In the project described in this article, the authors sought to understand how to apply known approaches to improve the reliability of medication administration using the INLP change framework. Medication administration accuracy rates improved after the INLP intervention and were sustained for 18 months. Data also showed that the safety processes used to ensure medication accuracy improved and, in fact, explained the improvement in accuracy rates. Wrong-time medication errors seemed the most intractable to change. | | |

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| 86. Klima C, Norr K, Vonderheid S, et al. Introduction of CenteringPregnancy in a Public Health Clinic. *Journal of Midwifery and Women's Health.* 2009;54(1): 27-34.[8](#_ENREF_87)6 | To examine the acceptability of  CenteringPregnancy to the providers, clinic staff, and  participants in a neighborhood public health clinic | The sample consisted of patients (N=268) in a public health clinic located in the Midwest. | Quantitative  Qualitative  Longitudinal  Pre-Post Cross-Sectional Survey and Qualitative Focus Groups | CenteringPregnancy, a group prenatal care model, consists of ten 2-hour visits beginning at 16 to 18 weeks of gestation and continuing until birth, following the recommended schedule for prenatal care. At each group,  women perform self-care skills, such as weight and blood pressure, have a short assessment with their provider in the group space, and then use the remaining time as a group to discuss their concerns, ask questions, and explore with other women the new roles of pregnancy, parenting, and motherhood. They also learn about necessary health information to keep themselves safe and healthy in pregnancy and beyond. | 2, 3 |
| **Results** | | | **Conclusion** | | |
| Women in groups reported that they felt well prepared for pregnancy and birth as a result of the educational component of CenteringPregnancy. Women described enhanced relationships with their providers and the ability to build relationships with other women. In certified nurse midwives (CNM) focus groups, CNMs noted that: CenteringPregnancy increased opportunities to provide the educational and support components of prenatal care and that women who participated in group care were happier and seemed to want to come for prenatal care and appreciated not having to wait for their visits. There were no significant differences in the percent of infants born prematurely (≥37 weeks’ gestation) or the percent of LBW infants (≥2500 g) between groups. Given the small number of cases, the lack of statistical significance for birth outcomes was not surprising. Women in CenteringPregnancy attended significantly more prenatal visits (9.7 vs. 8.3) and gained significantly more weight during pregnancy (p=0.05). Women in CenteringPregnancy were significantly more likely to have initiated at least some breastfeeding during hospitalization (p=0.05). Forty-four percent were exclusively breastfeeding at hospital discharge (vs. 31.2% in individual care). There were eight premature births in the CenteringPregnancy group (13.1%) and 23 premature births in the individual care group (11%). Women in the CenteringPregnancy group had infants who were born at a later mean gestational age (35.6 vs. 34.8 weeks) and were nearly 200 g heavier on average. Of the eight mothers of premature infants in CenteringPregnancy, six (75%) breastfed their infant, compared to only five (26%) of the 19 mothers receiving individual care for whom data were available. Given the small number of cases, none of these differences reached statistical significance. | | | Increased satisfaction with care and the pregnancy experience coupled with improved outcomes, especially for an at-risk population, points to the potential for CenteringPregnancy to effectively meet the needs of pregnant women whose needs are not adequately met in individual care. Further evaluation of Centering-  Pregnancy is needed using more rigorous designs and larger samples to explore and document the effect of group care on maternal/infant outcomes, satisfaction with care, and potential long-term effects on mothers and their families. | | |

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| 87. Kressin NR, Nunn ME, Singh H, et al. Pediatric clinicians can help reduce rates of early childhood caries: Effects of a practice based intervention. *Medical Care.* 2009;47(11):1121-1128.[87](#_ENREF_88) | To evaluate the influence of a multifaceted practice-based intervention in a pediatric outpatient clinic treating children vulnerable to early childhood caries (ECC) on provider knowledge, counseling, and clinical outcomes. | Children (N=1,045), pediatricians (N=19), and nurse practitioners and registered nurses (N=14) at two pediatric outpatient clinics in the Boston area participated in this study. | Quantitative  Longitudinal | The intervention had 3 components: communication skills training, edits to the electronic medical record's (EMR's) anticipatory guidance section, and provision of an educational brochure. The communication skills training educational program was designed to enhance clinicians' ability to advise and counsel patients' parents or caregivers about decreasing risks for ECC. Measures included provider knowledge, incidence of counseling, and risk reduction for ECC. | 1, 3 |
| **Results** | | | **Conclusion** | | |
| Prior to the training, participants answered 66% of the questions correctly on a 5 item ECC knowledge test; the rate increased to 79% post-intervention. Providers were also significantly more likely to discuss cavities and their effects on other aspects of the child's health. More clinicians from the intervention site discussed limiting sugary foods and drinks, the child's fluoride intake, and cleaning teeth nightly. Intervention providers more frequently discussed using toothpaste with fluoride, helping the child brush his or her teeth up until age 6, and monitoring the child's teeth for spots, or whether the child had a dentist. A greater percentage of intervention providers mentioned that they would discuss caries prevention at the next visit, gave parents written information about cavities, and discussed caries prevention strategies. Intervention providers asked or counseled an average of 2 more issues than comparison site providers (p<0.0001). At the last follow-up visit, unadjusted ECC prevalence at the intervention site was 17.7%, compared with 31.7% at the comparison site (p=0.086). Children at the intervention site were 77% less likely to develop ECC over time compared with children at the comparison site (p=0.004). | | | The multifaceted intervention was associated with increased provider knowledge and counseling, and significantly attenuated incidence of ECC. If validated by additional studies, similar interventions could have the potential to make a significant public health impact on reducing ECC among young children. | | |

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| 88. Lange J, Wallace M, Gerard S, et al. Effect of an acute care geriatric educational program on fall rates and nurse work satisfaction. *The Journal of Continuing Education in Nursing.* 2009;40(8):371-379.[88](#_ENREF_89) | To evaluate the influence of educating nurses in best geriatric nursing practices on clinical outcomes and nurse work satisfaction. | Registered nurses (N=47) at two New England hospitals participated in a web-based educational environment. | Quantitative  Qualitative  Longitudinal  Pre-Post Observational Evidence Based Performance Improvement | The online educational program consisted of 10 modules: 1) The Aging of America; 2) Geriatric Assessment; 3) Health Policy, Reimbursement, and Cultural Shifts in Aging; 4) Health Promotion in the Elderly; 5) Common Problems of Aging I (falls, restraints, and nutrition); 6) Common Problems of Aging II (sexuality); 7) Cognitive and Psychological Disorders Among Older Adults; 8) Pathological Changes of Aging; 9) Pharmacological Considerations in the Elderly; and 10) Spirituality and End-of-Life Care. Measures of effectiveness included number of falls, ANCC certification exam pass rate, and nurses’ sense of professional status and satisfaction. | 1,3 |
| **Results** | | | **Conclusion** | | |
| The average number of total falls on each participant’s unit during a 3-month period before the beginning of the program was compared with the average number of total falls during a 3-month period after completion of the program (p=0.073). Although not statistically significant, a comparison across inpatient units of the average number of total falls during a 3-month period before and after completion of the geriatric course shows a declining trend. A significant decline was found in the incidence of falls across inpatient units in the third month after program completion (p=0.013). Nurses who passed the ANCC certification examination had a significantly higher sense of professional status on the IWS posttest than did nurses who either did not take the examination or failed in the attempt (p<0.05). This difference was not present on the pretest (p=0.26). Post-test fall rates were also significantly different on units with two or more geriatric-certified nurses (p=0.048). After completion of the program, participants were asked to evaluate the quality of the content, the online format, the adequacy of support received during the program, and the organization of the modules. Results indicated that participants were most satisfied with the organization of the modules and that they had gained knowledge that would be useful in their practice. Participants were less satisfied with the online independent learning format, and they preferred more opportunities for structured time as a group. | | | Professional practice is nurtured by increasing knowledge and collaboration. The structure of the geriatric certification project was founded on increasing knowledge through educational support and access to resources. Program content from the 10 modules focused on key issues of geriatric health care and health promotion and helped to prepare RNs for the rigors of a national certification examination. This partnership represents a replicable model that facilitated the advancement of evidence-based practice and enhanced nurses’ knowledge of best practices in caring for older adults. Early evidence shows that these successes may have a positive effect on patient outcomes. As health care institutions strive for Magnet status, academic partnering benefits all parties. Complementary use of resources, such as methodological expertise and collaborative research, will aid in the advancement of professional nursing. | | |

| **2009** | | | | | |
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| **Quasi-Experimental Studies (N=80)** | | | | | |
| **Citation** | **Study Aim** | **Population/ Setting** | **Study Design** | **Methods** | **Outcome Measures**  1=care processes  2=patient experience  3=patient health indices  4=quality of life  5=cost |
| 89. Lavoie Smith EM, Bakitas MA, Homel P, et al. Using quality improvement methodology to improve neuropathic pain screening and assessment in patients with cancer. *Journal of Cancer Education.* 2009;24(2):135-140.[89](#_ENREF_90) | To evaluate the effectiveness of educating nursing assistants, registered nurses, and nurse practitioners about evidence-based neuropathic pain (NP) screening/assessment and treatment/referral algorithms to be implemented at a comprehensive cancer center and 3 affiliated rural outreach clinics. | Nurse practitioners (N=15), registered nurses (N=15) and nursing assistants (N=7) at the Norris Cotton Cancer Center at the Dartmouth-Hitchcock medical center and 3 rural satellite clinics participated in this study. | Quantitative  Longitudinal  Pre-Post Observational Evidence Based Performance Improvement | Three educational modules were produced by the project team. Modules included uniquely targeted content for nursing assistants, registered nurses (RN), and nurse practitioners, consisting of case-based, interactive PowerPoint didactic lectures and reading material. Nurses at all participating sites underwent training conducted by the study investigators. The same investigator/trainer was assigned to teach all learners across research sites based on nurse role. Educational materials were made available on a project-specific Web site. | 1, 3 |
| **Results** | | | **Conclusion** | | |
| Similar to findings from a previous QI study where a small patient sample (N=33) also was screened using the 2 NRSs for general and NP, some patients with little or no reported general pain were found to have moderate to severe NP. In this sample of 386 patients with NP severity scores ranging from 4 to 10, 195 (50%) reported no general pain at all. Overall neuropathic scores were significantly higher than mean general pain scores (p<0.001). The correlation coefficient *r* between the NP NRS and the GP NRS was 0.14, which although statistically significant (p=0.005), is far too low for them to be considered closely related. These results provide strong evidence for NP as a condition distinct from general pain at least in these patients. Knowledge regarding NP screening, assessment, and treatment improved for all nurse groups following education sessions. Mean LNA test scores were above 90% both before and after focused training (p=0.10). Mean RN scores improved significantly from pre-education to post-education (p=0.007). The greatest improvement in knowledge post-education was observed in nurse practitioner test scores. The mean pretest score rose significantly from for the posttest (p=0.001). | | | NP in the cancer population is prevalent but rarely documented in clinical practice separate from general pain intensity. Distinct from general pain, NP characteristics are more difficult to describe. Therefore, improved screening and assessment efforts are needed. In turn, improved screening and assessment will likely lead to improved treatment. Keys to success when implementing practice improvements are: 1) health care professional education and periodic reinforcement of learning, and 2) system infrastructure changes that reinforce “doing the right thing.” | | |

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| 90. Ledwich LJ, Harrington TM, Ayoub WT, et al. Improved influenza and pneumococcal vaccination in rheumatology patients taking immunosuppressants using an electronic health record best practice alert. *Arthritis & Rheumatism: Arthritis Care & Research.* 2009;61(11):1505-1510.[90](#_ENREF_91) | To examine whether an electronic health record (EHR) best practice alert (BPA), a clinical reminder to help  guideline adherence, improved vaccination rates in rheumatology patients receiving immunosuppressants. | The sample was comprised of patients (N=738) obtaining influenza vaccines at Geisinger Health System. | Quantitative  Longitudinal | A vaccination BPA was developed based on immunosuppressant treatment, age, and prior vaccinations. At site 1, a hospital-based academic practice, physicians ordered vaccinations. At site 2, a community-based practice, physicians signed orders placed by nurses. Demographics, vaccination rates, and documentation (vaccination or no administration) were obtained. Chi-square and Fisher’s exact test analysis compared vaccination and documentation rates for October 1 through December 31, 2006 (preBPA), and October 1 through December 31, 2007 (postBPA). Breslow-Day statistics tested the odds ratio of improvement across the years between the sites. | 3 |
| **Results** | | | **Conclusion** | | |
| There were 777 influenza vaccine–eligible patients observed at both sites prior to the influenza BPA implementation, and 758 influenza vaccine–eligible patients observed  after. Influenza vaccination rates increased from 47% to 65% (p<0.001) at both sites, and influenza documentation rates increased from 47% to 67% (p<0.001). There were 516 pneumococcal vaccine eligible patients observed at both sites prior to the pneumococcal BPA implementation and 426 pneumococcal vaccine–eligible patients observed after. Pneumococcal vaccination rates increased from 19% to 41% (P 0.001) at both sites, and pneumococcal documentation rates increased from 19% to 45% (p<0.001). At site 1 (academic institution using a provider-driven process), influenza vaccination rates increased from 43% to 60% (p<0.001). Influenza documentation rates increased from 43% to 62% (p<0.001). Pneumococcal vaccination rates increased from 15% to 39% (p<0.001), and pneumococcal documentation rates increased from 15% to 42% (p<0.001). At site 2, (community practice setting with a nurse driven process and prior familiarity with health maintenance reminders and BPAs), the influenza vaccination rate increased from 69% to 82% (p=0.014). The influenza documentation rate increased from 69% to 86% (p<0.001). Pneumococcal vaccination rates increased from 47% to 57% (p=0.31), and pneumococcal documentation rates increased from 47% to 73% (p=0.008). At baseline, site 2 had significantly higher vaccination rates compared with site 1 prior to BPA implementation. PreBPA influenza vaccination rates for sites 2 and 1 were 69% versus 43% (p<0.001). PreBPA pneumococcal vaccination rates for sites 2 and 1 were 47% versus 15% (p<0.001). After BPA implementation, site 2 also had significantly higher influenza vaccination rates at 82% versus 60% (p<0.001). PostBPA pneumococcal vaccination rates at site 2 were likewise higher at 57% versus 39% (p=0.025). | | | A BPA significantly improved the quality of care delivered in both academic and community rheumatology practice settings by improving vaccination rates for influenza and pneumococcal pneumonia according to national recommendations. A nurse-driven process was associated with higher vaccination and documentation rates, as were prior familiarity with patient education and BPAs. | | |

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| 91. Lemley KB, Marks B. Patient satisfaction of young adults in rural clinics: Policy implications for nurse practitioner practice. *Policy, Politics, & Nursing Practice.* 2009;10(2):143-152[91](#_ENREF_181) | To collect data on patient satisfaction with nurse practitioner (NP) services in rural family practice clinics. | The sample consisted of young adults (N=213) in two rural Midwest family practice clinics | Quantitative  Qualitative  Cross Sectional  Descriptive Correlational | Patients at one clinic were the control group,  and those at the second clinic were the experimental group. The patient satisfaction survey (PSS) data were collected using the Picker Institute Ambulatory Care Patient Satisfaction Survey and completed by both groups (N=213). Patients who agreed to participate in the study were given the survey after their visit with the NP and before they left the clinic. As a result, the overall response rate was 100%. The survey was made up of 23 itemized questions and one open-ended question. The 23 itemized questions contained at least 1 question related to the following dimensions of care: a) access, b) respect for patient preferences, c) information and education, d) emotional support, e) coordination and continuity of care, f) overall impression of visit, and g) health status. | 2 |
| **Results** | | | **Conclusion** | | |
| Overall satisfaction was positively correlated with “wait” time in both waiting  (p<0.01) and exam rooms (p<0.01). Overall satisfaction was also positively correlated with provider listening (p<0.01), having confidence and trust in the provider (p<0.01), receiving as much information as they wanted about their condition and treatment (p<0.01), being involved in the decision making as much as they wanted (p<0.01), and having the reason for visit addressed to their satisfaction (p<0.01). Recommendation of clinic to family and friends is considered a strong indicator of satisfaction and was positively correlated with overall satisfaction (p<0.01). Having the main reason for visit addressed to their satisfaction was positively correlated with provider listening (p<0.001), confidence and trust in provider (p<0.001), and being involved in decisions about health care ( p<0.001). None of the PSS items, including overall satisfaction, was correlated with self-rated health status (p>0.05). Question 24 was an open-ended question: “If you could change one thing about your health care provider’s office, what would it be?” Responses in the access to care (11%) dimension included comments such as “to be able to get an appointment sooner than 2 weeks” and “Phone system isn’t great here at 8:30 a.m. First no one answered. Then when I called back I was put on hold.” Examples of responses in the physical comfort (19%) dimension of care included “more toys for kids in waiting room” and “kept wondering what time it was; clock would be nice.” An example of the coordination of care (18%) dimension included “spending less time in waiting room and spending less time in exam room.” In all, 3% of respondents’ comments were categorized within the patient’s preference dimension (“rooms being a different color”), whereas 2% were related to the emotional support dimension (“I’m highly fearful of doctors”). Only 1% was related to the transition and continuity (“not to have to wait after allergy shot”) and information and education dimensions (“for them to keep or follow up on exercise/diet plans”) of care. 40% of the respondents wrote that they would change “nothing,” and 10% of respondents wrote complimentary statements such as “[I wish] all doctors and nurses were so caring as my NP!” and “very satisfied with visit.” | | | The demand for patient satisfaction data has increased with the Centers for Medicare & Medicaid (CMS) mandate to measure and report quality indicators in order to improve health care. The complex issues surrounding patient satisfaction have been discussed. Although the data were collected 11 years ago, the current demand for research on both patient satisfaction and NPs is compelling. Current changes in primary care, such as increased emphasis on prevention and chronic illness management and shortage of primary care physicians have once again created a demand for NP skills and services. Finally, the reemergence of the patient-centered medical home has led to renewed interest in primary care and a debate over MD-led versus NP-led homes. NPs must attend to the urgency of collecting and reporting data pertinent to their practices to demonstrate their unique contribution to access and delivery of quality health care. | | |

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| **Quasi-Experimental Studies (N=80)** | | | | | |
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| 92. Lyman V. Successful heel pressure ulcer prevention program in a long-term care setting. *Journal of Wound, Ostomy and Continence Nursing.* 2009;36(6):616-621.[92](#_ENREF_92) | To determine whether a quality improvement (QI) process that included a standardized offloading heel in accordance with recommendations from the Institute for Healthcare Improvement would reduce the incidence of heel pressure ulcer (PU) in the facility. | The sample was comprised of patients (N=550) at risk for pressure ulcers in a long-term health care facility. | Quantitative  Longitudinal  Pre-Post Observational Evidence Based Performance Improvement | A preexisting heel PU prevention program was revised to target patients with low Braden Scale scores and specific comorbidities. The revision included the use of a heel protector. Use of the device began in January 2006 after the staff completed the educational program. Patients who were nonambulatory wore the heel protector at all times, except when bathing. The device is a boot with an open, floated-heel design that uses pillowstyle cushioning and adjustable stretch panels. It is  wrapped around the foot and fastened with stretch panels. If patients were ambulatory, they wore the heel protectors only while in bed. The heel protectors were applied within 1 hour of admission or as soon as a risk was identified or the patient’s condition changed. The staff had access to the heel protectors at all times and could apply them as indicated. Measures of effectiveness included heel ulcer incidence, staff acceptance, and cost. | 3, 5 |
| **Results** | | | **Conclusion** | | |
| The number of at-risk patients remained constant during the intervention. The incidence of heel PU, measured prior to initiation of the QI project, ranged from 2.1% to 5% per month. During the first 3 months of implementation of the revised prevention protocol, the incidence of heel PU ranged from 0% to 3.2%. The occurrence of heel ulcers decreased by 95% from the pre-intervention period (39 occurrences) to the post-intervention period (2 occurrences). No new cases developed during months 4, 5, and 6 following QI project implementation. The Loretto nursing staff had a favorable impression of the heel protector. On a scale of 1 to 10, with 10 being the best score, the average score was 9.56 for ease of use and fit. Cost savings are calculated to be between $12,400 and $1,048,400. | | | The authors found that a protocol-based intervention including education, risk assessment, frequent skin assessment, and use of a pressure-relieving heel protector can lead to a notable reduction in the frequency of pressure heel ulceration in patients who are identified as high-risk. The facility staff readily accepted the use of the heel protector because it was easy to use and it fits most patients. The initial costs of the heel protectors were $61,600 (for protectors for both heels) for the entire patient population (550 patients), but the estimated potential savings on medical care for heel PUs were estimated to save the facility more than 1 million dollars in treatment costs. | | |

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| **Quasi-Experimental Studies (N=80)** | | | | | |
| **Citation** | **Study Aim** | **Population/ Setting** | **Study Design** | **Methods** | **Outcome Measures**  1=care processes  2=patient experience  3=patient health indices  4=quality of life  5=cost |
| 93. McTigue T, D'Andrea S, Doyle-Munoz J, et al. Efficacy of a skin tear education program: Improving the knowledge of nurses practicing in acute care settings. *Journal of Wound, Ostomy and Continence Nursing.* 2009;36(5):486-492.[93](#_ENREF_93) | To evaluate the knowledge base of acute care registered nurses (RNs) regarding skin tears and the efficacy of an online educational program designed to improve their knowledge of skin tears including: 1) predisposing factors; 2) identification and assessment of skin tears using the Payne-Martin Classification System; and 3) preventive care, treatment, and documentation. | Acute care registered nurses (N=416) from 2 affiliated hospitals participated in this study. | Quantitative  Longitudinal  Prospective | The education program comprised 30 minutes of educational content: 30% relating to predisposing factors; 40% identification of skin tears using the Payne-Martin Classification System; and 30% preventive care, treatment, and documentation. The 14-item pretest and posttests were identical. Following the pretest, a 30-minute Web-based self-paced Skin Tear Education program was provided. | 1 |
| **Results** | | | **Conclusion** | | |
| Following completion of the identification and assessment of skin tears section, participants were better able to identify and correctly assess skin tears (mean scores 99.1% vs. 97.1%, p<0.001). Participants also achieved greater knowledge of the differentiation between categories I, II, and III skin tears (mean scores 94.9% vs. 83.4%, p<0.001) and knowledge of treatment (mean score 93.7% vs. 73.8%, p<0.001). | | | Study results suggest that an interactive computer-based program provides an effective method for teaching nurses about skin tear identification and classification, as well as their assessment, treatment, and prevention. Based on these findings, the authors recommend: 1) uniform skin tear education for all acute care staff nurses; 2) that the Payne-Martin Skin Tear Classification System be used for skin tear documentation on all medical/surgical units; and 3) that product availability for the standardized treatment of skin tears and that skin tear treatment protocols be available for nurses to refer to and follow. In addition, educational support should be readily available for staff nurses and patient care technicians regarding strategies for skin tear prevention. | | |

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| **Quasi-Experimental Studies (N=80)** | | | | | |
| **Citation** | **Study Aim** | **Population/ Setting** | **Study Design** | **Methods** | **Outcome Measures**  1=care processes  2=patient experience  3=patient health indices  4=quality of life  5=cost |
| 94. Morris J, Neaton M. Continuous improvement process for a high-risk population: Catheter-directed thrombolytic infusions. *Journal of Vascular Nursing.* 2009;27(1):8-12.[94](#_ENREF_94) | To use a continuous improvement process to identify system problems, analyze work processes and develop tools to standardize and guide care. | The sample was comprised of patients (N=61) requiring catheter-directed thrombolysis at a single Midwestern hospital. | Quantitative  Longitudinal  Concurrent Review Evidence Based Performance Improvement | As the lytic agent changed based on availability and clinician preference, a decision was made to look at the entire process of care for the patient receiving thrombolytics, from their arrival at the hospital to placement in a room and initiation of therapy. A multidisciplinary team that included staff from all care settings and disciplines was formed. This team used a continuous improvement process to identify system problems, analyze work processes and develop tools to standardize and guide care. Because catheter-directed peripheral thrombolytic infusion is a low volume, high-risk procedure, data were collected concurrently over 4 years on all patients. Concurrent data collection identified problems as they occurred, allowing problem analysis and resolution to begin immediately. Outcomes measured included: 1) Time to initiation of the thrombolytic and heparin infusions; 2) Length of thrombolytic infusion; 3) Incidence of complications, including external site bleeding, internal bleeding such as hematoma or retroperitoneal bleed, hemoglobin drop greater than 2 g, incidence of blood transfusions and intracranial bleeding; 4) Severity of bleeding. | 1, 3 |
| **Results** | | | **Conclusion** | | |
| In total, 29 markers of bleeding were noted in 24 patients (24 out of 61, or 22%). These included: 1) 13 site bleeds (11 mild, 2 requiring transfusion). 2) 4 hematomas (3 mild, 1 requiring transfusion). 3) 6 drops in hemoglobin > 2 g (2 received a transfusion). 4) 6 transfusions (five noted above). One additional patient received a transfusion with no other marker of bleeding noted. In summary patients experienced 14 mild (23%) bleeding episodes and 3 moderate episodes (4.9%). No bleeding episodes were classified as severe. Although a greater than 2 g drop in hemoglobin occurred in 6 patients (9.8%), none was noted to have experienced a site bleed or hematoma. Additionally, one patient suffered an intracranial hemorrhage. Another goal was to start the infusion within 30 minutes or less of patients’ arrival at the inpatient unit. This goal was accomplished in 37 patients, or 64% of the time (3 patients lacked data). The average time to infusion was 39.4 minutes, with a range of zero minutes (infusion started in angio or at arrival) to 180 minutes. The average total length of the lytic infusion was 27.95 minutes, with a range of 2.5 to 87.25 hours. | | | A multidisciplinary team using a continuous improvement process has been effective in establishing and monitoring standards of care for a small high-risk population. However, when the team changed and key players left, gaps in communication and collaboration recurred, creating delays in beginning the lytic infusion. Continued follow up by the new Level III RN, the pharmacist and radiology staff are essential to continued success with maintaining the safety and efficiency of catheter-directed thrombolytics. Additionally, further standardization in complication reporting would be beneficial. | | |

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| **Citation** | **Study Aim** | **Population/ Setting** | **Study Design** | **Methods** | **Outcome Measures**  1=care processes  2=patient experience  3=patient health indices  4=quality of life  5=cost |
| 95. Needleman J, Parkerton PH, Pearson ML, et al. Overall effect of TCAB on initial participating hospitals. *American Journal of Nursing.* 2009;109(11 SUPPL. TCAB):59-65.[95](#_ENREF_95) | To assess the overall effect of Transforming Care at the Bedside (TCAB), focusing on the experiences of 10 hospitals. | The sample was comprised of nursing administrators, unit managers, front-line nursing staff, and quality improvement personnel (N=150) in 10 hospitals. | Quantitative  Longitudinal  Pre-Post Observational Evidence Based Performance Improvement | The program is designed to improve inpatient care and the hospital work environment by empowering front-line nursing staff. A basic tenet of TCAB is that front-line staff and unit nurse managers can recognize the need for change, identify innovations that will improve work processes, test these changes, and decide whether to adopt them permanently. The TCAB initiative also seeks  to increase the vitality, teamwork, and retention  of nurses. The key strategy for accomplishing TCAB goals is to empower front-line staff and nurse managers by providing leader support, training, and feedback. Domains evaluated include: Safe and reliable care, Patient-centered care, Value-added processes, and  Vitality and teamwork. | 1 |
| **Results** | | | **Conclusion** | | |
| At the end of the first year of phase 2, 7of the 13 pilot unit managers reported that less than 40% of their front-line nursing staff was actively involved in TCAB activities.  Three years later, at the end of phase 3, only one manager reported staff engagement at this low level. Not only did staff engagement increase, but staff resistance also decreased. Whereas one-third of unit managers reported that at least half of the nursing staff was unsupportive at the end of the first year of phase 2, only one manager did three years later. In the questionnaires administered at the end of phase 3, pilot and spread unit managers estimated that they spent an average of 4.6 hours per week on TCAB-related activities. All agreed that they would participate in the TCAB initiative again. The 13 pilot units tested 533 innovations. The average was 41 tests per unit, but the actual volume of testing varied substantially across units. In all, 377 innovations (71%) were adopted and sustained by the pilot units and 210 (39%) spread to other units. The greatest numbers were in the patient-centered care domain and the fewest in vitality and teamwork. Although the sample size was small, the declines in falls and readmissions were statistically significant (for falls, p<0.05 for 2006 and 2007 compared with 2005; for readmissions, p<0.001 for 2007 compared with 2006). Most of the units instituted changes that directly sought to reduce falls and readmissions, such as special signage or safety rounds to reduce falls and revised discharge procedures to reduce readmissions. The percentage of patients likely to recommend the hospital increased approximately 5%, which was considered the best single indicator of patients’ assessments of the care they received. Pilot unit managers reported on questionnaires that teamwork and vitality improved either greatly (6/13 units) or somewhat (7/13). Eight managers said that TCAB played a significant role in or was fully responsible for this change. The average voluntary staff turnover on TCAB pilot units was lower than the nationwide median of 8.4% 6 on medical–surgical units. | | | This review of the experiences of the 10 hospitals participating in phases 2 and 3 of the TCAB pilot found that the units engaged in 533 tests of change and adopted and spread a substantial number of them. Several patient safety indicators appeared to improve under the initiative. Unit managers felt that all four domains improved and that TCAB was an important factor in that improvement. Unit managers and CNOs reported that participation in TCAB made it more likely that unit staff would continue to initiate changes to improve patient care and that collaboration between nursing and other departments had improved. The value attributed to TCAB was reflected in the substantial amount of time that unit managers committed each week to these efforts, the increased staff engagement in TCAB, the reduced resistance of unit staff, the unanimous agreement of unit managers that they would participate in the TCAB initiative again, and the expressed commitment of most leaders to continue TCAB activities after the initiative ended. | | |

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| **Citation** | **Study Aim** | **Population/ Setting** | **Study Design** | **Methods** | **Outcome Measures**  1=care processes  2=patient experience  3=patient health indices  4=quality of life  5=cost |
| 96. Nuovo J. The impact of planned visits on patients with type 2 diabetes mellitus. *Clinical Medicine: Endocrinology and Diabetes.* 2009;2009(2):7-14.[96](#_ENREF_96) | To investigate whether planned visits improve glycemic, blood pressure and lipid control among patients with type 2 diabetes mellitus (DM). | The sample was comprised of patients (N=395) with type 2 diabetes at a primary care clinic in Rancho Cordova, California. | Quantitative  Longitudinal  Pre-Post Observational Performance Improvement | The patients were invited by a letter from their primary care provider to come to a planned visit to discuss their DM care. The clinic staff instructed the patients who called for an appointment to obtain a baseline glycosylated hemoglobin (A1C) and lipid profile prior to the planned visit. On the day of the planned visit, the staff provided the physician with a copy of these test results which were to be handed to each patient. The results included information on the American Diabetes Association (ADA) recommendations for A1C, blood pressure, and lipid control. Patients then met with their physician for a 15-minute focused appointment for  diabetes. The physicians were not prompted to follow any specific guideline for medication therapy or asked to consider a more intensive regimen. After the encounter was concluded, the patients met with a diabetic nurse educator. This encounter lasted approximately 45 minutes. The nurse educator reinforced the ADA recommendations, discussed healthy eating, stress reduction, and led a discussion on how to develop an action plan for a health behavior change. There was no subsequent contact with the diabetic nurse educator after the planned visit. Physicians followed-up with their  patients in their usual course of practice. The practice  standard was to recommend a follow-up appointment in 3 to 6 months. Baseline data on A1C, blood pressure, and lipid profile were collected at the time of the planned visit. This information was extracted from follow-up visits with the primary care provider from the electronic medical record over a 6 month time span. | 3 |
| **Results** | | | **Conclusion** | | |
| There was no significant change in medication regimen after the planned visit. There were no significant changes in A1C, blood pressure, lipid control, or medication regimen during the initial observation period, yet there were significant improvements in A1C, lipid control, and diastolic blood pressure post-intervention. There was no significant change in systolic blood pressure. Of the approximately 850 surveys mailed out, 206 (24%) completed surveys were returned. There were 85 respondents who had been to a planned visit and 121 respondents who had not been to a planned visit. Patients who attended planned visits self-reported an increased frequency of self-care behaviors, an increased understanding of self-care activities, and an increased acknowledgment of care coordination and teamwork. | | | The implication from this study is that the level of effort to achieve improved outcomes in patients with DM may not require the use of a large multidisciplinary team. Focused planned visits using the addition of a diabetic educator may achieve similar outcomes. A randomized trial comparing elements of these programs will be important to perform to better understand the level of intervention needed to obtain maximum benefit, balancing costs, and staffing requirements. | | |

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| **Quasi-Experimental Studies (N=80)** | | | | | |
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| 97. Nyamathi A, Liu Y, Marfisee M, et al. Effects of a nurse-managed program on hepatitis A and B vaccine completion among homeless adults. *Nursing research.* 2009;58(1):13-22.[97](#_ENREF_97) | To evaluate the effectiveness of a nurse-case-managed intervention compared with that of two standard programs on completion of the combined hepatitis A virus (HAV) and HBV vaccine series among homeless adults and to assess sociodemographic factors and risk behaviors related to the vaccine completion. | Homeless people (N=865) in the Los Angeles area participated in this study. | Quantitative  Longitudinal  Randomized  Three Group  Prospective | Homeless participants in each group were offered the three-series Twinrix HAV (inactivated) and HBV (recombinant) vaccine by a study nurse blinded to the group assignment. The Twinrix was used because it would vaccinate homeless persons for HAV while vaccinating against HBV and still maintain the same 6-month timeframe as for the HBV vaccination series (0, 1, and 6 months). As homeless persons are generally also at risk of HCV and HIV, for which no vaccinations yet exist, in addition to education and counseling for HBV and HAV, education and counseling for HCV and HIV were also provided to all participants. Subsequently, participants had a 10-minute period to discuss questions with the nurse before they presented for each dose of the Twinrix vaccine series. Two nurse and outreach teams worked exclusively with participants in either the intervention or control programs. The  programs included: a) nurse-case-managed sessions plus  targeted hepatitis education, incentives, and tracking (NCMIT); b) standard targeted hepatitis education plus incentives and tracking (SIT); and (c) standard targeted hepatitis education and incentives only (SI). A team of outreach workers not involved in the programs provided tracking and follow-up on all participants for their 6-month questionnaire. | 3 |
| **Results** | | | **Conclusion** | | |
| There were no group differences at baseline with respect to chronic homelessness, intention to adhere, injection drug use, methamphetamine use, or education; however, gender and ethnic differences were found. Men were overrepresented in the NCMIT program, and Latinos were overrepresented in the SIT program. The NCMIT participants were most likely to report daily alcohol and drug use and to have used noninjection drugs in the last 6 months. Veteran status, social support, and emotional well-being also differed somewhat between the programs, as did type of recruitment site. Adjusting for potentially confounding characteristics, NCMIT participants had almost 2 times greater odds of completing vaccination than those of participants in the SI group; SIT participants had 1.5 greater odds of completion than those of the SI group, but the difference was not significant. Older individuals, and those who reported fair or poor health, were also more likely to complete vaccination. Newly homeless White adults were significantly less likely than were African Americans to complete vaccination; male gender and participation in nonresidential substance abuse programs also were associated negatively with vaccine completion. Latinos and chronically homeless Whites were as likely as African Americans to adhere to the vaccine regimen. | | | The findings reveal that a culturally sensitive comprehensive program, which included nurse case management plus targeted hepatitis education, incentives, and client tracking, performed significantly better than did a usual care program with an added incentive. As the CHSCP demonstrates, factors which represented select sociodemographic factors (age, gender, and time homeless), resources (physical health), and behaviors (attendance at substance self-help programs) predicted vaccine completion. A program that included client tracking and incentives also promoted vaccine completion; nevertheless, the nurse-case managed program had the highest odds of HBV vaccine completion compared with those of a standard control program in this study with homeless adults. This study provides additional good news for public health program planners and funders; when funding is limited, it is possible for more than half of homeless clients to complete the 6-month HBV vaccine series if hepatitis education, hepatitis vaccinations, and minimal client incentives are provided. | | |

| **2009** | | | | | |
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| **Quasi-Experimental Studies (N=80)** | | | | | |
| **Citation** | **Study Aim** | **Population/ Setting** | **Study Design** | **Methods** | **Outcome Measures**  1=care processes  2=patient experience  3=patient health indices  4=quality of life  5=cost |
| 98. O'Mahony S, McHenry J, Blank AE, et al. Preliminary report of the integration of a palliative care team into an intensive care unit. *Palliat Med.* Mar 2010;24(2):154-165.[98](#_ENREF_98) | To describe the influence of a Palliative Care Service on outcomes of a convenience sample of patients at Montefiore Medical Center (MMC) from August 2005 until August 2007. | The sample was comprised of palliative consultations (N=157) in an ICU at a hospital in Bronx, New York. | Quantitative Qualitative  Longitudinal  Case Control, Focus Group | The goals of this project were to: 1) provide a culturally competent model of care for critically ill patients at the end of life; 2) integrate the Palliative Care Service (PCS) into daily operations of the ICU; and 3) increase access to hospice services for patients at the end of life in the ICU. The advanced practice nurse (APN) was an experienced critical care nurse and manager prior to the initiation of the project. The APN visited the ICU daily and received referrals through an electronic Critical Care Medicine (CCM) sign-out for patients newly admitted to the MMC. Consultative clinical service was provided to patients and families by an interdisciplinary team which included a palliative medicine physician, the APN and a palliative care social worker. The team conducted case-based teaching for ICU nurses, medical house staff and critical care fellows. | 1, 2, 3, 5 |
| **Results** | | | **Conclusion** | | |
| Cultural issues related to end of life were discussed in 85% of family meetings.  Exploration of the patients’ and families’ needs identified significant spiritual needs in 62.4% of cases. Education on the death process was provided to 85% of families.  Pre-bereavement counseling was provided to 55% of families during these meetings. Twenty-nine percent of patients were disconnected from mechanical ventilators following consultation, 15.9% of patients discontinued (or limited) the use of inotropic support, 15.3% stopped artificial nutrition, 6.4% stopped dialysis and 2.5% discontinued artificial hydration. Recommendations on pain management were made for 51% of the project’s patients and symptom management for 52% of patients. The project was associated with an increase in the rate of formalization of advance directives pre- and post-APN consultation. Thirty-three percent of the patients who received PCS consultations had ‘do not resuscitate’ orders prior to consultation and 83.4% after the intervention, an increase of over 250%. The project team referred 80 (51%) of the project patients to hospice and 55 (35%) patients were enrolled in hospice. The mean time from admission to the ICU until palliative care consultation was significantly less for patients at Weiler compared with Moses, 2.81 days versus 15.5 days (t=2.52, p=0.0184). The mean survival time from consultation to death at Moses was 5.13 days versus 5.3 days at Weiler (t=0.18, p=0.8589). | | | Up to 20% of deaths occur in the United States during or shortly after a stay in an ICU. Integration of palliative care clinicians into the operation of critical care units is of benefit to patients, families and critical care clinicians. Preliminary evidence suggest that such models may be associated with improved quality, higher rates of formalization of advance directives and utilization of hospice, as well as lower use of certain non-beneficial life-prolonging treatments for critically ill patients who are at the end of life. | | |

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| **Quasi-Experimental Studies (N=80)** | | | | | |
| **Citation** | **Study Aim** | **Population/ Setting** | **Study Design** | **Methods** | **Outcome Measures**  1=care processes  2=patient experience  3=patient health indices  4=quality of life  5=cost |
| 99. Okon TR, Lutz PS, Liang H. Improved pain resolution in hospitalized patients through targeting of pain mismanagement as medical error. *Journal of Pain and Symptom Management.* 2009;37(6):1039-1049.[99](#_ENREF_99) | To evaluate the influence of the implementation of a single error-prevention intervention (delayed reassessment alert intervention) on the rate of  delayed or missing reassessments, and time to  resolution of all events of severe pain recorded during the study observation periods. | The sample was comprised of observations (N=51,619) in 9 hospital units in a 504 bed tertiary teaching hospital. | Quantitative  Longitudinal  Prospective | In2006, the delayed reassessment alert intervention was introduced. Researchers programmed the existing Last Word (LW) software to generate real-time alerts by displaying a “missing reassessment” alert screen on nurses’ computer workstations. The intervention was introduced across all units where the computerized pain documentation infrastructure was available. All nurses in participating units received a detailed printed explanation of the error alerts and brief group training sessions on identifying delayed reassessment as medical error. The detection of severe pain (where severe pain intensity is defined as a score of 7 out of 10 [on a scale of 0-10] or higher or, alternatively, given a “severe” ranking in the verbal category) triggers a visually prominent alert 65 minutes later, if no intervention is documented. | 1, 3 |
| **Results** | | | **Conclusion** | | |
| There was a large and consistent reduction in the rate (%) of reassessment errors  post-intervention, with aggregate delayed reassessment error post-intervention rate of  compared with pre-intervention (p<0.0001) for a relative error reduction of 36%. The monthly error rate in any month post-intervention was significantly lower than any month pre-intervention (p< 0.0001). Consistent reduction in time to resolution of severe pain was noted across all adult care units. Statistically significant improvement was also noted among all units combined. Observed median resolution time among all hospitalized patients decreased significantly (p<0.0001). The naloxone patient/prescription rate post-intervention was significantly lower compared with pre-intervention (p=0.0130). | | | The authors state that this study reports the first performance-improvement intervention that achieved and sustained clinically relevant improvement in pain control in large, non-preselected population of hospitalized patients. They have developed a novel error prevention model, implemented a pain documentation computer infrastructure and alert system, and studied an intervention targeting impending error in pain reassessment in hospitalized patients. | | |

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| **Quasi-Experimental Studies (N=80)** | | | | | |
| **Citation** | **Study Aim** | **Population/ Setting** | **Study Design** | **Methods** | **Outcome Measures**  1=care processes  2=patient experience  3=patient health indices  4=quality of life  5=cost |
| 100. Ott KM, Haddock KS, Fox SE, et al. The Clinical Nurse Leader: Impact on practice outcomes in the Veterans Health Administration. *Nurs Econ.* 2009;27(6):363-370.[100](#_ENREF_100) | To describe the introduction of the Clinical Nurse Leader (CNL) role in a multisite health care system, development of a CNL evaluation process, and analysis of impact data. | The sample was comprised of veterans health administration facilities (N=7). | Quantitative  Longitudinal  Pre-Post Observational Evidence Based Performance Improvement | The CNL pilot began with a series of focused discussion  groups, dialogues with union partners, discussions with senior medical center leaders, requests for input from unit-based nursing staff, and interdisciplinary team members occurring over a 3-month period. Domains for outcome measures included financial, quality processes, satisfaction, and innovations.Results from these discussions became key drivers as individual sites introduced and readied the environment for a new role. | 1, 2, 5 |
| **Results** | | | **Conclusion** | | |
| Nursing Hours Per Patient Day (NHPPD) decreased significantly the year following implementation of the CNL role (p=0.0006), with an improvement of RN skill mix (p= 0.0115). Changes were attributed to the CNL’s facilitation of problem solving, decision making, and improvement of patient flow. Surgery cancellation rate also decreased significantly (3%, p=0.0045) from the period pre-CNL role to the post-CNL role implementation period. This reduction of cancelled cases re p resents an estimated $461,775 in cost avoidance and better utilization of operating room resources. In the current fiscal year to date, the cancellation rate has dropped further to 9.4%. The pre-CNL period was 84% m o re likely to have a cancellation (p=0.009), and the post-CNL period was 53% more likely to have a cancellation due to the reasons specifically addressed by the CNL (p=0.001). Over 1 year, sitter hours were reduced from 676 per month to 24 hours per month after the CNL interventions. Given the average hourly sitter cost of $15.71, the reduction in sitter hours reflects a potential monthly saving of $10,243 for this facility. One site collected data on pressure ulcers prior to protocol and pro c e d u re implementation by the CNL. Post intervention, data revealed a change in pressure ulcer prevalence from 12.5% to 4.2%. The results of the CNL efforts (p=0.0025) demonstrate a significant return on financial investment in support of the CNL role. The incidence of patient falls was collected by CNLs at two VAMC facilities. Falls per 1,000 patient days decreased, though not significantly from 1.93 to 1.37 (p=0.2102) in the 3 months post-implementation of the CNL role as compared with the 3 months pre-implementation. | | | The adoption of a major change in the professional practice model such as the full integration of the CNL role into the patient care model of the nation’s largest health care system is a challenge that the VHA Office of Nursing Services has eagerly accepted to transform nursing practice for the future. VHA nurse leaders across the entire system are highly encouraged to establish the link between their medical facilities and their academic nursing partners. Future directions by VHA Nursing include the goal of infusing the CNL role at all levels of care in all VA Medical Centers (VAMC) by the year 2016. | | |

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| **Quasi-Experimental Studies (N=80)** | | | | | |
| **Citation** | **Study Aim** | **Population/ Setting** | **Study Design** | **Methods** | **Outcome Measures**  1=care processes  2=patient experience  3=patient health indices  4=quality of life  5=cost |
| 101. Ouslander JG, Perloe M, Givens JH, et al. Reducing potentially avoidable hospitalizations of nursing home residents: Results of a pilot quality improvement project. *Journal of the American Medical Directors Association.* 2009;10(9):644-652.[101](#_ENREF_101) | To pilot test tools and strategies designed to assist nursing home professionals in reducing potentially avoidable  hospitalizations. | The sample consisted of nursing homes (N=3) in Georgia with high rates of hospitalization. | Quantitative  Longitudinal  Prospective Evidence Based Performance Improvement | The intervention focused on the implementation of a toolkit, named ‘‘INTERACT’’ (Interventions to Reduce Acute Care Transfers), that was developed by the project director and coordinator with input from the expert panel ratings of the importance and feasibility of a set of 50 potential interventions. The tools included evidence-based practices and practice guidelines, and were designed to be simple and feasible to implement in everyday practice in NHs. Use of the tools and strategies were monitored every 2 weeks during the intervention with on-site visits by the advance practice nurse. Baseline data on hospitalization rates were determined using the Minimum Data Set (MDS), and hospitalizations were rated by an expert panel as potentially avoidable using a structured implicit record review process similar to that used in a previous study of the appropriateness of hospitalizations of NH residents. All hospitalizations during the 6-month intervention were ascertained, and all hospitalizations of residents whose hospital stay was reimbursed by Medicare were reviewed by the expert panel to determine the proportion that was potentially avoidable. | 1, 5 |
| **Results** | | | **Conclusion** | | |
| Compared with baseline, the facilities had a 58%, 44%, and 36% reduction in hospitalizations per 1000 resident days; the overall reduction in the 3 facilities combined was 50%. The average hospitalization rate during the intervention for the 3 pilot facilities (1.54/1000 resident days) was slightly lower than the average rate for all 377 Georgia nursing homes (NHs) in the baseline phase (1.62/1000 resident days). The rate of potentially avoidable hospitalizations among residents on Medicare Part A (47%) was similar to the rate in long-term care residents. The baseline rate of potentially avoidable hospitalizations was 77% of the 30 hospitalizations reviewed in the 3 pilot facilities (compared with 68% for all 200 hospitalizations rated during baseline). Thus, the intervention was associated with a 28% absolute reduction in hospitalizations rated as potentially avoidable by the Expert Panel. This represents a relative reduction of 36%. | | | The quality improvement strategies and tools tested in this pilot project show promise for assisting NHs in reducing potentially avoidable hospitalizations. The results must be interpreted cautiously because this was not a controlled study, and was conducted in only 3 highly selected NHs. Refinement of the tools and implementation strategies and testing in a larger and more diverse sample of NHs is under way. | | |

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| **Citation** | **Study Aim** | **Population/ Setting** | **Study Design** | **Methods** | **Outcome Measures**  1=care processes  2=patient experience  3=patient health indices  4=quality of life  5=cost |
| 102. Padula CA, Yeaw E, Mistry S. A home-based nurse-coached inspiratory muscle training intervention in heart failure. *Applied Nursing Research.* 2009;22(1):18-25.[102](#_ENREF_27) | To determine the effect of  Inspiratory muscle training (IMT) on people with heart failure (HF). | The sample was comprised of community dwelling adults (N=32) at a single site. | Quantitative  Longitudinal  Randomized Two Group | The Threshold Device (Healthscan) was used for resistive IMT breathing training. Training consisted of demonstration by the research assistants (RAs), with return demonstration at baseline followed by a week of device use. Subjects kept a log noting duration and frequency. RAs noted the intensity on the log and recorded duration and frequency on data collection flow sheets. PImax scores were obtained using a reliability-tested inspiratory force meter, and the mean of scores from five trials was recorded. Then, 30% of that PImax value was calculated and used to calibrate the training load. The Threshold Device was adjusted to 30% of PImax on each home visit. This progression allowed individuals to adapt without muscle soreness but to exercise IMs. Subjects in the experimental group trained 7 days/week, with the exception of one subject who trained 6 days/week. The duration of training varied from 10 to 20 minutes/day, with two subjects who trained twice a day for 10–15 minutes each time. | 3, 4 |
| **Results** | | | **Conclusion** | | |
| PImax in the IMT group increased from baseline to Week 12; in the control group, the PImax remained unchanged. Repeated measures revealed a significant difference in PImax repeated measures, (p<0.0001. Post hoc analysis revealed that scores at Time 1 (Week 1) were significantly higher than those at Time 3 (Week 12). Dyspnea was also measured using the Chronic Respiratory Disease Questionnaire (CDRQ).CRDQ scores increased from baseline in the IMT group. Significant differences were detected in CRDQ scores (p=0.019). The five subjectively perceived activities causing SOB were: walking upstairs (n=23), walking uphill (n=19), carrying groceries (n = 18), going for a walk (n=17), and hurrying (n=17). Participants in the IMT group demonstrated significantly less SOB during two of the three self-identified most important activities at 6 and 12 weeks as compared to subjects in the PE group. RR was significantly different between groups, (p=0.02). | | | The critical dependent variables of IMS and dyspnea provide support that IMT as a home intervention with nurse coaching can be a therapeutic intervention in clients with Class II and III HF. The results of improvement in IM strength and endurance as measured by PImax scores are consistent with those of previous researchers. This study had similar results in decreasing Borg dyspnea scores. The gradual decrease over time in the percentage of change could be attributed to the training load with a resistance of 30% of PImax. Positive results from the CDRQ and the Borg scale, both of which measured dyspnea, are encouraging; perhaps more important was the finding that IMT subjects reported significantly less SOB on Weeks 6 and 12 on two of three self-identified most important activities. CDRQ responses clearly demonstrate the beneficial effect of IMT. | | |

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| 103. Pan Q, Meng YX, Gibbons GH, et al. Effectiveness of an intervention to improve the documentation required for diagnosis of metabolic syndrome in clinics serving African-American patients. *Quality in Primary Care.* 2009;17(3):191-196.[103](#_ENREF_102) | To determine whether a five-component intervention to improve electronic health record (EHR) data entry would increase the completeness of data, particularly height, weight, and blood pressure, needed to diagnose the metabolic syndrome (MetS). | Patients (N=525), nurses (N=4), and certified medical assistants (N=4) at two family medicine residency training clinics in Atlanta, Georgia participated in this study. | Quantitative  Longitudinal  Pre-Post Descriptive | Researchers first used focus groups to inform the intervention regarding the nurses’ understanding of EHR data entry, what should be entered during patient intake, and the barriers that might impede appropriate data entry. Barriers to EHR data entry were identified by the focus groups and a five-component intervention to address these barriers was developed. Nursing staff was educated regarding the intervention, and expectations for complete data entry were communicated. The completeness of data entry for height, weight and blood pressure was assessed in the EHR for 279 patients at pre-test and 246 patients at post-test. | 1 |
| **Results** | | | **Conclusion** | | |
| There was a much higher rate of data entry for weight and blood pressure at pre-test compared to the rate of data entry for height. Among the nursing staff, there were large variations in the pre-test rates of data entry for height (13.5–100%) and less so for weight (75–100%) and blood pressure (87.5–100%). At post-test, the rates of data entry for height improved compared to the rates of pre-test for most nursing staff. When combining entered data from all nursing staff members, there was a significant overall improvement in the post-test data entry of height (p<0.001) and blood pressure (p<0.05). | | | This educational and feedback intervention provided a simple and effective way to improve nursing staff documentation of important clinical information in the EHR of two primary care clinics. Future studies are warranted to monitor documentation, determine long-term data quality, and intervene if quality is shown to be a concern. The quality of clinical data documentation by nursing staff is important to identify patients with medical conditions such as the MetS and should lead to the appropriate treatment that will improve quality of life and decrease morbidity and mortality. | | |

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| **Quasi-Experimental Studies (N=80)** | | | | | |
| **Citation** | **Study Aim** | **Population/ Setting** | **Study Design** | **Methods** | **Outcome Measures**  1=care processes  2=patient experience  3=patient health indices  4=quality of life  5=cost |
| 104. Pastel LC, Liu S, Homa K, et al. Improving care for patients with diabetes at a rural primary care clinic by empowering licensed nursing assistants with a flow sheet tool. *Clinical Diabetes.* 2009;27(3):115-118.[104](#_ENREF_103) | To identify all patients with diabetes every time they visit the clinic and to improve performance and documentation of recommended process measures. | Patients with diabetes (N=789) at an adult preventative care center located within the Dartmouth-Hitchcock health system participated in this study. | Quantitative  Longitudinal  Pre-Post Observational Evidence Based Performance Improvement | The team of providers and licensed nurse assistants (LNAs) assessed the gaps in care by walking through the process of an office visit. Key leverage points were identified, such as notifying providers of care needed that day, engaging frontline workers in the completion of the care, and creating a system to ensure documentation. Through dialogues in meetings, it was decided to first identify all patients with diabetes who had a scheduled appointment. The LNAs generated this list every clinic day using the hospital database. A flow sheet was designed that listed the last dates of all required routine care for a patient with diabetes (such as last date of A1C testing and last date of foot exam). Flow sheets were completed by an LNA each day for scheduled patients with diabetes. The flow sheets prompted LNAs and providers to address needed care. Documentation of the day’s care was then entered into the electronic medical record by an LNA. Results and ongoing plans were displayed on a dashboard in the staff lounge and discussed during staff meetings. These changes occurred over the course of a year from February 2007 to February 2008. | 1, 3 |
| **Results** | | | **Conclusion** | | |
| Statistical process control charts showed special cause variation with an increase in the percentage of pneumococcal vaccinations from 73% at baseline to 93% after the intervention. Foot exams increased from 16 to 65%. Outcome measures also showed improvement with special cause variation in diabetes control (percentage of patients having an A1C < 7.0%) and lipid control (percentage of patients having an LDL cholesterol reading of < 130 mg/dl). These changes engaged the LNAs in chronic disease management. Patients were more likely to have evidence-based care provided to them during visits. A major challenge was staff turnover, which was addressed by making management of the flow sheets a part of the LNA job description. Because of the success achieved with this work, the Department of Medicine created a new position to oversee the management of chronic diseases. This position has promoted dissemination of the process change to other clinics. | | | Use of a flow sheet and ownership by frontline providers such as LNAs was an effective way to ensure completion of evidence-based care for patients with diabetes in this initiative. Sustainability was achieved by anchoring the process change into daily work flow and into the clinic culture. Increasing the role of LNAs to address simple aspects of patient care may give providers more flexibility and time to address patients’ more complex care needs. | | |

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| **Quasi-Experimental Studies (N=80)** | | | | | |
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| 105. Pettker CM, Thung SF, Norwitz ER, et al. Impact of a comprehensive patient safety strategy on obstetric adverse events. *American Journal of Obstetrics and Gynecology.* 2009;200(5):492.e491-492.e498.[105](#_ENREF_104) | To improve patient safety, decrease patient injury, and decrease liability losses through a program that identified and initiated specific risk-reduction clinical practices and created a comprehensive culture of safety. | The sample was comprised of patient deliveries (N=13,622) in a tertiary teaching hospital. | Quantitative  Longitudinal  Prospective Pre-Post | The team began with a review of obstetrical services by 2 independent consultants (a maternal–fetal medicine physician and a nurse specialist/leader), both experts in perinatal risk assessment and management and unaffiliated with Yale. In response to this review, researchers developed a series of protocols and guidelines delineating practice standards. These protocols and guidelines aimed to codify and standardize existing practices (e.g., clarify the appropriate dosing of oxytocin). Cases were reviewed prospectively as components of the intervention were deployed. Measures of effectiveness included number of adverse outcomes (defined by the Adverse Outcome Index, or AOI). | 1, 3 |
| **Results** | | | **Conclusion** | | |
| The mean quarterly Adverse Outcome Index (AOI) over the study period was 2.50%. When calculated monthly, mean AOI was 2.49% .A statistically significant decrease in the AOI was seen over the study period (p=0.011). This trend was still significant when the AOI was calculated on a monthly basis (p<0.001). The mean quarterly AOI for the first half of the initiative was also significantly different from that for the second half (p=0.04). For the most common marker, third and fourth-degree lacerations there was no statistically significant change over time (p=0.30). No individual component of the AOI was seen to increase over time. With respect to major obstetrical quality measures not included in the AOI, the mean cesarean delivery rate was 35.1% and the episiotomy rate was 10.9%. Of note, the cesarean delivery rate showed a significant increase over time (p<0.01) and the episiotomy rate showed a significant decrease over time (p<0.01). There were a total of 81 episodes of shoulder dystocia, with a rate of 5.95/1000 deliveries with no statistically significant change in this rate over time. From 2004 through 2007, the percentage of respondents reporting a “good teamwork climate” and a “good safety climate,” as assessed by the Safety Attitudes Questionnaire, improved from 38.5% to 55.4% and 33.3% to 55.4%, respectively. Over this same time period, perceptions among nurses and physicians of a “good teamwork climate” improved from 16.4% to 88.7% and from 39.5% to 72.7%, respectively. | | | The authors report a novel and diverse array of patient safety interventions, with evidence of success at reducing adverse events, using an adverse outcome assessment tool (the AOI). The initial composite adverse event rate was comparable to, if not lower than, previously reported rates. The authors believe that a combination of evidence-based standardization, enhancements in communication, and a dedicated patient safety nurse are the integral components of this effort. | | |

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| **Quasi-Experimental Studies (N=80)** | | | | | |
| **Citation** | **Study Aim** | **Population/ Setting** | **Study Design** | **Methods** | **Outcome Measures**  1=care processes  2=patient experience  3=patient health indices  4=quality of life  5=cost |
| 106. Pineda RG, Foss J, Richards L, et al. Breastfeeding changes for VLBW infants in the NICU following staff education. *Neonatal Network.* 2009;28(5):311-319.[106](#_ENREF_105) | To assess the effectiveness of an educational intervention aimed at staff and parents in changing breastfeeding practices in the neonatal intensive care unit (NICU). | Health care professionals (N=88), infants (N=81) and infant-mother dyads (N=54) in a neonatal intensive care unit at a single hospital. | Quantitative  Longitudinal  Pre-Post Observational Evidence Based Performance Improvement | The breastfeeding education initiative consisted of three parts: breastfeeding training for NICU staff, issuance of complementary breastfeeding materials to mothers of infants in the NICU, and addition of a breastfeeding pathway to the individualized care plan. Infants admitted before and after the initiative were compared to evaluate for changes in breastfeeding practices. Following the initial six-week educational initiative, completion of the self-study educational module on breastfeeding in the NICU became part of the orientation process for all new NICU employees. When breastfeeding had been initiated and intake was questionable, nurses were encouraged to weigh infants before and after feedings to enable mothers and HCPs to feel confident about milk volumes and to base supplementation planning on accurate information. | 1, 3 |
| **Results** | | | **Conclusion** | | |
| Rates of breast milk feeding initiation increased from 74.1 percent in the pre-intervention group to 85.2 percent in the post-intervention group, but the increase was not significant. The rate of breastfeeding in the NICU was significantly lower in the pre-intervention group than in the post-intervention (p<0.01). In the pre-intervention group, 25.9 percent of mothers breastfed their infant in the hospital one or more times, whereas in the post-intervention group, 44.4 percent of mothers breastfed their infant in the hospital at least once. This represented a significant increase of 18.5 percent in  breastfeeding in the NICU (p<0.03). The odds ratio of “ever breastfed in the hospital” was 2.3, indicating that women in the post-intervention group were more than twice as likely to breastfeed their infants while in the hospital. The rate of breast milk feeding at discharge increased from 35.8 percent in the pre-intervention group to 40.7 percent in the post-intervention group, but the increase was not significant. Of the 88 HCPs who participated in the educational initiative, 100 percent achieved a passing score after either taking part in the in-service or completing the self-study breastfeeding module. This study is limited by lack of pretest to measure change in knowledge following the initiative. | | | Success with breastfeeding in the NICU environment is multifactorial. With adequate support and education from nurses and other health care providers, these fragile infants and their mothers can overcome the challenges and succeed with breastfeeding. This study demonstrated partial but encouraging support for an education intervention plan that focused on increasing the personal knowledge of each health care practitioner and to facilitating the passage of common knowledge to the mothers of premature infants and thus effecting positive change within the NICU. | | |

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| **Quasi-Experimental Studies (N=80)** | | | | | |
| **Citation** | **Study Aim** | **Population/ Setting** | **Study Design** | **Methods** | **Outcome Measures**  1=care processes  2=patient experience  3=patient health indices  4=quality of life  5=cost |
| 107. Reid RJ, Fischerman PA, Yu O, et al. Patient-centered medical home demonstration: A prospective, quasi-experimental, before and after evaluation. *American Journal of Managed Care.* 2009;15(9):e71-e87.[107](#_ENREF_106) | To report differences in costs, utilization, quality, patient experience, and staff burnout in the first year of a Patient-Centered Medical Home (PCMH) demonstration in Washington state. | The sample was comprised of patients (N=2,686) and staff members (N=82) at a single PCMH and multiple other primary care facilities. | Quantitative  Longitudinal  Pre-Post | Baseline (2006) and 12-month (2007) measures were compared. Patient and staff experiences were measured using surveys from a random sample of patients and all staff at the PCMH and 2 control clinics. Automated data were used to measure and compare change components, quality, utilization, and costs for PCMH enrollees versus enrollees at 19 other clinics. Analyses included multivariate regressions for the different outcomes to account for baseline case mix. | 1, 2, 3, 5 |
| **Results** | | | **Conclusion** | | |
| After adjusting for baseline, PCMH patients reported higher ratings than controls on 6 of 7 patient experience scales. For staff burnout, 10% of PCMH staff reported high emotional exhaustion at 12 months compared with 30% of controls, despite similar rates at baseline. PCMH patients also had gains in composite quality between 1.2% and 1.6% greater than those of other patients. PCMH patients used more e-mail, phone, and specialist visits, but fewer emergency services. At 12 months, there were no significant differences in overall costs. | | | Evaluation of a 12-month demonstration of a PCMH in an integrated group practice demonstrated significant improvements in patients’ and providers’ experiences and in the quality of clinical care. Despite the significant monetary investment in the PCMH redesign, the costs were recouped within the first year. | | |

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| **Quasi-Experimental Studies (N=80)** | | | | | |
| **Citation** | **Study Aim** | **Population/ Setting** | **Study Design** | **Methods** | **Outcome Measures**  1=care processes  2=patient experience  3=patient health indices  4=quality of life  5=cost |
| 108. Resnick B, Galik E, Gruber-Baldini AL, et al. Implementing a restorative care philosophy of care in assisted living: Pilot testing of Res-Care-AL. *Journal of the American Academy of Nurse Practitioners.* Feb 2009;21(2):123-133.[108](#_ENREF_107) | To pilot test the feasibility of the Restorative Care for Assisted Living (Res-Care-AL) intervention. | Residents (N=14) in a single nursing facility participated in this study. | Quantitative  Longitudinal  Single Group Pre-Post Test | A Restorative Care Nurse (RCN) was placed in the facility to work with staff and residents 15 hour/week for 4 months. Specifically, the RCN worked with the Nursing Assistants (NAs) to develop short-term goals for the residents (e.g., what the resident was expected to do with regard to bathing, dressing, or exercise) and helped them to complete the Goal Attainment Scale. Resident and NA outcome measures were obtained at baseline and 4 months post-intervention. Resident outcomes included self-efficacy (SE) and outcome expectations, physical activity, function, resilience, social support for exercise, grip strength, and gait and balance, fear of falling, and quality of life. Outcomes associated with the NAs included SE and outcome expectations and knowledge and performance of restorative care. | 3, 4 |
| **Results** | | | **Conclusion** | | |
| The residents had an improvement in function based on the Barthel Index (p=0.05), strength in the dominant hand (p=0.05), and an increase in time spent in physical activity (PA) (p=0.01 resident report; p=0.04 NA report). Although not a primary outcome, the participants reported an improvement in social support for exercise from experts (p = .01) and a decline in social support from family (p=0.02). The majority of the participants (82%) achieved or exceeded their stated functional and PA goals during the 4-month period. There was no significant difference in self-efficacy (SE) and outcome expectations (OE) related to function or exercise and both SE (p =0.76; p=0.43) and OE (p=0.26; p=0.33) declined slightly over time. Likewise, there was no significant difference in resilience (p=0.59), quality of life (p=0 06–.93), or social support from friends (p=0.09), although the trends over time indicated an improvement in these factors. There was a significant improvement in OE (p=0.02) and a non-significant improvement in knowledge (p=0.06), SE in performing restorative care activities (p=0.09) and in performance of restorative care activities (p=0.82). | | | This study was limited in that it included a single site with a small homogenous sample and was only 4 months in duration. Despite these limitations, the findings suggest that implementation of a nurse led restorative care philosophy using the Res-Care-AL approach is a feasible intervention and that it may help to increase PA among the residents and the knowledge and beliefs about restorative care among the staff. Ongoing work in this area is critical to assure that those living in these sites will continue to remain at their highest functional level rather than decline needlessly because of the type of care provided. | | |

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| **Quasi-Experimental Studies (N=80)** | | | | | |
| **Citation** | **Study Aim** | **Population/ Setting** | **Study Design** | **Methods** | **Outcome Measures**  1=care processes  2=patient experience  3=patient health indices  4=quality of life  5=cost |
| 109. Resnick B, Shaughnessy M, Galik E, et al. Pilot testing of the PRAISEDD intervention among African American and low-income older adults. *Journal of Cardiovascular Nursing.* 2009;24(5):352-361.[109](#_ENREF_108) | To test the feasibility of People Reducing Risk and Improving  Strength through Exercise, Diet and Drug Adherence (PRAISEDD), which is geared at increasing adherence to cardiovascular disease (CVD) prevention behaviors among African American (AA) and low-income older adults. | Residents (N=22) in a senior urban housing facility participated in this study. | Quantitative  Longitudinal  Single Group Repeated Measures | Using a social ecological model approach, the PRAISEDD motivational, educational, and exercise  sessions incorporated techniques known to strengthen self-efficacy and outcome expectations to improve adherence to CVD prevention behaviors related to exercise, diet, and medication. Sixty-minute intervention sessions were held 3 times per week for 12 weeks. An interdisciplinary team implemented the intervention. During the first week, 4 advanced practice nurses and a pharmacist were involved in delivering education. Remaining weekly sessions included exercise, ongoing education, and motivation and were implemented by a lay exercise trainer (LET) and the PRAISEDD research nurse (PRN). The LET had prior experience in leading exercise programs for older adults (aerobic sessions, dance session, etc.) but was not a certified exercise trainer. The PRN was a registered nurse with knowledge of CVD and a commitment to health promotion and CVD prevention among older adults. | 3 |
| **Results** | | | **Conclusion** | | |
| Baseline and 4-month follow-up results for outcomes are shown in Table 3, with follow-up data obtained on 20 (91%) participants. After the 12-week intervention, there was a significant decrease in systolic blood pressure from baseline to follow-up (p=0.02). Diastolic blood pressures were also significantly reduced from baseline to follow-up (p=0.01). There were no changes over time in time spent in moderate level PA, cholesterol intake, sodium intake, and medication adherence. In addition, there were no changes over time in self-efficacy and outcome expectations for exercise, diet, and medication behaviors. | | | The study demonstrated that it was possible to engage African American and low-income older adults in a fairly rigorous exercise and education intervention 3 times per week. Exposure to PRAISEDD resulted in improvements in blood pressure. Given feasibility and potential utility of this intervention, future research with a larger sample and using randomized controlled design is recommended. The PRAISEDD intervention  should, however, be revised to implement appropriate environmental and policy changes and evaluate their  impact on adherence to CVD prevention behaviors, consider objective clinical outcomes, and use social networking to optimize the diffusion of PRAISEDD among African American and low-income older adults in senior housing facilities. | | |

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| 110. Reynolds MAH. Postoperative pain management discharge teaching in a rural population. *Pain Management Nursing.* 2009;10(2):76-84.[110](#_ENREF_109) | To implement and evaluate in rural settings a pre-discharge patient pain education intervention on patient knowledge and attitudes about pain and overall post-discharge pain scores, interference with activities of daily living, and patient satisfaction of post-discharge pain management 1 week after discharge. | Patients (N=146) from two inpatient surgical units from two rural hospitals participated in this study. | Quantitative  Qualitative  Longitudinal  Pre-Post Test | Both groups received and were instructed on how to use a pain log. In the log they were asked to record pain levels, actions taken to address pain, and effectiveness of their pain management for 1 week after discharge. They were then asked if they had any further questions regarding pain management. The control group received no further study-related interventions, but did receive the standard (unstructured) pain and pre-discharge information currently being used for that unit. The intervention group received a focused ten-minute intervention that included the research assistant going over a two-page patient education brochure adapted from the National Institutes of Health’s Cancer Pain brochure. This brochure covers the topics of patient rights related to pain management, recognized patient barriers related to pain management, pain myths, how to self-assess and document pain, and the importance of communication and follow-through with a health care provider. Measures of effectiveness included the Patient Pain Questionnaire (PPQ) and the Brief Pain Inventory (BPI) surveys in addition to the individual pain logs. | 3 |
| **Results** | | | **Conclusion** | | |
| There were no statistically significant differences between groups except that the control group had statistically significant less pain (p=0.024) 1 week after discharge. Seventy-five percent (77% in the control group, 72% in the intervention group) of all respondents reported pain scores of 4 (using a 0-10 scale) 1 week after discharge.  However, 7% (12% in the control group; 5% in the intervention group) of the respondents reported pain scores of 6. Pain continued to be responsible for “moderately” affecting general activity, normal work, enjoyment of life, and sleep in both groups. To a lesser degree, pain did not seem to interfere with mood, relationships, or ability to walk. Overall, the intervention group had less pain and less interference  in usual activities from pain. Eighty-one percent of the patients agreed that their physician or nurse made it clear that the treatment of pain was very important. Overall, patients in both groups were satisfied with their physician or nurse’s ability to manage their pain. There was no relationship between pain scores and patient satisfaction. These results are consistent with other studies that have found no correlation between satisfaction and level of pain. The patient pain log provided valuable qualitative data. Both groups recorded an average of 10 pain medication entries over the week, with some patients (33%) requiring 3 pain medications after discharge. Five percent were still requiring frequent pain medication administration at 1 week. A wide variety of pain medications were being used. In addition, 60% of patients reported using other nonpharmaceutic pain interventions, including heat, ice, relaxation, distraction, and walking. Only seven patients contacted their health care providers about their pain management, and 15 contacted their health care providers about surgically related questions. | | | Many of the findings from this study are consistent with earlier pain management research. The pain log proved to be a very effective tool for self-assessment and evaluation of pain activities and a communication tool that could be used with members of the health care team. Overall, the results of this study are consistent with earlier studies regarding the barriers related to pain knowledge and experience and the effectiveness of patient education. It suggests that the majority of postsurgical patients 1 week after discharge have well managed pain. Patient education and individual patient pain issues must be identified and then addressed. This study also recognizes that any patient may come to the hospital with a medical history that may affect pain management. | | |

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| **Quasi-Experimental Studies (N=80)** | | | | | |
| **Citation** | **Study Aim** | **Population/ Setting** | **Study Design** | **Methods** | **Outcome Measures**  1=care processes  2=patient experience  3=patient health indices  4=quality of life  5=cost |
| 111. Richardson L, McCauley E, Katon W. Collaborative care for adolescent depression: A pilot study. *General Hospital Psychiatry.* 2009;31(1):36-45.[111](#_ENREF_110) | To explore the preliminary outcomes and assess the feasibility and acceptability of a collaborative care intervention designed to improve treatment and outcomes of depression among youth seen in primary care settings. | Adolescent patients (N=40) at three primary care clinics in the Pacific Northwest participated in this study. | Quantitative  Qualitative  Longitudinal  Pilot study with Repeated Measures and Grounded Theory Components | The intervention model was adapted from the IMPACT study developed for the improvement of depression among older adults. Specific components included from this model include the provision of case management by a depression care manager (DCM), enhanced patient education about depression and its treatment, encouragement of patient self-management, provision of enhanced antidepressant medication care or Problem Solving Treatment – Primary Care (PST-PC) based on patient choice, and case-management supervision of the DCM by child mental health specialists. Measures of effectiveness included the PHQ-9, Moods and Feelings Questionnaire (short form), the Columbia Impairment Scale, the Screen for Child Anxiety Related Disorders, and patient satisfaction. | 2, 3 |
| **Results** | | | **Conclusion** | | |
| There was a significant improvement in depression scores and functional impairment from baseline to six month follow-up. Both parents and youth reported high levels of satisfaction with the intervention. Semi-structured exit interviews were completed with 16 youth and 21 parents. In exit interviews, youth and parents again expressed high levels of satisfaction with the intervention. Youth particularly appreciated that the DCM was “non-judgmental”, “cared about” them, was “available” and took the time to listen to their concerns, communicated concern by calling to check in with them and remembering what they had discussed, and made practical suggestions that they felt they could apply in their everyday lives. In addition to meetings with the DCM, about two-thirds of youth interviewed also felt that group sessions with other teens would be helpful so that they did not “feel so alone”. Youth and parents appreciated that the care took place in their primary care physician’s office and felt that it was easy to arrange appointments. Parents felt that their children benefited from having “another adult” to relate to and appreciated that regular visits with the DCM encouraged them to keep underlying issues “on the table” and helped their children to “learn to take care of themselves.” Parents’ main request was that they would have liked more information about what tasks their children were working on with the DCM. A final theme that arose related to concern about the timing of the intervention. | | | In this study of collaborative care among youth with depression, the authors found significant improvements in depressive symptoms and functional impairment. Although it is difficult to assess active intervention effects versus regression to the mean or placebo effects without a control group, these results are similar to results observed in collaborative care trials in adults. These findings demonstrate greater improvement than what has been seen in either the treatment or control groups for the only prior multimodal Collaborative Care trial among adolescents. Authors also found that this model of care was feasible and was associated with high rates of satisfaction for both teens and parents. Based on these results, collaborative care seems promising for improving depression treatment and outcomes among youth. | | |

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| **Quasi-Experimental Studies (N=80)** | | | | | |
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| 112. Robertson B, Aycock DM, Darnell LA. Comparison of centering pregnancy to traditional care in Hispanic mothers. *Matern Child Health J.* May 2009;13(3):407-414.[112](#_ENREF_111) | To compare maternal and infant perinatal outcomes in Hispanic women who chose an existing centering pregnancy model (CPM) for their prenatal care with Hispanic women who chose the traditional method of prenatal care. | Hispanic women (N=49) receiving prenatal care in a hospital based clinic participated in this study. | Quantitative  Longitudinal  Prospective  Comparative | **T**he components of CPM are similar to those of other  group models; each session includes risk assessment, didactic components and group discussion. Women  have their first visit individually with their provider: the  history is obtained, physical assessment is performed, and risk factors are evaluated. Assignment to a group of 8–12 women who share similar due dates occurs and the group meets once a month for 90 min for 4 months, then  biweekly for the remainder of the pregnancy. Outcome measures included: satisfaction with care delivery model, health behaviors, prenatal/postnatal care knowledge, self-esteem and depression. Breastfeeding initiation and continuation, infant birth weight, gestational age at delivery, mode of delivery and infant length of stay were also collected. | 2, 3, 5 |
| **Results** | | | **Conclusion** | | |
| The majority of participants in both groups experienced a vaginal delivery (traditional 87% and CPM 89%) and there was no significant difference in infant birth weights between the groups ( p=0.624). There were no preterm births and only one post-term birth. On average the mothers delivered within 2 ± 7.5 days of their due date and no differences were found between the groups. The length of hospital stay was similar as well, with 75% of the participants discharged in 1–2 days. A total of 29 out of 33  mothers reported breastfeeding their babies at some point during the first 6 weeks, 13 traditional mothers and 16 CPM mothers. At their 6-week check-up, 19 mothers were  continuing to breastfeed while three traditional mothers and five CPM mothers had stopped breastfeeding. Inadequate milk production was the main reason given for why participants had stopped breastfeeding. When asked how much time they had to talk with their midwives about breastfeeding during pregnancy, overall 48% reported just enough time, 38% too much time, and 13% not enough time. Overall, participants scored above the midpoint of the scale for health behaviors. Knowledge scores for participants in both groups were low. Self-esteem was measured as a prenatal and postnatal outcome and thirteen participants in each group completed both time points. Prenatal self-esteem scores were similar—and relatively high—for both groups, and within-group scores did not change significantly, pre- to post-partum (p=0.802). There was a significant difference in postpartum self-esteem scores between the groups: Mothers in the traditional group had higher self-esteem scores than mothers in the CPM group. In examining postnatal outcomes, depression and participant satisfaction with care were similar between groups. The average depression score for all participants was 11.5±6.5 and 24% of participants scored greater than 16 on the CES-D, indicating possible clinical depression. Overall scores on the Participation and Satisfaction Questionnaire were high, indicating that participants in both groups were satisfied with their prenatal care. | | | This study found that the CPM model offers an innovative, acceptable way to deliver prenatal care that fosters participation and sharing of experiences. There is preliminary data that indicates that participants of CPM were satisfied with their care and therefore, is an acceptable approach for Hispanic women. However, a larger randomized clinical trial with Hispanic women is needed to determine if CPM is better than traditional care with regard to both maternal and infant outcomes. Additionally, economic as well as provider satisfaction must be considered prior to adopting this model of care delivery. | | |

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| **Quasi-Experimental Studies (N=80)** | | | | | |
| **Citation** | **Study Aim** | **Population/ Setting** | **Study Design** | **Methods** | **Outcome Measures**  1=care processes  2=patient experience  3=patient health indices  4=quality of life  5=cost |
| 113. Rodriguez KL, Burkitt KH, Sevick MA, et al. Assessing processes of care to promote timely initiation of antibiotic therapy for emergency department patients hospitalized for pneumonia. *Joint Commission Journal on Quality & Patient Safety.* Oct 2009;35(10):509-518.[113](#_ENREF_112) | To evaluate a quality improvement (QI) project for patients with pneumonia hospitalized from the emergency department (ED) which was undertaken to: 1) delineate the basic steps in the flow of patient care from presentation in the ED to time to first antibiotic dose (TFAD), 2) identify perceived barriers to and facilitators of reduced TFAD within these steps, 3) describe QI strategies to improve TFAD rates, and 4) identify perceived strategies for facilities to enhance performance. | Health care providers (N=82) at 20 VA hospitals participated in this study. | Quantitative  Qualitative  LongitudinalMixed Methods Evidence Based Performance Improvement | The QI project was conducted at 10 lower- and 10 higher-performing Veterans Affairs hospitals on the basis of the proportion of patients whose TFAD was within four hours of presentation. An ED physician, an ED nurse, a radiologist, a pharmacist, and a quality manager from each site were invited to participate in a survey and focus group. At the foundation of this QI approach is the creation of flow diagrams or charts that 1) document the sequence of and interactions in health care delivery steps and 2) begin to examine variation within these steps. An explicit aim of this project was to develop a flow diagram outlining the basic steps in patient care from presentation in the ED to TFAD. By focusing on higher- and lower-performing sites, researchers sought to elucidate variations in the processes of care between those who were better able to initiate TFAD and those who were not. | 1 |
| **Results** | | | **Conclusion** | | |
| Of the 82 survey participants, 59 (72%) perceived that ordering and performing the chest radiograph was the step most frequently resulting in TFAD delays. Medical provider assessment, chest radiograph interpretation, ordering/obtaining blood cultures, and ordering/administering initial antibiotic therapy also caused TFAD delays. The most commonly perceived barriers were patient and x-ray equipment transportation delays and communication delays between providers. The most frequently used strategies to reduce TFAD were stocking antibiotics in the ED and physician education. Focus groups emphasized the importance of multifaceted QI approaches and a top-down hospital leadership style to improve TFAD performance. | | | The study described a series of complex, stepwise processes of care, involving numerous hospital departments, on which TFAD relies and identified the most commonly perceived barriers. Addressing these barriers, as well as involving facility leadership in setting institutional QI goals, has the potential to improve performance on this pneumonia quality measure. Future research should examine the impact of specific interventions and provide insights on performance. | | |

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| **Quasi-Experimental Studies (N=80)** | | | | | |
| **Citation** | **Study Aim** | **Population/ Setting** | **Study Design** | **Methods** | **Outcome Measures**  1=care processes  2=patient experience  3=patient health indices  4=quality of life  5=cost |
| 114. Rodriguez-Paz JM, Mark LJ, Herzer KR, et al. A novel process for introducing a new intraoperative program: A multidisciplinary paradigm for mitigating hazards and improving patient safety. *Anesthesia and Analgesia.* 2009;108(1):202-210.[114](#_ENREF_113) | To describe the creation and testing of a process led by the  Department of Anesthesiology at Johns Hopkins Medical Institutions that allowed the prospective identification and mitigation of hazards related to a new intraoperative procedure. | The sample was comprised of simulated multidisciplinary patient care processes (N=20) in a tertiary teaching hospital. | Quantitative  Qualitative  Longitudinal | High-dose-rate intraoperative radiation therapy (HDR-IORT) is a high risk, low volume procedure in the intraoperative setting. The Weinberg Perioperative Clinical Services Team (WPCST) recognized that this new and unfamiliar therapy posed new and potentially unknown hazards to patients and clinicians, and that its use would require modifications to both the OR and the provision of care, as no member of the OR team could be physically present during the delivery of the treatment. A process that would allow identification and mitigation of all foreseeable hazards before the use of HDR-IORT in real patients was needed. A multidisciplinary, systematic process was created to allow the development of a treatment protocol, the  testing of the readiness of the team that would be  performing the procedure, and the practice of its delivery in a safe manner to avoid any potential harm to future patients. | 1 |
| **Results** | | | **Conclusion** | | |
| After the simulated scenarios, the entire team participated in a debriefing session in which they analyzed their experiences, expressed concerns over safety issues, identified more possible defects and hazards, and proposed solutions. A list of all of the defects was created during the initial session and action items for improving specific areas were assigned to the appropriate parties. Twenty potential defects inpatient care were identified and corrected. Six defects were related to radiation safety for both the patient and the clinical staff; four defects were associated with non-radiation safety for the patient (anesthesia-related), six defects concerned teamwork and communication, and four defects related to equipment and supplies. | | | The methodology presented in this paper for introducing a new procedure has been successful in achieving the goal of minimizing patient risk by decreasing the percentage of defects per hazard. Innovative multidisciplinary, systematic, and proactive approaches to patient safety are rare in health care. This approach and the replication of the environment and the conditions in which processes occur, via in situ simulation, greatly facilitates proactive risk management inpatient care. Moreover, standardization of practice, detection of defects, and correction of defects before patient exposure results in familiarity and comfort of the team members with a new and totally unfamiliar technique and produces a cultural change with great potential to affect outcomes. | | |

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| **Quasi-Experimental Studies (N=80)** | | | | | |
| **Citation** | **Study Aim** | **Population/ Setting** | **Study Design** | **Methods** | **Outcome Measures**  1=care processes  2=patient experience  3=patient health indices  4=quality of life  5=cost |
| 115. Romero A, Brown C, Richards F, et al. Reducing unnecessary medicare admissions: A six-state project. *Professional Case Management.* 2009;14(3):143-150.[115](#_ENREF_114) | To evaluate the influence of the Case Management Assignment Protocol (CMAP), which standardizes the decision-making process at admission, thereby increasing the number of hospitalized patients assigned to the correct status of inpatient or observation. | The sample was comprised of records of Medicare patient admissions (N=368) at 16 hospitals. | Quantitative  Longitudinal  Pre-Post Observational  Evidence Based Performance Improvement | The Centers for Medicare & Medicaid Services funded a project in six western states to decrease the payment error rate in short-stay admissions and decrease the number of inpatient discharges for short stays. Seventeen hospitals were recruited to implement the Case Management Assignment Protocol (CMAP), which standardizes the decision-making process at admission, thereby increasing the number of hospitalized patients assigned to the correct status of inpatient or observation. Measures of effectiveness included number of unnecessary short-stay admissions and adherence with admission criteria. | 1, 5 |
| **Results** | | | **Conclusion** | | |
| Overall, the percentage of unnecessary short-stay admissions decreased from 26.4% to 12.4% with 12 of the 16 participating hospitals showing improvement. This was a 53.1% relative improvement over the baseline measurement. Overall, the rate of short stays for the participating hospitals changed very little (16.7% to 16.3%), with half of the 16 participating hospitals showing an increase in the percentage of short-stay discharges. This 2.3% relative improvement did not represent a significant decrease in the short-stay rate for participating hospitals. At re-measurement, 87% of the records using the intervention protocol to determine admission status met admission criteria compared with 77.8% of the records not using the intervention protocol. The difference in these rates was statistically significant, indicating a relationship between the use of the protocol and meeting admission criteria. | | | Based on the decrease in unnecessary admissions and the relationship between use of the protocol and correct admission status, the project demonstrated that the CMAP was effective in ensuring that patients were placed in the appropriate status. This was true even when the protocol was not implemented identically across all hospitals. | | |

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| **Citation** | **Study Aim** | **Population/ Setting** | **Study Design** | **Methods** | **Outcome Measures**  1=care processes  2=patient experience  3=patient health indices  4=quality of life  5=cost |
| 116. Rosenthal T, Erbeznik M, Padilla T, et al. Observation and measurement of hand hygiene and patient identification improve compliance with patient safety practices. *Academic Medicine.* 2009;84(12):1705-1712.116 | To describe a program at the UCLA Medical Center, called Measure to Achieve Patient Safety (MAPS), which uses undergraduate student volunteers to carry out observations in the hospital. | The study was completed at the UCLA Medical Center, in collaboration with the David Geffen School of Medicine. | Quantitative  Longitudinal  Pre-Post Observational Evidence Based Performance Improvement | As part of a hospital service initiative, student volunteers had been interviewing patients for three years. In 2003,  the hospital’s administration asked the director of patient relations and the director of the nursing administration  project to expand the student volunteer program and organize a group of undergraduate volunteers to conduct  patient safety practice observations for the hospital. This program was called Measure to Achieve Patient Safety  (MAPS). Observational measures included: hand hygiene, use of two patient identifiers, elements of handoffs, and cost of the program. | 1, 3 |
| **Results** | | | **Conclusion** | | |
| Handwashing has increased from a baseline of 50% to a level consistently 90%; the nurse’s checking of two patient identifiers at the time of medication administration increased to 100%, and the nurse-to-transporter handoff for patients leaving units has increased from 40% to 90%. In comparing the value of handwashing with that of other measures necessary to reduce hospital-associated infections, the authors found that the UCLA hospital’s rates of methicillin resistant Staphylococcus aurea are substantially lower than those reported from many other hospitals. | | | The use of trained student volunteers has been a critical factor in the success of several important patient safety initiatives at UCLA. The MAPS program is a low-cost, high-yield program. The improvement shown in these hard-to-measure processes is evidence of the broad acceptance of the program by the clinical staff and also is a reflection of the effort that goes into acculturating and training students. Most academic medical centers and many community hospitals have access to this highly motivated labor pool. | | |

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| **Citation** | **Study Aim** | **Population/ Setting** | **Study Design** | **Methods** | **Outcome Measures**  1=care processes  2=patient experience  3=patient health indices  4=quality of life  5=cost |
| 117. Ryan M, Aloe K, Mason-Johnson J. Improving self-management and reducing hospital readmission in heart failure patients. *Clin Nurse Spec.* 2009;23(4):216-221.[117](#_ENREF_116) | To promote quality care, enhance patient outcomes, and further integrate evidence-based practice (EBP) into the institution’s nursing practice culture by involving nursing staff in a pilot evidence-based project. | The sample was comprised of patients with heart failure (N=22) and family members (N=5) at a single Northeastern hospital. | Quantitative  Longitudinal  Pre-Post Observational Evidence Based Performance Improvement | On admission, standard written discharge instructions containing information on pneumococcal/influenza vaccination, and follow-up appointment were given to patients. Patients admitted with HF were invited to attend a group discharge education session. The group discharge education intervention included a 60-minute, group teaching session presented initially by the nurse manager and then by a staff nurse with participation from dietary and home care personnel. The main tenet of this intervention is to link the disease, its symptoms, and the selection of appropriate treatment to skill building in critical target patient behaviors. Effectiveness measures included hospital readmission, knowledge acquisition, and satisfaction with the program. | 3 |
| **Results** | | | **Conclusion** | | |
| Of 22 patients who attended a group session, 18 (82%) were not readmitted for HF within 90 days. Of 22 patients who were hospitalized on the same unit with the same primary diagnosis of HF but did not attend a group session, 15 (68%) were not readmitted. These findings do not account for patients who were readmitted to another institution for HF or died during the 90-day follow-up period Of the 22 patients and 5 family members who completed the survey, the mean score for acquiring information and liking the group instruction method was 4.6 (of a possible score of 5). | | | The pilot evidence-based group discharge education sessions for patients with HF resulted in a smaller percentage of HF readmissions 90 days after discharge, compared with similar patients who did not participate in the education program. Patients and family members believed they received helpful information about self-management for HF. This unit-based initiative reflects data from a small number of patients, but results were encouraging. A research study is being considered that will explore the impact  of group education on readmission after controlling for factors known to influence readmission, such as level of education, ejection fraction, and presence/absence of caregivers. This evidence-based approach to group discharge education is now being considered for patients on the stroke unit evidencing further diffusion of EBP within the organization that is highly committed to having nursing staff practice from this posture. | | |

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| **Quasi-Experimental Studies (N=80)** | | | | | |
| **Citation** | **Study Aim** | **Population/ Setting** | **Study Design** | **Methods** | **Outcome Measures**  1=care processes  2=patient experience  3=patient health indices  4=quality of life  5=cost |
| 118. Salamon L. Catheter-associated urinary tract infections: A nurse-sensitive indicator in an inpatient abilitation program. *Rehabil Nurs.* 2009;34(6):237-241.[118](#_ENREF_117) | To collect baseline data on catheter-associated urinary  tract infections (CAUTI) in a hospital-based inpatient rehabilitation program and to benchmark the CAUTI rate against other inpatient rehabilitation programs in the National Healthcare Safety Network (NHSN), a division of the Centers for Disease  Control and Prevention (CDC). | The study was completed in two inpatient rehabilitation units in a single hospital. | Quantitative  Longitudinal  Pre-Post Observational Evidence Based Performance Improvement | Data collection was facilitated by the collaborative efforts of the health unit coordinators and the day-shift resource nurses. Each morning, the health unit coordinators generated the denominator data collection sheets by placing patient identification stickers on forms for each patient on the unit. The health unit coordinators gave the forms to the day-shift resource nurses, who talked with each nurse to identify patients with indwelling catheters. This information was then faxed to the infection control department. Concurrently, information services generated daily urinalysis reports containing the results of any urinalyses that were performed for patients on the unit. These reports contained data on bacteria present, urinalysis bacteria time, organisms found, nitrite, leukocyte esterase, white blood cells, and the most recent patient temperature recorded in the electronic record. Staff within the infection control department correlated the patients with indwelling urinary catheters to the urinalysis reports. | 3 |
| **Results** | | | **Conclusion** | | |
| Baseline data for Unit A were compiled for January–April 2007. There were 634 device days/3,786 patient days, with an average utilization rate of 0.17. A total of 35 patients developed CAUTI during this time period. They included 21 females and 14 males, with an average age of 71 years. Nine pathogens were identified: E. coli (n=13), Enterococcus sp (n=6), coagulase-negative staphylococcus (n=6), Klebsiella (n=4), methicillin-resistant Staphylococcus aureus (n=2), Enterobacter (n=1), hafnia (n=1), Enterococcus sp/S. epidermisis (n=1), and Pseudomonas (n=1). Of these infections,  17 were symptomatic and 18 were asymptomatic. Ongoing surveillance data for Unit A were collected through April 2008. No CAUTI were reported in August and September  2007. In January 2008, there were 169 device days/1,208 patient days, with an average utilization rate of 0.14. Six patients developed CAUTI; all were asymptomatic. In April 2008, there were 137 device days/1,028 patient days, with an average utilization rate of 0.13. Two patients developed CAUTI; both were asymptomatic. Baseline data for Unit B were compiled for January–May 2007. There were 92 catheter days/647 patient days, with an average device utilization rate of 0.14. Three patients developed CAUTI. All three patients were female with an average age of 81 years. Three pathogens were identified: E. coli (n=1), Proteus (n=1), and Pseudomonas (n=1). Of these infections, one was symptomatic and two were asymptomatic. Ongoing surveillance for Unit B occurred August–December 2007. There were 71 device days/393 patient days, with an average utilization rate of 0.15. A total of three patients developed CAUTI during this time period; two were symptomatic and one was asymptomatic. No additional data were collected in 2008 because the unit converted to an inpatient orthopaedic unit. | | | The purpose of this project was to collect baseline data on CAUTI in a hospital-based inpatient rehabilitation program and benchmark the CAUTI rate with other inpatient rehabilitation programs. The ability to benchmark has been hindered by the limited number of facilities submitting data to NHSN, but researchers successfully collected baseline data for these units. As a result of this project, they have been able to reduce CAUTI and sustain these reductions for more than a year. They have seen spikes intermittently in the number of CAUTI, but attribute this to a period when there were an unusually high number of spinal cord-injury patients with neurogenic bowel and bladder. There was also a period during which the CAUTI bundle tool was not routinely complete and the ABCs were not followed. They now routinely monitor compliance of the ABCs, and anticipate they will continue to reduce the number of CAUTI on the unit. The success of this project has been the impetus for revisions to the urinary catheterization policy and a system-wide effort to implement many of the strategies identified in this project. An additional benefit of this project has been meeting the management goals of acute care of the elderly to reduce the number of urinary catheters. Initial evaluation of outcomes has shown an overall reduction of CAUTI within the hospital system. | | |

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| 119. Sax HC, Browne P, Mayewski RJ, et al. Can aviation-based team training elicit sustainable behavioral change? *Arch Surg.* 2009;144(12):1133-1137.[119](#_ENREF_118) | To quantify effects of aviation-based crew resource management training on patient safety–related behaviors and perceived personal empowerment | The sample was comprised of staff (N=857) in a 722 bed teaching hospital and an affiliated 247 bed community hospital. | Quantitative  Longitudinal  Prospective Observational | Drawing on many of the analogies between medicine and aviation, a program was developed based on aviation crew resource management (CRM) interventions. A perioperative checklist was developed by the head nurse for cardiac surgery, a web-based error reporting program was implemented, and a survey for assessing staff perception of safety empowerment was implemented. Effectiveness measures include: checklist use, error self-reporting, and a 10-point safety empowerment survey after participation in a crew resource management training intervention. | 1 |
| **Results** | | | **Conclusion** | | |
| The majority of participants were nurses (50%), followed by ancillary personnel (28%) and physicians (22%). Consistent checklist use rose from 75% in 2002 to 100% in 2007 and beyond. Self-reporting of incidents rose from 709 per quarter in 2002 to 1481 per quarter in 2008. There was an increase in willingness to report unsafe conditions or near misses (15.9% in 2002 and 2003 vs. 20.3% in 2004 through 2008; p<0.01). Nurses filed the majority of reports, followed by physicians and pharmacists. During the period of 2005 to 2007, the course engendered an immediate training effect with significant increases in all 10 surveyed areas. The ease of confronting incompetence in others (questions 5-7) was lowest on entry into the course. Although significant improvement in empowerment occurred in all areas, a clear hierarchy was seen in perceived comfort in confronting incompetence in various specialties, with confronting a technician rated more comfortable than reporting either a nurse or physician. | | | In summary, the introduction of CRM training, combined with other initiatives, enhanced personal commitment to patient safety and appeared to alter behaviors relative to checklist use and self-reporting. Participants became aware of, and empowered, by these tools. Leadership of institutions must strive to foster the elusive “culture of safety” by creating an environment that focuses on systems issues as opposed to individual blame, maintains personal accountability, and encourages open communication in a supportive environment across all disciplines. | | |

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| 120. Sedlak CA, Doheny MO, Jones SL, et al. The clinical nurse specialist as change agent: Reducing employee injury and related costs. *Clin Nurse Spec.* 2009;23(6):309-313.[120](#_ENREF_120) | To examine the role of the clinical nurse specialist (CNS) as it relates to the implementation of a CNS-initiated Safe Movement Program and to report findings from a CNS-initiated safe movement program (SMP) in reducing healthcare workers’ injuries and related costs. | The sample consisted of health care workers (N=46) at a single extended care facility. | Quantitative  Qualitative  Longitudinal  Pre-Post | Data were collected for 1 year before implementation of the Safe Movement Program (SMP) and for 1 year after implementation of the SMP. The education intervention incorporated ergonomic, evidence-based standards and safe movement technology. Over a 7-month period, 175 healthcare staff received 4 hours of didactic content/ instruction and 4 hours of competency demonstration/ testing. Effectiveness measures included number of staff injury incident reports, worker’s compensation data, and repeated staff surveys to evaluate perceptions of the program and its effectiveness. | 3, 5 |
| **Results** | | | **Conclusion** | | |
| Data gleaned from the healthcare worker questionnaire revealed significant changes in healthcare worker perception of injuries related to lifting and transferring of nursing home residents. The number of healthcare workers who thought an injury occurred as a result of lifting or transferring a resident was reduced from 16 in time 1, to 4 in time 2—a reduction of 75%. In time 1, 15 healthcare workers felt that lifting and transfer injuries resulted in a back strain. In time 2, only 3 felt these injuries resulted in a back strain—a reduction of 80%. The number of times in a month healthcare workers felt lifting or transferring a resident was ‘‘too much’’ for them reduced from 11 times per month in time 1, to 3 times per month in time 2—a 73% reduction. Healthcare worker incident reports also revealed that lost workdays related to lifting and transfer injuries were reduced from 389 in time 1, to 4 in time 2—a reduction of nearly 100%. Objective data provided by the extended-care facility’s human resources department indicated a substantial reduction in workers’ compensation and modified workday costs after the implementation of the SMP. In time 1, workers’ compensation claims (including reserves) related to lifting and transferring paid by the extended-care facility’s worker compensation insurance carrier went from $217,951 to $14,705—a 93% reduction. Another notable observation was that the extended-care facility’s worker compensation insurance premium rate was reduced from $4.41 (per $100 in gross wages) in time 1, to $2.78 (per $100 in gross wages) in time 2—a 37% reduction. The extended-care facility’s total worker compensation premium paid in time 1 was $346,228, compared with $238,955 in time 2—a 31% reduction and a savings of $107,273. The reduction in healthcare worker injuries related to lifting and transferring in time 2 is largely responsible for an annual out-of-pocket cost savings to the extended-care facility of $121,599. With a total equipment cost of $597,463, it is estimated that the extended-care facility would recoup the cost of their safe movement equipment investment in 5 years. | | | This endeavor is an example of the success that CNSs experienced through coordination and collaboration among CNSs in academia and the community, administrators, and staff in development of an SMP. By capitalizing on each other’s strengths and expertise and using the evidence for safe patient handling, the safety of extended-care facility residents and healthcare staff during lifting/transferring can be promoted, while the cost-effectiveness of the care is improved. | | |

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| 121. Specht J, Bossen A, Hall GR, et al. The effects of a dementia nurse care manager on improving caregiver outcomes outcomes. *American Journal of Alzheimer's Disease and Other Dementias.* 2009;24(3):193-207.[121](#_ENREF_122) | To describe the nurse case manager (NCM) role implemented in the Iowa Administration on Aging’s Alzheimer’s Demonstration Grant to the States (ADDGS) and the methods used to evaluate the NCM role. | The sample consisted of rural community dwelling client-family dyads (N=249). | Quantitative  Longitudinal  Pre-Post | In this project, NCMs were registered nurses who used the nursing, disease management, and case management processes, along with community health nursing principles to assist client dyads. Assessment instruments were used to identify areas of need or problems and guide the development of a comprehensive interdisciplinary, yet individualized plan of care. Home visits depended upon needs, often frequently as weekly in the beginning, decreasing in frequency as CG confidence increased or other resources were used. There was always at least monthly contact, and the NCM was available by phone whenever the CG wished to call. In addition, because of the progressive nature of the disease, periodic reassessment was essential to modify the plan as needs changed. Care recipient outcomes included the following: cognitive status measured by the Mini-Mental Status Exam (MMSE)15 and the Global Deterioration Scale (GDS)16, Lawton and Brody’s17 modified IADL/ADL measure, Behavior Rating Checklist18, and relocation as reported by the family. Caregiver outcomes included health status, well-being, stressors, and CG endurance potential. | 3, 4 |
| **Results** | | | **Conclusion** | | |
| Compared with baseline, there was a significant increase in the ADL index at 3 to 9 months (p=0.003) and at 9 to 15 months (p<0 .0001) in the NCM group, with no significant change observed in the comparison group (p>0.80). There was no significant difference in the mean behavior rating index (p>0.90), MMSE (p>0.85), and GDS (p>0.14) between the NCM and comparison groups at the 2 follow-up periods. Caregiver outcomes (stress, well-being [WB], and EP) were also assessed at 3 to 9 months and at 9 to 15 months from baseline. Of the 107 CRs with a CG that had follow-up, 63 (40 NCM and 23 comparison) and 45 (29 NCM and 16 comparison) CGs had follow-up data for the CG outcome variables at the 3 to 9 months and 9 to 15 months follow-up periods, respectively. During the 15 months follow-up period, the NCM and the comparison showed significantly different patterns of change over time for all 3 CG outcomes, as indicated by a significant group–time interaction (p=0.014 for stress; p=0.002 for WB; and p=0.006 for EP). For CG stress, the proportion of CGs with extensive or substantial stress did not significantly change in the NCM group during the follow-up period (p>0.38). In contrast, there was an increase in the proportion of CGs with extensive or substantial stress in the comparison group at the 3 to 9 month follow-up (p=0.077), although the stress score decreased at the 9 to 15 month follow-up. At the 3 to 9 month follow-up, the CGs in the comparison group were more likely to have had extensive/substantial stress compared with the CGs in the NCM group (p=0.019). | | | The results of this study substantiate that providing ongoing support and education focused on the needs of the CG and CR makes a difference with the ability to keep the person with Alzheimer’s Disease (AD) in the home longer without compromising the health and well-being of the CG. The NCM is one model that holds promise for providing the support and education and merits further testing with increased specification of the intervention. | | |

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| 122. Spence R. SBIRT outcomes in Houston: Final report on InSight, a hospital district-based program for patients at risk for alcohol or drug use problems. *Alcoholism: Clinical and Experimental Research.* 2009;33(8):1374-1381.[122](#_ENREF_123) | To examine changes in adult patients’ self-reported 30-day measures of heavy alcohol use and other drug use from intake to 6-month follow-up. | Patients (N=1,937) screened for substance abuse in a single hospital participated in this study. | Quantitative  Longitudinal  Single Group Pre-Post Test | Screening, Brief Intervention, and Referral to Treatment (SBIRT) services have been implemented as the standard of care for patients in the Harris County Hospital District (HCHD). Patients were screened for alcohol and drug use at medical admission. Those who  were positive received further assessment and were transitioned to receive services as appropriate. A sample of consenting patients who were positive and received services was contacted at 6 months for a follow-up interview. Using an intent-to-treat (ITT) protocol, the analysis included all patients who were assigned for follow-up, including those with completed follow-ups as well as those who could not be contacted at follow-up. Patients not contacted at follow-up were assumed to have maintained their baseline drug and alcohol consumption levels. | 3 |
| **Results** | | | **Conclusion** | | |
| There was an overall reduction in the number of patients reporting any days of heavy drinking from 70% at intake to 37% at 6-month follow-up and a reduction in the mean number of days of heavy drinking from 7.8 days at intake to 4.1 days at follow-up. The number of patients reporting any days of drug use was 82% at intake versus 33% at follow-up, and the mean number of days of drug use declined from 8.3 days at intake to 4.2 days at follow-up. | | | The results were consistent with but of greater magnitude than most other studies reporting positive outcomes for SBIRT patients. Drug use and heavy alcohol use were found to decrease substantially from admission to follow-up. This finding holds good for all levels of drug or alcohol misuse severity, with the highest severity patients showing the largest decreases. Future studies are needed to control for potential regression to the mean effects and to develop improved understanding of differences in outcomes by race ⁄ ethnicity. | | |

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| 123. Spettell CM, Rawlins WS, Krakauer R, et al. A comprehensive case management program to improve palliative care. *Journal of Palliative Medicine.* 2009;12(9):827-832.[123](#_ENREF_124) | To evaluate the impact of comprehensive case management (CM) and expanded insurance benefits on use of hospice and acute health care services among enrollees in a national health plan. | The sample consisted of commercially insured or Medicare Advantage members (N=4,325). | Quantitative  Longitudinal  Retrospective Matched Cohort | A comprehensive case management program termed the  ‘‘Compassionate Care Program’’ was launched at the end of 2004 and included comprehensive case management services provided by health plan nurse case managers who received extensive training in palliative care. This specialized case management program supplemented the traditional case management services available to all health plan members. In addition to the enhanced case management, insurance benefits for hospice and acute health care services were expanded for one of the groups. The main outcomes measured to compare the outcomes of the three groups were: the proportion using hospice, mean number of hospice days, and number of inpatient days measured through medical claims. | 5 |
| **Results** | | | **Conclusion** | | |
| For each group receiving CM, the percentage of members using hospice more than doubled compared to its control group (p<0.0001). The mean number of days with hospice increased from 21.4 days to 36.7 days (p<0.0001) for the Enhanced Benefits CM group, and from 15.9 days to 28.6 days (p<0.0001) for the CM group. The rate of use of hospice in the Medicare CM Group was 62.9%. The percentages of members with an acute inpatient stay after program enrollment were reduced for the Enhanced Benefits CM Group (p<0.0001), CM group (%, p<0.0001), and Medicare CM group (p<0.0001) compared to their respective control groups. The number of acute inpatient days was reduced for the Enhanced Benefits CM group (p<0.0001), CM Group (, p<0.0001), and Medicare CM Group (p<0.0001) compared to their respective control groups. The proportion of members with ICU stays during an acute inpatient admission was significantly lower for all of the groups receiving CM compared to their respective control groups, as was ICU days per thousand member (p<0.0001) compared to the control groups. Primary care physician visits were lower for the Commercial CM Groups compared to their control groups. Specialist visits were lower for all CM Groups compared to their control groups, including Medicare CM. | | | The findings of the present study suggest that unmet needs of seriously ill patients for palliative care and symptom management may be addressed by more comprehensive and specialized case management and more liberal plan design. The findings suggest that liberalization of hospice benefits that permits continued curative treatment and removes limits on hospice benefits is a strategy that is financially feasible for health plan sponsors, insurers and Medicare. The requirement that a physician certify that a patient is expected to die within 6 months may no longer be appropriate as many conditions may entail longer survivals. In summary, case management appears to represent a compelling opportunity to improve the quality of care for those with advanced illness, and hospice benefits might be liberalized within the context of such case management without adverse impact on total costs. | | |

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| 124. Tippet AW. Reducing the incidence of pressure ulcers in nursing home residents: A prospective 6-year evaluation. *Ostomy Wound Management.* 2009;55(11):52-58.[124](#_ENREF_125) | To describe: 1) the observed effects of this quality improvement effort, and 2) results of the prospectively collected pressure ulcer (PU) incidence data. | The sample was comprised of person-months (N=9,680) in a single Midwestern skilled nursing facility. | Quantitative  Longitudinal | The clinical process used to approach the wound problem first involved establishing a wound program based on strict adherence to Agency for Health Care Policy and Research (AHCPR) guidelines with the following key tenets: 1) Forming an interdisciplinary team with strong leadership; 2) Providing intensive mandatory training for all staff on wound fundamentals use of the Braden scale, wound assessment, treatment, and prevention; and use of support services; 3) Developing simple protocols for prevention and treatment of PUs; 4) Developing a simplified wound care formulary to include only those items used in preventive and treatment protocols, with the ability to use other products on an exception basis; and 5) Evaluating equipment for pressure management, following guidelines on type of products. Effectiveness measures included PU incidence and prevalence, and cost. | 3, 5 |
| **Results** | | | **Conclusion** | | |
| Average pre-initiative incidence was 5.19%. Average post-initiative incidence was 0.73%, an 86% reduction, with an incidence of 0.06% for the program’s 4th year, a 99% reduction. These represent significant (p<0.0001) reductions in the incidence of monthly nosocomial pressure ulcers. The facility achieved its goal of zero nosocomial ulcers by May 2004, the sixth month of the program, and demonstrated a clear and permanent decline in nosocomial PU incidence following the implementation of the wound program in November 2003. Although incidence was the measure tracked, prevalence was easily computed. In the fourth year, only one acquired pressure ulcer occurred in nearly 2,000 resident-months. Based on the initial estimated 12% to 25% prevalence, this represents >99% reduction in prevalence. An unexpected and unplanned corollary benefit of this initiative was a concomitant 37% reduction in falls, discovered during quality review meetings. Falls were reduced significantly (p<0.0001) from an average of 23.1 falls per month during the April through November 2003 time period to a post-initiative average of 14.6 falls per month. How this was related to the wound initiative is not known, but the timing is highly suggestive and the reduction in falls mirrored the reduction in wounds. This initiative had two main financial costs: 1) a contract with a physician wound consultant to provide team leadership and technical assistance at $20,000/year for the first three years, then $7,200/year as time-involvement decreased; and 2) purchase of pressure support surfaces for facility-wide use with a one-time expense of $11,000. Pre-initiative expenses for skin care supplies and equipment for preventive care averaged $865 a month; these expenses averaged $665/month post-initiative implementation, a yearly savings of $2,400. The average number of nosocomial ulcers was reduced from 7.3 a month pre-initiative to 1/month post-initiative, an avoidance of 6.3 ulcers per month. Adjusting with the Consumer Price Index, a conservative estimate of medical cost increases, 2008 cost would be $1,617 per pressure ulcer per month, representing a monthly savings of $10,187 and a yearly savings >$122,000. The unanticipated reduction in falls also yielded cost savings, but these were not included in this calculation. | | | The overall impact of a PU-reduction project reduced PU prevalence and incidence of facility-acquired PU by 99%, a virtual elimination of the acquired pressure ulcers in this facility. Although this was a quality improvement program with prospective data collection procedures, a design that cannot be used to establish causality, the number of data points (nearly 10,000) make the outcomes compelling. | | |

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| 125. Uplinger N, Turkel MC, Adams PC, et al. Development of a DiaBEATes Nurse Champion program. *Diabetes Educator.* 2009;35(5):713-726.[125](#_ENREF_127) | To share an innovative educational practice for increasing the knowledge base of direct-care Registered Nurses related to diabetes management. | The sample consisted of direct care Registered Nurses (N=126) delivering diabetes education in a large urban academic hospital. | Quantitative  Qualitative  Longitudinal  Pre-Post Test Observational | A previous staff development program had been deemed ineffective, largely due to inconsistent attendance in the educational portion. In phase 1 of this study, a total of 65 registered nurses representing all practice settings and various shifts received 8 hours of education.  To accommodate all the participants, 4 sessions were  offered, and funds were provided for replacing staff to improve attendance in all phases. Phase 2 began in February 2008. Registered nurses attended a second 4-hour educational session focused on case studies of day-to-day scenarios faced by registered nurses in the practice setting. The primary focus of the course content related to care of patients in the medical-surgical units. | 1 |
| **Results** | | | **Conclusion** | | |
| Registered Nurses completed a 20-item test related to specific application of diabetes knowledge. The educators administered the test at the beginning and end of the 8-hour education session. Participation in a structured educational program has increased the registered nurses’ knowledge of diabetes management. The goal was to have no score lower than 80%. Common topics for scores below 60% included diagnosis of diabetes, the A1C test, diabetes complications, target glucose ranges, medications, and critical thinking regarding the timing of glucose monitoring and insulin administration. The Registered Nurses demonstrated lower improvement in scores in some of the sessions despite course content and presenters’ consistency for all 4 sessions. The difference in scores for those 2 sessions may result from differences in the participants’ level of experience, practice area, professional interest, or learning style. The Registered Nurses provided open-ended feedback at the end of each 8-hour session. | | | Diabetes educators will find the DiaBEATes Nurse Champion program useful for structuring educational  programs within various practice settings. The case studies are useful tools for evaluating specific application of diabetes knowledge, and may be more effective than lengthier shadowing experiences. Participation may improve with adequate advance notice of education offerings, funding for staff replacement, and communication mechanisms other than email. | | |

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| 126. Voss AMB. Incidence and duration of urinary catheters in hospitalized older adults: Before and after implementing a geriatric protocol. *Journal of gerontological nursing.* 2009;35(6):35-40.[126](#_ENREF_128) | To examine the incidence and duration of urinary catheters in acute care older adults before and after the implementation of a protocol developed to make clinicians aware of the appropriate use of catheters and the parameters for catheter removal. | The sample was comprised of elderly patients (N=187) in a single community hospital. | Quantitative  Longitudinal  Pre-Post Observational Evidence Based Performance Improvement | A review of the literature by the researcher revealed sufficient evidence to support the development of a nurse-driven protocol to reduce the use of indwelling urinary catheters. Because there is no nationally recognized standard for the use of urinary catheters in hospitalized patients, the criteria for the protocol were developed from previously published research and were approved by consensus opinion of the researcher, the medical unit’s geriatrician, and the clinical nurse specialist. The agreed-on criteria included chronic history of prolonged catheterization or suprapubic catheter, end-of-life care, aggressive treatment with diuretic medications or fluids, wound care management with incontinence, history of being difficult to catheterize, and having a Foley catheter placed by urologist. The protocol was designed as a pre-checked box directing clinicians to evaluate each patient with an indwelling urinary catheter and authorizing them to remove the catheter when patients no longer met any of the established criteria for catheter use. The protocol was presented at a monthly unit meeting and posted in several places on the unit. An explanatory e-mail was also sent to all staff members prior to actual implementation. The protocol was added to the preprinted Acute Care of the Elderly (ACE) admission order set the following month, and several follow-up e-mails were sent to staff members to remind them about the protocol and how it was to be used. | 1 |
| **Results** | | | **Conclusion** | | |
| In the post-intervention period, the total number of patients age 65 and older admitted to the medical unit and patient days were similar (99 versus 88 admissions, 519 versus 440 patient-days, respectively). Only 13 indwelling urinary catheters were newly placed. Three patients were excluded from the study because they had chronic urinary catheters in place. The medical unit nursing staff placed four indwelling urinary catheters (30.8%), and nine indwelling catheters (69.2%) were placed by the emergency department (ED) staff. The mean duration for indwelling urinary catheters in the post-intervention sample was 3.9 days, representing a 20.4% decrease from the pre-intervention sample. Catheter device-days decreased by 67.6% from 136 to 44 days (p=0.000), and the device utilization ratio decreased from 26.2% to 10% from the pre-intervention sample. Appropriateness of catheter placement decreased slightly, with 53.8% of catheters meeting the criteria for use in acute care older patients. The incidence of indwelling urinary catheters for the pre-intervention and post-intervention periods decreased from 33% to 15.3%, respectively. The difference in incidence for newly inserted indwelling urinary catheters between the two periods was statistically significant (p=0.006). The relative reduction for newly inserted indwelling urinary catheters was 53.5%. | | | This study confirmed that using a protocol to prompt clinicians to evaluate the appropriate use of indwelling urinary catheters in hospitalized older adults can significantly reduce the incidence and duration of indwelling catheterization. The results support the use of a nurse-driven geriatric protocol to identify preventable risk factors and improve the safety of hospitalized older adults. Clinical protocols are mechanisms for clinicians to provide evidence-based care to patients in ways that reduce the risk of complications and use fewer of the health care system’s limited resources. Additional measures that limit the use of indwelling urinary catheters in hospitalized older adults should be considered for inclusion in clinical protocols for older adult patients. Nurses are in a unique position to advocate patient safety by evaluating patients’ need for catheterization. | | |

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| 127. Williams K, Kukla M, Bond GR, et al. Can a nurse practitioner serve in the prescriber role on an assertive community treatment team? *American Journal of Psychiatric Rehabilitation.* 2009;12(3):205-224.[127](#_ENREF_129) | To examine the relative effectiveness of nurse-practitioner as prescriber, comparing two assertive community treatment (ACT) teams, one employing a psychiatrist and the other a nurse-practitioner. | The sample was comprised of consumers (N=95) and nurse practitioners and physicians (N=23) in a single community mental health center. | Quantitative  Qualitative  Longitudinal | The prescriber for the CASE team was a psychiatrist, while the prescriber for the CARE team was a nurse-practitioner. In this report, the authors refer to the CASE team as ACT-MD and the CARE team as ACT-NP. In general, the two teams were similar in many important respects, including administrative policies, organizational climate, treatment philosophy, and staff orientation procedures at the time of hiring. However, one key difference, aside from the role of prescriber, was the identity of the team leader. For the ACT-MD, the psychiatrist was not the team leader (a licensed social worker served in that role), whereas for the ACT-NP, the nurse-practitioner was both team leader and prescriber. | 1, 2 |
| **Results** | | | **Conclusion** | | |
| Consumers on the ACT-MD reported greater satisfaction with medication management that consumers on the ACT-NP. In addition, the two teams differed significantly on several individuals items, all favoring ACT-MD. In general, the psychiatrist was perceived as more accessible than the nurse-practitioner. However, it should also be noted that overall, consumers on both teams were very satisfied with medication management. The authors found striking differences on the DACTS between the two teams. For the total scale, the ACT-MD received a score of 4.35, indicating high fidelity, whereas the ACT-NP received a score of 3.65, suggesting a substantial departure from ACT fidelity. The ACT-MD scored higher than the ACT-NP on each of the subscales: human resources (4.3 vs. 3.4), organization (4.9 vs. 4.3), and services (4.0 vs. 3.4). | | | The authors note that this study should be examined in the context of the broader question of attending to the functions performed by staff roles on an ACT team and not simply to their credentials. The reason that the ACT model uses a multidisciplinary team is to ensure that the team has the necessary competencies to respond holistically to a range of client needs. Credentials are a proxy for practitioner competencies, but credentials to not guarantee appropriate skills, especially in light of the frequent mismatch between professional training and psychiatric rehabilitation practice, as has been well document in the literature. | | |

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| 128. Woerner L, Espinosa J, Bourne S, et al. Project !EXITO!: success through diversity and universality for outcomes improvement among Hispanic home care patients. *Nursing Outlook.* 2009;57(5):266-273.[128](#_ENREF_130) | To develop a replicable theory-based outcomes improvement model for delivery of nursing care to Hispanic patients. | The sample was comprised of Hispanic patients (N=125) receiving home care services. | Quantitative  Longitudinal  Pre-Post Observational Evidence Based Performance Improvement with Qualitative Components  (Ethnography) | Leininger’s model and the results of studies reported  in the literature were used to design the model of care,  with findings from a study by Pacquiao and colleagues  assisting in the creation of model components. Project ¡EXITO! team members used this framework to develop a multidimensional plan for delivering culturally congruent care. Data for a cohort of 125 unduplicated  Hispanic patients who received home care  services during the program implementation period  were compared to CMS data for the general population  of home care patients seen during the same period.  These data also were compared to pre-intervention findings to determine whether or not improvements were  Data pertaining to the cultural components of home  care and potential differences in practice approach—according to Hispanic and non-Hispanic nurses—were collected from 15 home care nurse/patient pairs. Audio taped interviews were conducted in patients’ homes over a 12-month period, with information obtained from informant pairs in a natural setting. The audiotapes were transcribed, some from Spanish to English, and then coded using EthnographTM software. A comprehensive multidisciplinary approach was used to assure that all aspects of the healthcare experience for Hispanic patients were considered. | 1, 2 |
| **Results** | | | **Conclusion** | | |
| The acute hospitalization rate for Hispanic patients was twice that of the overall population served by Home Care of Rochester (HCR) prior to program implementation. This percentage dropped by almost half following the culturally focused intervention, while the overall population’s rate dropped only slightly. Emergent care rates were comparable prior to program implementation and post implementation, the Hispanic subjects’ rate declined slightly while the overall population’s increased slightly. Improvement in oral medication adherence was less evident over time, with end of program percentages increasing a small amount but still remaining considerably less than for overall population. A review of care delivery records suggests that, although actual change in adherence rate was small, stabilization of medication ordering was evident over the course of the study year. Return rates for satisfaction surveys were low, ranging from 2%–32% per quarter. For all but one quarter, satisfaction rates were above the targeted 96% rate. The qualitative component of this study explored the interactions between nurses and patients and confirmed the importance of the care provider’s appreciation for the connection between health, family, religion and other factors when interacting with Hispanic patients. The findings also demonstrated the need for additional culturally focused skills development programs for non-Hispanic nurses. | | | The application of a theory of transcultural nursing, as explicated in Leininger’s Sunrise Enabler model, demonstrates (at an initial stage) encouraging evidence that this model of nursing practice holds promise for reducing healthcare disparities. Care delivery outcomes pertaining to acute hospitalization and emergency care improved over the course of the model’s implementation period to a level consistent with national benchmarks. The results of moving from a more traditional model of home care to a culturally based model of care took HCR beyond symptoms and symptom management into nursing care that incorporated all components of Leininger’s Sunrise Enabler. As Dr. Leininger, who visited Rochester, expressed to HCR’s Hispanic and non- Hispanic nurses, ‘‘As nurses, we need to refocus our practice away from ‘‘do, do, do’’ and take time to listen and care.’’ She further noted that in 5 years, the work that has begun in this initiative will have far-reaching results for the profession and will be the core for developing a fully integrated community. | | |

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| 129. Wood D, Winterbauer N, Sloyer P, et al. A longitudinal study of a pediatric practice-based versus an agency-based model of care coordination for children and youth with special health care needs. *Maternal and Child Health Journal.* 2009;13(5):667-676.[129](#_ENREF_131) | To report the results of a prospective cohort study comparing a practice-based nurse care coordinator model with Title V agency-based care coordination model. | Families (N=144) of children and youth with special health care needs (CYSHCN) at multiple pediatric primary care practices participated in this study. | Quantitative  Longitudinal  Prospective Cohort  Survey | In each of the three intervention group practices, a nurse care coordinator was physically located within the practice. The three intervention nurse care coordinators (NCCs), doctors and practice staff received training in medical home concepts through the NICHQ Medical Home Collaborative. The intervention nurses received training on integrating care coordination with other functions of the medical home. The staff of the intervention practices used the Medical Home Index to conduct a practice self-assessment. Practice staff met monthly to discuss and implement methods determined by the practice self-assessment, consistent with the medical home model of care. | 2 |
| **Results** | | | **Conclusion** | | |
| Just over 70% of the intervention group had improved scores on the Support from the Care Coordinator scale, compared to 52% of the comparison group (p=0.02). Similarly, overall satisfaction with care coordination increased for 29% of the intervention group, compared to 14% of the comparison group (p=0.03). Almost three-fourths (74%) of intervention group parents reported fewer barriers to health services at follow up, compared to just half (50%) of comparison group parents (p=0.003). Approximately the same proportion of intervention and comparison groups reported increased scores on the Help with needed services scale. The authors conducted logistic regression analyses on the four care coordination measures. After controlling for race, education, child severity of disease and overall child health status, group membership persisted as a significant predictor of improvement for three of the four care coordination ratings. The participants in the intervention group were over two-and-one-half times more likely  (p=0.02) than comparison group participants to report improved support from the care coordinator; over three times more likely (p=0.03) to report improved satisfaction with care coordination services, and two-and-one-half times (p=0.01) more likely to report reduced barriers to health services. Participants with a GED or HS diploma were much less likely to report improved support from the care coordinator compared to those with a college education ( p=0.76). Parents of children whose conditions were rated as more severe were more likely to report improvement in the same three support-coordination measures, with odds ratios ranging from 2.43 to 6.88. Intervention group participants, compared to comparison group participants, had higher ratings of pediatric services in only one area; 45% of intervention participants reported improvement in treatment by office staff compared to 29% of the comparison participants (p=0.04). Sixty percent of the intervention group and 59% of the comparison group reported improvement in connecting to outside resources. After controlling for race, education, child severity of disease and overall child health, practice type persisted as a significant predictor of improvement for only the treatment by office staff measure. | | | The authors found that care coordination integrated into pediatric practices compared to care coordination based in an external agency resulted in increased family satisfaction with the quality of care and reduced barriers to care for their CYSHCN. The practice-based care coordination model is utilized by a minority of State Title V agencies and should be considered as an alternative to agency-based care coordination. | | |

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| 130. Woodward JL. Effects of rounding on patient satisfaction and patient safety on a medical-surgical unit. *Clin Nurse Spec.* 2009;23(4):200-206.[130](#_ENREF_132) | To evaluate a routine rounding charge nurse program to lower uncertainty regarding nurse availability for response to immediate needs. | Patients (N=25) in a single hospital participated in this study. | Quantitative  Longitudinal  Pre-Post  Observational Evidence Based Performance Improvement | Research supports the premise that frequent patient rounding has a positive impact on patient satisfaction and safety. Rounding has been noted to elevate patients' certainty for their needs. When a rounding model is practiced, patients become more certain that a nurse will be available for immediate needs (assistance to the bathroom, pain interventions, or addressing questions about care).A 45-minute presentation to charge nurses introduced the evidence-based and potential benefits and value of routine rounding on patient safety and satisfaction. Unit-specific outcome measures for fall rates, patient satisfaction, and frequency of call-light use were shared with the charge nurses. Next, a routine rounding intervention process was designed for the pilot. Each 12-hour shift has a designated charge nurse. For the routine rounding intervention, the charge nurse made rounds on each patient every 2 hours during the shift. | 2, 3 |
| **Results** | | | **Conclusion** | | |
| After one-quarter of charge nurse rounding, a drop in falls and call-light frequency was noted, as well as an increase in patient satisfaction. Data were collected retrospectively from December 2006 to September 2007 and showed a continued trend in the decrease in falls and call-light frequency for this unit. In addition, patient satisfaction increased after the implementation of charge nurse rounds. Twenty-five patients on the study unit were surveyed to measure help uncertainty. Results of this survey were compared to the results found from a survey of 25 patients on a comparable unit without the rounding intervention. On the unit without rounding, only 8% of the surveyed patients were certain that their needs would be met by a caregiver, in contrast to seventy-two percent of the patients surveyed on the unit with the rounding intervention. Barriers to successfully completing rounds identified by Charge Nurses on the study unit included complicated patients taking longer than expected to address their needs and facilitating discharge and admission of other patients. | | | A routine presence of a registered nurse has promoted patient safety as seen by the declining falls scores. Patient certainty of nurse presence and the trust in the nursing care have flourished since the implementation of this model and are evidenced in the increasing patient satisfaction scores and patient surveys. | | |

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| 131. Yeung A, Johnson DP, Trinh NH, et al. Feasibility and effectiveness of telepsychiatry services for Chinese immigrants in a nursing home. *Telemedicine and e-Health.* 2009;15(4):336-341.[131](#_ENREF_133) | To investigate the feasibility and effectiveness of providing telepsychiatry services to Chinese immigrants in a nursing home. | Residents (N=8) at a single nursing home in Boston participated in this study. | Quantitative  Longitudinal  Observational Case Study | Interventions to the consulted patients included psychologicalv support via videoconferencing, psychopharmacological intervention, provision of reassurances and education to the nursing staff about the psychological intervention, and involvement of patients’ families to provide support to and contract with the patients for behavioral modifications. Outcome measures included feasibility, clinical improvement, and Charge Nurse satisfaction. | 2 |
| **Results** | | | **Conclusion** | | |
| Among the 8 subjects who received telepsychiatry followup, 6 subjects were referred to receive psychiatric interventions. The remaining 2 subjects were referred for differential diagnosis between depression and dementia (Patient with Study ID #5), and for suicide-risk assessment (patient with Study ID #6). All 6 subjects referred for psychiatric intervention were much improved at the end of their videoconference follow-up visits; these patients (or their families) and the nursing staff were highly satisfied with the  telepsychiatry visits. Patient with Study ID #5 was started on a trial treatment with an antidepressant, which was discontinued shortly afterward since the patient deteriorated after taking the antidepressant. This patient had severe cognitive deficit and gave no ratings, but her family members were satisfied with the consultation and telepsychiatry follow-up visits, and were highly satisfied with the input they received from the consultant. Patient with Study ID #6 was assessed and determined to have low suicide risk after the initial consultation and subsequent telepsychiatry follow-up visits. Nursing staff felt reassured after they received the report from the consultant, and the patient’s family and the nurses were highly satisfied with the service. Patient with Study ID #8 who declined telepsychiatry follow-ups was started on an antipsychotic medication and had some improvement in her irritability and paranoid delusions, although her symptoms continued to be detectable. She was rated to have minimal improvement, and the family and nursing staff were satisfied with the outcomes. The period it took to complete all the respective videoconference-based follow ups ranged from 30 to 60 days (mean duration 46.67±15.81), and the frequency of follow-up visits depended on the clinical needs of the patients. | | | This pilot study has demonstrated that it is possible to use telepsychiatry to provide services to minority immigrants in nursing homes. In fact, telepsychiatry could be the best means for ethnic minority elders to gain access to mental health professionals who are linguistically and culturally compatible with the minority patients. For a long time, South Cove Manor had not been able to find a bilingual and bicultural psychiatrist when their patients needed psychiatric consultations. Although many of the subjects in this study suffered from dementia and psychotic symptoms, most subjects in this study had no difficulty participating and communicating in the follow-up psychiatric visits using telecommunication. The encouraging outcomes from this study demonstrate that videoconference-based psychiatric consultations are effective in guiding and supporting nursing home staff in handling psychiatric problems of their residents. Patients, their families, and the nursing staff expressed high levels of satisfaction with the telepsychiatry based consultations. From this study, the authors have also learned first-hand the importance of a multidisciplinary approach in providing psychiatric services to the nursing home. Nurses are the essential personnel in nursing homes. All the psychiatric consultations in this study were initiated by the nursing staff, and not by the patients. | | |

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| 132. Agosta LJ. Patient satisfaction with nurse practitioner-delivered primary healthcare services. *Journal of the American Academy of Nurse Practitioners.* 2009;21(11):610-617.[132](#_ENREF_134) | To evaluate patient satisfaction with nurse practitioner (NP) healthcare services provided through an employer-sponsored clinic to a community of employees and his or her family members. | Patients or family members 18 years or older (N=297) served at a single, not-for profit hospital employer-sponsored clinic in the Southern U.S. participated in this study. | Quantitative  Cross- Sectional | The Nurse Practitioner Satisfaction Survey (NPSS) was created specifically for this study and is composed of 28 Likert-type items compiled with the intent of including concepts viewed as relevant and instrumental in influencing overall patient satisfaction with care. Individual survey items focused on specific attributes and dimensions occurring at the level of the patient and NP interface hypothesized to theoretically serve as determinants of the concept of general patient satisfaction with NP-delivered health care. These included convenience, accessibility, competence, knowledge, trust, receptivity, openness, and interpersonal communication. The anonymous paper survey was distributed at the time of the patient appointment and additionally included items related to patient demographics, current and previous health status, past interactions with healthcare providers, and general opinion of health care and education received in the past. | 2 |
| **Results** | | | **Conclusion** | | |
| The mean general satisfaction score for the sample was determined to be 86.86 (N=288). No statistically significant differences in patient satisfaction scores by gender at the .05 level of significance were determined (t=0.599, p=0.549). Mean satisfaction scores of Caucasian subjects (M=86.99, SD=7.75) were noted to exhibit no statistically significant differences compared with those of non-Caucasians (M=86.46, SD=7.59) at the .05 level of significance (t=0.466, p=0.642). There were no statistically significant differences determined in scores between age groups at the .05 (two tailed) level, 1.707 (4, 84.264), p=0.156. Mean satisfaction scores were determined to be highly significant for differences among the various marital status groups, 7.952 (4, 20.353), p≤0.001. Post hoc analysis indicated significant differences between the ‘‘Single Never Married’’ (M=83.34, SD=12.828) and the ‘‘Married/Cohabitating’’ (M=87.66, SD=6.240) groups (p=0.022, SE=1.268). Married and cohabitating subjects reported statistically significant higher satisfaction with NP-delivered primary healthcare services at the .05 level of significance than did those who were single and never married (M=87.66, p=0.02.) Of the various categories of employment, the highest mean satisfaction scores were noted for the ‘‘PRN’’ employee group (N=21, M=88.33, SD=2.708), while the lowest were noted for the ‘‘Part time’’ employee group (n=21, M=85.64, SD=4.509). Although mean satisfaction scores differed by employment type, none of the demonstrated differences were statistically significant at the .05 level, F=0.460(4, 275), p=0.765. A similar lack of statistical significance was also noted in a comparison of group mean satisfaction scores by degree of reported illness, F=1.046(3, 276), p=0.373. | | | Results demonstrated overall high levels of general satisfaction with primary healthcare services delivered by an NP among various demographic parameters. Because this study, conducted in an employer-sponsored onsite occupational setting, demonstrated favorable patient satisfaction, expansion of the concept of onsite NP primary care delivery to various other business, industrial, academic, and professional occupational settings with further validation of patient satisfaction in such venues is recommended. | | |

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| **Citation** | **Study Aim** | **Population/ Setting** | **Study Design** | **Methods** | **Outcome Measures**  1=care processes  2=patient experience  3=patient health indices  4=quality of life  5=cost |
| 133. Aiken LH, Clarke SP, Sloane DM, et al. Effects of hospital care environment on patient mortality and nurse outcomes. *Journal of Nursing Administration.* 2009;39(7-8 SUPPL.):S45-S51.[133](#_ENREF_135) | To analyze the net effects of nurse practice environments on nurse and patient outcomes after accounting for nurse staffing and education. To examine whether better hospital nurse care environments are associated with lower patient mortality and better nurse outcomes independently of nurse staffing and the education of the registered nurse (RN) workforce in hospitals. | The sample was comprised of surgical patients (N=232,342) and direct care nurses (N=10,184) in 168 Pennsylvania hospitals. | Quantitative  Cross-  Sectional | The Nursing Work Index was used to measure care environments, outcome measurement included nurse job satisfaction, burnout, intent to leave, and reports of quality of care as well as mortality and failure to rescue patients. The study was unique because it included consistently collected survey data regarding the quality of nurse practice environments in hospitals unavailable in any other data source. Furthermore, the inclusive sampling design did not allow hospitals to selectively opt out, which strengthens the generalizability of its results. | 1, 3 |
| **Results** | | | **Conclusion** | | |
| The care environment and nurse staffing had significant effects on burnout and job dissatisfaction, although only the care environment had a significant effect on intentions to leave. In fully adjusted models, the odds of nurses being burned out, being dissatisfied with their jobs, and intending to leave were lower by 24% (i.e., (1-0.76) x 100), 25%, and 13% in hospitals in the mixed category relative to the poor category and in the better category relative to the mixed one. The results of the logistic regression models allowed us to determine the effect of moving from better to poor staffing by squaring the odds ratios. Therefore, nurses working in the hospitals with better care environments have odds on experiencing these deleterious outcomes, which were 24% (i.e., (1-0.872) x 100) to 42% lower than the odds for nurses working in the hospitals with the poor environments. In addition, even after controlling for the effects of care environments, the odds of nurses reporting high burnout or dissatisfaction increased by roughly one-fifth and one-tenth, respectively, with each increase of 1 patient per nurse in mean workloads in their hospitals. Nurses in hospitals with better care environments were also much less likely to provide negative assessments of the care in their hospitals. The odds on nurses reporting concerns with patient care quality were between 42% and 69% lower in hospitals with better care environments than in hospitals with poor ones. Care environments, nurse staffing, and nurse education were associated with 30-day mortality and failure to rescue, both individually and jointly, in models controlling for patient and hospital characteristics (in the case of the effect of the care environment on failure to rescue, the association was marginally significant, p=0.06). In the final model, taking all patient and nursing factors into consideration, the likelihood of patients dying within 30 days of admission was 14% lower in hospitals with better care environments than in hospitals with poor care environments (i.e., (1-0.932) x 100). The odds on patients dying in hospitals with better care environments were lower by 14% than in hospitals with poor ones. The odds on patients dying in hospitals with an average workload of 8 patients per nurse is 1.26 times greater than in hospitals with mean workloads of 4 patients per nurse. The odds ratio of 0.96 associated with nurse education indicates that each 10% increase in the proportion of nurses with bachelor of science in nursing (BSN) was associated with a 4% decrease in risk of death. By extension, the odds of patients dying in hospitals in which 60% of the nurses held BSN versus hospitals in which 20% (or 40% fewer) of the nurses were BSN prepared would be lower by 15% (i.e., (1-0.964) x 100). | | | The analyses reported here suggest that nurse leaders have at least 3 major options for improving nurse retention and patient outcomes: improving RN staffing, moving to a more educated nurse workforce, and improving the care environment. The best present example of care environments that support professional nurse practice are magnet hospitals. Emerging research demonstrates that hospitals that implement the blue print for American Nurses Credentialing Center Magnet designation achieve significant improvements in their practice environments. In this study, the authors were able to demonstrate that hospitals with even some of the features of magnet hospitals (investments in staff development, quality management, frontline manager supervisory ability, and good relations with physicians) are associated with better nurse and patient outcomes. Findings show that each of the 3 options for improving outcomes, improving nurse staffing, education, and the care environment contributes independently to better patient outcomes, and maximizing all 3 would seem to hold the greatest promise for achieving the best outcomes. | | |

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| 134. Anderson KA, Taha RD, Hosier AF. Know thy residents: An exploration of long-term care nursing staff's knowledge. *Research in Gerontological Nursing.* 2009;2(1):69-76.[134](#_ENREF_136) | To gauge the knowledge levels of nursing staff, to examine whether disparities exist in knowledge levels according to knowledge type (e.g., personal information, medical information) and job type (e.g., registered nurse (RN) versus nursing assistant [NA]), and to discuss targeted interventions that might be effective in augmenting knowledge levels in long-term care settings. | The sample consisted of nursing staff-resident dyads (N=199) in 59 randomly selected assisted living and nursing homes in Kentucky and was part of a larger study on quality of life in long-term care. | Quantitative  Cross- Sectional | Because this study was exploratory in nature, the measures used to gauge the knowledge levels of nursing staff consisted of four simple items that were intentionally broad in scope. Nursing staff were asked the following questions about the specific resident(s) for whom they provided care: How knowledgeable are you regarding: 1) the resident’s life and occupation before admission? 2) the resident’s family? 3) the resident’s tastes and interests? 4) the resident’s medical condition and care plan? Items 1 through 3 were designed to gauge nursing staff’s knowledge regarding the personal identity of residents (i.e., humanistic knowledge). Item 4 was designed to gauge nursing staff’s knowledge of the resident’s specific diagnoses and the prescribed actions designed to meet specific care needs (i.e., scientific knowledge). Responses to each of the four items were recorded on a 4-point Likert scale where 1 = very well, 2 = well, 3 = some, and 4 = not at all. | 1 |
| **Results** | | | **Conclusion** | | |
| In the first research question, researchers asked whether nursing staff had a basic working knowledge regarding residents’ histories, families, interests and preferences, and medical conditions and care plans. Again, basic working knowledge was defined in this study as having at least some knowledge regarding the different aspects of residents’ lives. The authors found that a significant proportion (p<0.05) of nursing staff did not have a basic working knowledge regarding the lives of the residents in their care. When asked about how well they knew about the life and occupation of each specific resident prior to admission, 33.2% of the participants responded not at all (overall mean response=2.1, SD=1). When asked about their knowledge levels regarding residents’ family members, 22.6% of the overall sample responded not at all (overall mean response=2.3, SD=1). When asked how well participants knew each specific resident’s tastes and interests, 7.5% of the overall sample responded not at all (overall mean response=2.8, SD=0.9). Finally, when asked how well participants knew each specific resident’s medical conditions and care plans, 10.1% of the overall sample responded not at all (overall mean response=2.3, SD=1). The second research question queried whether differences would exist in levels of knowledge according to job type. The authors found that no significant differences were found between the different levels of nursing staff regarding knowledge of residents’ lives and occupations (χ2=1.927, p=0.382), family members (χ2=0.563, p=0.755), and tastes and interests (χ2=2.691, p=0.260). Significant differences were found, however, between different levels of nursing staff regarding their knowledge of residents’ medical conditions and plans of care (χ2=20.620, p< 0.001). RNs and LPNs were found to have significantly higher levels of knowledge about residents’ medical conditions and care plans than NAs. | | | The findings of this study suggest that a significant portion of nursing staff in long-term care facilities lack important information about the residents under their care. This may be due to information not being collected adequately or not being disseminated effectively. We offer simple steps, such as ensuring every level of nursing staff have access to residents’ medical charts, to enhance holistic care. Nursing staff must have scientific, as well as humanistic, knowledge of the residents under their care. The findings from this study paint a rather troubling picture of the state of knowledge of nursing staff in long-term care and indicate that these mandates have yet to be fully answered. Rather than serving as an indictment, these findings should stand as a direction marker, guiding long-term care facilities toward change and improvement. Through relatively simple and cost-effective measures, facilities may be able to improve the collection and dissemination of information about residents’ lives. In doing so, nursing staff may be better equipped to provide for the needs of residents and to meet both the scientific and humanistic callings of the nursing profession. | | |

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| 135. Apker J, Propp KM, Zabava Ford WS. Investigating the effect of nurse-team communication on nurse turnover: Relationships among communication processes, identification, and intent to leave. *Health Communication.* 2009;24(2):106-114.[135](#_ENREF_137) | To investigate the relationships among nurse–team communication, organizational identification, team identification, and turnover intent and to identify particular nurse–team communication processes that influence nurse turnover. | Nurses (N=201) from 12 units in a single Midwestern hospital, participated in this study. | Quantitative  Cross- Sectional | The Nurse–Team Communication Inventory (NTCI) is a  65-item measure developed by the research team to assess patient-care team members’ perceptions of nurses’ communication with other team members. The survey instrument consisted of scales measuring  nurse–team communication, organizational and team identification, and intent to leave. Scales for a different investigation were also included in the survey. Psychometric validation of the instrument was conducted. | 1 |
| **Results** | | | **Conclusion** | | |
| Only promoting team synergy was significantly related to intent to leave, and this relationship was inverse (ß=−0.30), accounting for 6.4% of the variance in intent to leave. Promoting team synergy was a significant predictor of organizational identification (ß=0.25, SE=0.08), F(1, 198)=13.60, p ≤ 0.01. Promoting team synergy was also a significant predictor of team identification (ß=0.34, SE=0.08), F(1, 198) = 37.97, p≤0.01. Promoting team synergy accounted for 4.5% and 16% of the variance in organizational and team identification, respectively. To examine the two forms of identification as potential mediating variables, they were separately regressed with promoting team synergy onto intent to leave. Organizational identification had a significant negative relationship with intent to leave (ß=−0.40), and adding it improved the amount of variance accounted for in intent to leave as compared to promoting team synergy as a sole predictor (Δr2= .17, p<0.01). Although the unique variance accounted for by team synergy declined, it was still a significant predictor of intent to leave (ß=−0.16). Team identification was significantly negatively related to intent to leave (ß=−0.23), and its inclusion in the model decreased the amount of variance accounted for by intent to leave as compared to promoting synergistic team processes as a predictor by itself (Δr2=−0.05, p<0.01). The unique variance accounted for by promoting team synergy declined when team identification was added to the model, but it was still a significant predictor of intent to leave (ß=−0.17). The communication practices that make up promoting team synergy were subjected to regression analyses using the same three steps to test identification variables as potential mediators. Only mentoring peers was a significant predictor of intent to leave, and the relationship was inverse, as expected (ß=−0.30). Mentoring peers was a significant predictor of organizational identification (ß=0.28, SE=0.07), F(1, 196)=16.81, p≤0.01. Mentoring peers was also a significant predictor of team identification (ß=0.42, SE=0.06), F(1, 196)=41.96, p≤0.01. Mentoring peers accounted for 8% and 18% of the variance in organizational and team identification, respectively. Organizational identification was a significant predictor of intent to leave (ß=−0.41), and its addition to the model accounted for a significant additional amount of variance (Δr2=0.15, p<0.01). Mentoring peers did not remain a significant predictor when organizational identification was added (ß=−0.16). | | | In today’s healthcare system, in which team-based organization is widespread and work environment factors play a role in nurse retention, more complex understandings of how team communication affects nurse intent to leave are necessary. The authors found that nurses are less likely to leave their jobs or organizations if they are members of patient-care teams in which nurses engage in more synergistic communication. In addition, nurses who enact synergistic team discourse may actively foster work settings that promote nurse retention, nurse communication builds and maintains team synergy and is instrumental to constructing workplace identifications that influence whether nurses stay or leave their organizations. Lastly, the authors found that mentoring communication is a key communication behavior that creates nurses’ organizational and team identifications, and those attachments mediate nurses’ intent to leave. | | |

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| **Non-experimental studies (N=97)** | | | | | |
| **Citation** | **Study Aim** | **Population/ Setting** | **Study Design** | **Methods** | **Outcome Measures**  1=care processes  2=patient experience  3=patient health indices  4=quality of life  5=cost |
| 136. Ayalon L, Arean P, Bornfeld H, et al. Long term care staff beliefs about evidence based practices for the management of dementia and agitation. *International Journal of Geriatric Psychiatry.* 2009;24(2):118-124.[136](#_ENREF_138) | To evaluate existing beliefs about evidence based practices (EBP) for the management of Alzheimer's disease (AD) and agitation among long term care (LTC) staff and to evaluate the contribution of demographic and attitudinal variables to LTC staff beliefs about these EBP. | The sample was comprised of staff members (N=371) in 10 U.S. long-term care facilities. The sample included primarily paraprofessional caregivers (227; 61%), followed by administrators/owners (42; 11%), social workers (18; 15%), nurses (16; 4%), and activity staff (15; 4%). The majority of the sample was Asian (208; 56%) and 46% (172) reported that English was their native language). | Quantitative  Cross-Sectional | This study is part of the Senior Behavioral Health  Services project (SBHS) a Substance Abuse and Mental Health Services Administration initiative to disseminate evidence based knowledge regarding the management of depression and agitation in LTC. Data were collected in community workshops and a conference on assisted living facilities delivered specifically for LTC staff. At all sites, data were collected during the first meeting with staff, prior to the first training session in agitation and/or depression management. A social worker approached staff members prior to training and offered them to complete the measure. All levels of staff were asked to complete the forms in order to gain a broad perspective on staff knowledge. An existing tool was adapted for use in this study; psychometric data is available from the authors. | 1 |
| **Results** | | | **Conclusion** | | |
| Significant professional group differences were found on all three EBP domains (F isolation and supervision [317,5]=21.75, p<0.001; F family role [351,5]= 2.85, p=0.01; F treatment effectiveness [323,5]= 6.68, p<0.001). Relative to all other professional groups, paraprofessional caregivers reported greater beliefs in the ability of physical or chemical restraint to manage AD and agitation (F[5]=6.68, p<0.001). They were more likely to disregard the role of the family in the management of AD (F[5]=2.85, p=0.01) and to believe in intense supervision and isolation of residents as effective interventions (F[5]=21.75, p<0.001). Professional affiliation, ethnicity, educational level, years in the United States, number of years of speaking English, experience with older adults, sense of helplessness, work preferences, and beliefs about the normality of AD and agitation were all associated with beliefs about isolation and supervision of AD residents. Professional affiliation, ethnicity, age, level of education, years in the United States, number of years of speaking English, sense of helplessness, work preferences, stigma of AD and agitation, and beliefs in the normality of AD and agitation were all associated with beliefs about the role of the family in the management of AD and agitation. Those of lower level of education, those who spent less years in the United States, those who had a greater sense of helplessness, those who expressed a preference towards not working with residents with agitation and AD, and those who expressed stigma about AD and agitation, reported a lesser preference towards the involvement of family members in the management of AD and agitation. Professional affiliation, ethnicity, gender, education, years in the United States, number of years of speaking English, comfort level associated with the work, sense of helplessness, and beliefs about the normality of AD and agitation all were associated with beliefs about chemical and physical restraint. | | | Paraprofessional caregivers, ethnic minorities, and people of lower educational level are most at need for educational activities about AD and neuropsychiatric symptoms. Educational efforts geared towards changing the belief system of LTC staff should target not only EBP but also information about AD and agitation as conditions that are deviant from the normal aging process, yet non-stigmatizing. It is expected that following EBP will empower staff and improve staff motivation to work with residents with AD and agitation. | | |

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| **Non-experimental studies (N=97)** | | | | | |
| **Citation** | **Study Aim** | **Population/ Setting** | **Study Design** | **Methods** | **Outcome Measures**  1=care processes  2=patient experience  3=patient health indices  4=quality of life  5=cost |
| 137. Bacon CT, Hughes LC, Mark BA. Organizational influences on patient perceptions of symptom management. *Research in Nursing and Health.* 2009;32(3):321-334.[137](#_ENREF_139) | To examine the relationships of contextual and structural attributes of medical, surgical, and medical–surgical nursing units and patient characteristics to patients’ evaluation of the extent to which nurses met their expectations for symptom management. | The study was a secondary analysis of data obtained from the Outcomes Research in Nursing Administration Project –II. Data were collected during 2003-4 on 278 nursing units in each of 143 U.S. acute care hospitals. | Quantitative  Cross- Sectional  Secondary Data Analysis | Structural Contingency Theory was the theoretical model. Organizational demographics were collected from the American Hospital Association Annual Survey. Registered nurses (RNs) with more than 3 months of experience on their unit completed three questionnaires over a period of 6 months. Each of the questionnaires consisted of a different battery of instruments- such as the Nursing Expertise and Commitment to Care Scale, patient acuity scale, work complexity scale, Control over Nursing Practice Scale, Symptom Distress Scale, amongst others. In addition to the RN participants, 10 patients on each unit, 18 years or older who had been hospitalized for at least 48 hours were able to speak and read English and were not scheduled for immediate discharge were randomly selected to complete a questionnaire in which they rated the extent to which nurses were meeting their expectation for symptom management. | 1,2,3 |
| **Results** | | | **Conclusion** | | |
| Hospital size, teaching status, and illness severity were significantly (p<0.05) related to unit capacity, with higher levels of unit capacity among larger hospitals, teaching hospitals, and those with more severely ill patients. Hospital life cycles characterized by declining or unstable admissions were significantly but negatively related to unit capacity. None of the nursing unit characteristics significantly predicted unit capacity. The model explained 25.4% of the variance in unit capacity. Hospital life cycle was a significant predictor of work engagement. Nurses in hospitals classified as growers reported significantly lower levels of work engagement than nurses in other hospitals. The only other significant predictor of work engagement was work complexity, with higher levels of complexity associated with lower levels of work engagement. Variables in the model explained 9.7% of the variance in work engagement. Nurses in Magnet hospitals reported significantly better work conditions than did their non-Magnet counterparts. Greater availability of support services on the unit was also associated with better work conditions; greater work complexity on the unit was associated with poorer work conditions. Hospital life cycle was associated with work conditions in that nurses in hospitals with a declining pattern of admissions reported poorer work conditions than did their counterparts. The model explained 25.8% of the variance in work conditions. Patient age was significantly associated with patient perceptions that their expectations for symptom management were met; older patients reported better symptom management. None of the other patient characteristics, however, was associated with patients’ perceptions of symptom management. The only structural variable significantly associated with patients’ expectations for symptom management was working conditions. Patients were more likely to state that their expectations for symptom management were met on units where the nursing workgroup reported better work conditions. The model explained 13.6% of the variance in symptom management. | | | This study highlights the importance of work conditions that support full utilization of RNs in the management of patients’ symptoms. Further studies are needed to identify organizational contexts and structures that foster the delivery of hospital care that is consonant with patients’ expectations for symptom management. | | |

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| **Non-experimental studies (N=97)** | | | | | |
| **Citation** | **Study Aim** | **Population/ Setting** | **Study Design** | **Methods** | **Outcome Measures**  1=care processes  2=patient experience  3=patient health indices  4=quality of life  5=cost |
| 138. Bacon CT, Mark B. Organizational effects on patient satisfaction in hospital medical-surgical units. Journal of Nursing Administration. 2009;39(5):220-227[138](#_ENREF_140) | To examine the relationships between hospital context, nursing unit structure, and patient characteristics and patients’ satisfaction with nursing care in hospitals. | The study was a secondary analysis of data obtained from the Outcomes Research in Nursing Administration Project-II. The sample consisted of patients (N=2,720) and registered nurses (N=3,718) in 278 medical-surgical units in 146 U.S. hospitals. | Quantitative  Cross- Sectional  Secondary Data Analysis | Registered nurses with more than 3 months of experience on their unit completed 3 questionnaires, each with a different set of instruments, over a 6-month period. In addition to the RN participants, 10 patients on each unit, 18 years or older who had been hospitalized for at least 48 hours were able to speak and read English and were not scheduled for immediate discharge were randomly selected to complete a questionnaire on their satisfaction with their nursing care. Hospital environment variables, nursing unit environment variables, patient variables, organizational structure, organizational effectiveness and patient satisfaction were assessed using multiple instruments and organizational data. | 1,2 |
| **Results** | | | **Conclusion** | | |
| Based on unstandardized regression coefficients, the authors found higher levels of unit capacity in larger hospitals, teaching hospitals, and those with more severely ill patients but lower levels of unit capacity in hospitals characterized by declining or highly unstable admission patterns. Magnet status was not associated with unit capacity. None of the nursing unit characteristics significantly predicted unit capacity. The only hospital-level variable to predict work engagement was organizational life cycle, with lower levels of work engagement in hospitals classified as growers. The only nursing unit characteristic associated with work engagement was work complexity, which was negatively associated with work engagement. Selected hospital- and nursing unit level variables predicted work conditions. Nurses in hospitals with a declining pattern of admissions reported poorer work conditions than did nurses in other hospitals. Higher levels of work complexity were also associated with poorer work conditions. In contrast, nurses in Magnet hospitals reported significantly better work conditions than did their counterparts in non-Magnet hospitals. Greater availability of support services on the unit was also associated with better work conditions. An initial model regressing patient satisfaction on unit capacity, work engagement, work conditions, and patient characteristics fit moderately well (χ2=49.7, p=0.009; CFI=0.92, TLI=0.79, RMSEA=0.05), and a modification index suggested that the model could be improved by including the availability of support services as a regressor. Using the suggested modification, the authors found that support services and work engagement were significantly related to higher levels of patient satisfaction. In addition, patient age, health status, and symptom management were all significantly positively related to higher levels of patient satisfaction. | | | This study is one of only a few to examine whether organizational, nursing unit, and patient characteristics influence patient satisfaction. In particular, the findings show that work engagement and availability of support services have a significant impact on patient satisfaction, a finding that should be considered by nurse executives in designing the best systems of care. The findings also reinforce the importance of effective symptom management and the critical role that nursing care plays in achieving patient satisfaction. | | |

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| **Non-experimental studies (N=97)** | | | | | |
| **Citation** | **Study Aim** | **Population/ Setting** | **Study Design** | **Methods** | **Outcome Measures**  1=care processes  2=patient experience  3=patient health indices  4=quality of life  5=cost |
| 139. Baier R, Butterfield K, Patry G, et al. Identifying star performers: The relationship between ambitious targets and nursing home quality improvement. *Journal of the American Geriatrics Society.* 2009;57(8):1498-1503.[139](#_ENREF_141) | To analyze if nursing homes whose staff select the most ambitious targets (reflecting large improvement over their current performance) may be more successful in their related quality improvement efforts than homes with less-ambitious targets (reflecting lesser improvement). | Analysis of 7,091 Medicare or Medicaid certified nursing homes who set STAR targeted in 2005 or 2006 for two quality measures: physical restraint and pressure ulcers | Quantitative  Longitudinal  Secondary data analysis | The Web-based STAR tool is secure Web based tool that helps nursing home leadership select annual performance goals for a subset of publicly reported quality measures. Nursing home staff log into their home’s account to view longitudinal performance on a subset of six quality measures, select quality improvement targets, and track improvement over time. As described earlier, staff can select targets using a number of data-driven approaches, including state averages, national averages, percentage improvement, and ABCs used in the calculation of goals for Healthy People 2010. Setting targets using STAR is completely voluntary. Improvement over time was calculated using multiple quarters of data. | 2 |
| **Results** | | | **Conclusion** | | |
| Of the 7,030 nursing homes for which staff set targets for the proportion of residents physically restrained daily (physical restraint targets), 2,131 (30.3%) set ambitious targets, and 3,055 (43.5%) set less-ambitious targets. Of the 7,019 nursing homes for which staff set targets for the proportion of high-risk residents with pressure ulcers (pressure ulcer targets), 1,977 (28.2%) set ambitious targets, and 3,370 (48.0%) set less-ambitious targets. Nursing homes with ambitious physical restraint targets were more likely to be hospital based than those with less-ambitious targets set for this quality measure (9.0% vs. 7.0%, p<0.01). Nursing homes with ambitious targets demonstrated significantly greater relative improvement for the associated quality measure than those whose staff set less ambitious targets. Nursing homes with ambitious physical restraint targets achieved a mean relative improvement of 20.4% for that measure, compared with 1.7% for homes with less-ambitious physical restraint targets (p<0.006). Similarly, nursing homes whose staff set ambitious pressure ulcer targets achieved a mean relative improvement of 12.9%, compared with 1.6% for homes with less-ambitious pressure ulcer targets (p<0.005). Additionally, for both quality measures, homes setting ambitious targets achieved significantly greater mean absolute improvement than homes with less-ambitious targets (physical restraint targets: 1.1% vs. 0.1%, p<0.001; pressure ulcer targets: 1.8% vs. 0.2%, p<0.001). Though the differences between nursing homes with ambitious and those with less-ambitious targets are small, they reflect modest but statistically significant between-group differences that would affect large numbers of nursing home residents. On average, nursing homes with ambitious targets demonstrated 11 times as much improvement for the physical restraint quality measure and 9 times as much improvement for the pressure ulcer quality measure as those with less ambitious targets. By the end of the 1-year observation period, target setting for these clinical topics was associated with 2,576 fewer residents at risk for developing pressure ulcers and 4,321 fewer residents being physically restrained daily. | | | These results build upon previous analyses demonstrating that targets set using the Web-based STAR tool are associated with better performance. Setting performance goals is simple but important, and the fact that ambitious targets are associated with nearly 10 times more improvement than less-ambitious targets at 1 year indicates that target values are also predictors of future quality improvement success. With limited federal and local resources to assist providers in improving their quality, target values may be a ‘‘flag’’ for nursing homes committed to quality improvement efforts and with the organizational capacity to improve their performance. Federal and state money is allocated to provide technical assistance to nursing homes to help them improve their quality, but with more than 16,000 nursing homes in the United States, it is difficult to allocate these resources properly. Using ambitious target setting as a proxy for motivation and organizational commitment may be used as a tool to help focus these limited resources. | | |

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| **Non-experimental studies (N=97)** | | | | | |
| **Citation** | **Study Aim** | **Population/ Setting** | **Study Design** | **Methods** | **Outcome Measures**  1=care processes  2=patient experience  3=patient health indices  4=quality of life  5=cost |
| 140. Bair MJ, Matthias MS, Nyland KA, et al. Barriers and facilitators to chronic pain self-management: A qualitative study of primary care patients with comorbid musculoskeletal pain and depression. *Pain Medicine.* 2009;10(7):1280-1290[140](#_ENREF_142) | To identify perceptions of barriers and facilitators to effective self-management of chronic musculoskeletal pain for patients also experiencing  comorbid pain and depression. | The sample was comprised of 18 patients in Veterans Affairs (VA) and university-based primary care clinics in Indiana. | Qualitative  Cross-Sectional  Focus Group | Four focus groups of patients recruited after their participation in a randomly controlled trial called: “Stepped-Care for Affective Disorders and Musculoskeletal Pain (SCAMP)”. This study was meant to complement the quantitative data collected during the SCAMP study to help explain reasons underlying the impact of the intervention and examine why particular aspects may have worked and did not work.  Thematic content analysis was used. | 2,3,4 |
| **Results** | | | **Conclusion** | | |
| Barriers to pain self-management included: 1) lack of support from friends and family; 2) limited resources (e.g., transportation, financial); 3) depression; 4) ineffectiveness of pain-relief strategies; 5) time constraints and other life priorities; 6) avoiding activity because of fear of pain exacerbation; 7) lack of tailoring strategies to meet personal needs; 8) not being able to maintain the use of strategies after study completion; 9) physical limitations; and 10) difficult patient-physician interactions. Facilitators to improve pain self-management included 1) encouragement from nurse care managers; 2) improving depression with treatment; 3) supportive family and friends; and 4) providing a menu of different self-management strategies to use. | | | This study identified a variety of patient perceived barriers and facilitators to self-management to relieve chronic musculoskeletal pain. Future studies should consider ways to capitalize on the facilitators identified while at the same time addressing the barriers to pain self-management. | | |

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| **Non-experimental studies (N=97)** | | | | | |
| **Citation** | **Study Aim** | **Population/ Setting** | **Study Design** | **Methods** | **Outcome Measures**  1=care processes  2=patient experience  3=patient health indices  4=quality of life  5=cost |
| 141. Becker H, Stuifbergen A, Taxis C, et al. The use of goal attainment scaling to facilitate and assess individualized change in a wellness intervention for women with fibromyalgia syndrome. *Journal of Holistic Nursing.* 2009;27(4):232-240.[141](#_ENREF_54) | To determine if the majority of women completing the Lifestyle Counts intervention would achieve or exceed their self-identified health promotion goals at the conclusion of the intervention. | Female participants (N=92) of a holistic health promotion intervention were recruited to participate. | Quantitative  Longitudinal | Lifestyle counts, an adaptation of the Wellness Intervention for Women with Multiple Sclerosis program, was delivered in a small group setting in 8 weekly 2-hour sessions to 10 cohorts over a 30-month period. After completing the education sessions of Lifestyle counts, the participants were asked to finalize 2-4 specific goals. Over the next 3 months, a nurse facilitator used motivational interviewing techniques to encourage progress towards the goals. A Goal Attainment Scale was used to assess progress. | 2, 3, 4 |
| **Results** | | | **Conclusion** | | |
| A total of 21 participants in this sample set two goals; 41 set three goals; 30 set four goals. Women were most likely to set goals in the area of Physical Activity (87 goals), followed by Nutrition (74 goals), Lifestyle Adjustment (69 goals), and Stress Management (55 goals). Six individuals also set goals in the areas of relationship/Intimacy, and five women set Health Management goals. Because so few women set goals in those two areas, these goals were dropped from the analyses described here. The percentage of women who achieved or exceeded their goals (the zero point on their Goal Attainment Scaling [GAS] scales) rose markedly from the end of the classes throughout the motivational telephone follow-up periods. Their attainment peaked at 5 months (conclusion of the phone follow-up), then decreased at 8 months. The biggest declines were in Stress Management and Physical Activity. Nevertheless, 60% or more of respondents continued to report behaviors at or above the stated goal levels in Lifestyle Adjustment, Stress Management, and Nutrition, at the last data collection point. Even in Physical Activity, the group’s GAS scores never returned to where they had been prior to the intervention at baseline. The findings change over time in average GAS scores for those with complete data for all time periods (n=56 for Lifestyle Adjustment, n=73 for Physical Activity, n=59 for Nutrition, and n = 50 for Stress Management). The group’s average GAS scores were higher at the end of classes (T2) than what they retrospectively estimated them to be prior to the classes (T1). Average scores continued to rise and were highest at the fourth (5 months) data collection point, which corresponded to 12 weeks following the intervention classes and the end of the telephone support. By the fifth (8 months) data collection point, average scores declined in all areas except Lifestyle Adjustment. | | | Findings from this study may be useful to any nurse working with patients when the goal is to encourage lifestyle changes that promote healthy living and a holistic mind–body–spirit balance. Engaging in collaboration with patients in goal setting, guiding the patient in setting realistic measurable goals using GAS, and building patient self-efficacy through emphatic listening and encouragement empowers patients to make important changes that promote health. | | |

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| **Non-experimental studies (N=97)** | | | | | |
| **Citation** | **Study Aim** | **Population/ Setting** | **Study Design** | **Methods** | **Outcome Measures**  1=care processes  2=patient experience  3=patient health indices  4=quality of life  5=cost |
| 142. Benkert R, Hollie B, Nordstrom CK, et al. Trust, mistrust, racial identity and patient satisfaction in urban African American primary care patients of nurse practitioners. *Journal of Nursing Scholarship.* 2009;41(2):211-219.[142](#_ENREF_143) | To describe patient and provider demographics and the length of the relationships, to describe the levels of cultural mistrust, medical mistrust, racial identity attitudes, and satisfaction with nurse practitioner (NP)-delivered primary care from three different clinics, and to analyze relationships among selected client singularity variables (cultural mistrust, medical mistrust, and racial identity), interaction variables (trust of providers, primary-care visit data), and outcome variables (patient satisfaction) in African Americans receiving care from NPs. | Community dwelling African-American adults (N=100) from multiple primary care sites participated in this study. | Quantitative  Cross- Sectional  Descriptive-correlational | Participants were recruited by an African American research assistant. Following their scheduled appointment with their NP, the participants completed the Cultural Mistrust Inventory; Group Based Medical Mistrust Scale; Black Racial Identity Attitude Scale, Trust in Physician Scale; Michigan Academic Consortium Patient Satisfaction Questionnaire and provided demographic and primary care data. All of the items were read to participants to avert literacy concerns. | 2 |
| **Results** | | | **Conclusion** | | |
| The theoretical model indicated a complex view of African American patients’ perspectives on NPs. Participants simultaneously held moderate cultural mistrust of European American providers and mistrust of the health care system, and high levels of trust and satisfaction with their NPs. One racial identity schema (conformity) and trust of NP providers explained 41% of variance in satisfaction. Participants reported moderately high means on the Trust in Provider Scale (TPS; M=4.08, SD=0.48; range 2–5) and Michigan Academic Consortium-Patient Satisfaction (MAC-PS) scales (M=4.31, SD=0.41; range 3–5) and scored in the neutral range on the Cultural Mistrust Inventory (CMI; M=3.76, SD=0.71; range 1–6) and the Group-Based Medical Mistrust Scale (GBMMS; M=2.49, SD=0.57; range 1–4).. Participants had moderately high means on the Internalization Black Racial Identity Attitudes Sub- Scales (BRIAS; M=3.83, SD=0.35; range 2–5) and Emersion BRAIS (M=3.47, SD=0.73; range 2–5) and in the mid-range (M=2.66, SD=0.45; M=2.40, SD=.50; M=2.37, SD=0.37); range 1–4 for all) for the other subscales, Immersion, Dissonance, and Conformity, respectively. The client singularity variables showed that men (r=−.24, p≤0.05) were less satisfied with NP providers; no other demographics were associated with satisfaction. Only two BRAIS scales had statistically significant relationships to satisfaction (Conformity BRIAS [r=−27, p<0.010] and Internalization BRAIS [r=.28, p<0.01]). | | | The findings indicate that African Americans simultaneously held moderate levels of cultural and medical mistrust and high trust and satisfaction with their NPs. While it is promising to find that NPs can overcome mistrust of European Americans and the healthcare system, the findings also indicate that African Americans (and other ethnic and racial groups) are not monolithic. The dynamic client singularity variable of racial identity attitudes had an equally significant effect on patient satisfaction. More research with a diverse sample of patients of NPs will be needed to determine the full effect of racial identity on satisfaction with care. Clearly the assumption that one can just “do the right thing” is no longer sufficient for culturally-congruent care. For NPs to be a global force in diminishing health disparities will require more complex evaluations of patients (and advanced practice nurse providers). | | |

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| **Non-experimental studies (N=97)** | | | | | |
| **Citation** | **Study Aim** | **Population/ Setting** | **Study Design** | **Methods** | **Outcome Measures**  1=care processes  2=patient experience  3=patient health indices  4=quality of life  5=cost |
| 143. Birmingham PK, Suresh S, Ambrosy A, et al. Parent-assisted or nurse-assisted epidural analgesia: Is this feasible in pediatric patients? *Paediatr Anaesth.* 2009;19(11):1084-1089.[143](#_ENREF_144) | To assess the feasibility of parent-assisted or nurse-assisted epidural analgesia (PNEA) for control of postoperative pain in a pediatric surgical population. | Over a 10 year period, between 1999 and 2008, 128 procedures in 126 patients from a single pediatric hospital setting was assessed for satisfaction of analgesia. | Quantitative  Longitudinal  Retrospective | Satisfaction to analgesia after placement of an epidural catheter was assessed using the initial PNEA setting, personnel activating the demand-dose button (nurse or parent), changes in settings during the hospitalization, local anesthetic solution utilized, and the number of demands and delivered doses were analyzed. Any changes in pain treatment modality (i.e., switching to intravenous patient-controlled analgesia [PCA]), use of additional monitoring, and level of nursing care (ICU [intensive care unit], special observation unit, regular floor) were recorded. In addition, the duration of epidural catheter placement, adverse side effects, and the recorded pain scores during the time of PNEA were evaluated. Pain was quantitatively assessed using the Face, Legs, Activity, Cry, Consolability (FLACC) scale, a numeric rating scale (1–10), or a Faces Pain Scale. | 1,2,3 |
| **Results** | | | **Conclusion** | | |
| In 63 cases (49.2%), both the nurse and the parent activated the demand button. In 58 cases (45.3%), the parent(s) alone assisted in demand-dose button activation. In the remaining seven cases (5.4%), the nurse alone assisted in activation of the button. Satisfactory analgesia using parent ⁄ nurse-assisted epidural analgesia was obtained in 110 (85.9%) patients. Of this cohort, 53.6% (n=59) required no change in the initial PNEA settings, and an additional 34 patients (30.9%) required only one adjustment during their entire hospitalization. Of the catheters, 96.1% (n=123) were left in place for ≤5 days, with 85.3% (n=105) of those catheters removed within 3 days. | | | The use of nurse-controlled or parent-controlled epidural infusion may offer an alternative modality of pain relief in infants and children who may not have the ability to self-administer a dose of local anesthetic. The authors noted that in the study cohort, there were no complications or adverse events associated with the nurse-controlled or parent-controlled PCEA. They felt that this modality of pain control can offer an excellent alternative to intravenous opioids which could lead to other adverse events including respiratory depression. Further prospective studies including data on parent and nurse satisfaction should be obtained in this population. | | |

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| **Non-experimental studies (N=97)** | | | | | |
| **Citation** | **Study Aim** | **Population/ Setting** | **Study Design** | **Methods** | **Outcome Measures**  1=care processes  2=patient experience  3=patient health indices  4=quality of life  5=cost |
| 144. Bonner AF, Castle NG, Men A, et al. Certified nursing assistants' perceptions of nursing home patient safety culture: Is there a relationship to clinical outcomes? *Journal of the American Medical Directors Association.* 2009;10(1):11-20.[144](#_ENREF_145) | To examine whether certified nursing assistants' (CNAs) perceptions of patient safety culture (PSC) were correlated with clinical outcomes (rates of falls, pressure ulcers, and daily restraint use) in a random sample of nursing homes. | 1,579 CNAs from a random sample of 72 nursing homes in 5 randomly selected states during the first 2 quarters of 2005 participated in this study. | Quantitative  Cross- Sectional  Secondary Data Analysis | A secondary data analysis using data that adapted the Hospital Survey of Patient Safety Culture (HSOPSC) for nursing homes. The HSOPSC data were merged with data from the Minimum Data Set (MDS), ONlive Survey Certification and Reporting System (OSCAR) and Area Resource File (ARF). Data were analyzed using Poisson, multinomial logistic, and linear regression, and generalized estimating equations. Descriptive statistics were compiled for demographic data. | 2 |
| **Results** | | | **Conclusion** | | |
| Results of regression analyses suggest that higher (more developed and more desirable) CNA PSC scores were associated with increased reporting of falls (B-0.015; p=0.000). Facilities with higher total CNA PSC scores were more likely to report moderate restrain use, whereas facilities with lower CNA PSC scores were more likely to report high restrain use.(B-0.172:p=0.017). CNA PSC scores were not associated with differences in pressure ulcer scores. | | | Results from this study indicate that PSC is an important factor related to certain clinical outcomes such as reports of falls and restraint use. This study supports the recommendation of previous researchers that nursing home PSC should be measured, benchmarked, and programs implemented to help nursing homes improve PSC. Patient safety and workforce stability are likely to benefit from such efforts. | | |

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| **Non-experimental studies (N=97)** | | | | | |
| **Citation** | **Study Aim** | **Population/ Setting** | **Study Design** | **Methods** | **Outcome Measures**  1=care processes  2=patient experience  3=patient health indices  4=quality of life  5=cost |
| 145. Burge DM. Relationship between patient trust of nursing staff, postoperative pain, and discharge functional outcomes following a total knee arthroplasty. *Orthopaedic Nursing.* 2009;28(6):295-301.[145](#_ENREF_146) | To describe the relationship between patient trust in hospital nursing staff, level of postoperative pain, and discharge functional outcomes following total knee arthroplasty. | The study was conducted on a 28-bed med surge unit in a private, not-for-profit hospital in rural Arkansas. The sample consisted of 68 patients. | Quantitative  Cross-Sectional  Correlational | Level of patient trust was measured with the Trust subscale of the Patient’s Opinion of Nursing Care. The 11-item questionnaire was administered prior to discharge. Patient pain was measured using the Numeric Analog Scale (NAS). Functional outcome of the total joint arthroplasty was obtained by computing the gain score between preoperative and postoperative degrees of flexion prior to discharge. A clinically significant gain score following total knee arthroplasty is described as 10 degrees of flexion. The participant completed the trust questionnaire the morning of discharge from the acute care facility. Gain scores were calculated on the basis of the difference between preoperative and postoperative degrees of knee flexion documented in the chart. | 2 |
| **Results** | | | **Conclusion** | | |
| Average trust score was 47.5±4.5, which indicates a high level of patient trust of the nurse. Range of trust scores was 36–55 (possible range, 11–55). A score of 11 indicates the patient has little trust, whereas a score of 55 indicates the patient has a very high level of trust of the nurse. Average participant pain score was 5.0 (range, 2.6–9) for the acute care hospitalization. Average functional outcome gain score was 26.8±6.3 (range, 15–43).The participants in this study were older adults who had an average of three previous hospitalizations. Trust scores suggested the patient has a higher than average trust of the hospital nursing staff. The pain scores indicated that participants experienced a broad range of pain intensity. All participants achieved more than a desirable functional outcome (gain score of greater than 10) as demonstrated by the gain scores. There was no statistically significant relationship between trust and pain (0.116, p=0.347) or trust and functional outcome (0.073, p=0.552). There was also no statistically significant relationship between pain and functional outcome (0.055, p=0.657). These findings are suggestive that the patient’s trust of hospital nursing staff has no association with patient’s reported level of pain. It also suggests that the patient’s trust of hospital nursing staff and pain score were not related to patient’s functional outcome. | | | The results of this study show that functional outcome is not significantly associated with the pain score and the pain score is not significantly related to the trust score. In addition, trust scores, pain scores, age, sex, and number of hospitalizations did not predict the functional outcomes of a patient undergoing a total knee arthroplasty. Clinical implications of the study suggest that patients who are planning to undergo a total knee arthroplasty may benefit from prehospitalization sessions or group classes (often known as “joint camps”) with nursing staff to discuss the postoperative phase. A prehospitalization meeting with nursing staff could assist the patient with previous hospitalizations in identifying issues that arose during the prior hospital experiences and in discussing with the nursing staff what impact those experiences might have on this hospitalization. | | |

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| **Non-experimental studies (N=97)** | | | | | |
| **Citation** | **Study Aim** | **Population/ Setting** | **Study Design** | **Methods** | **Outcome Measures**  1=care processes  2=patient experience  3=patient health indices  4=quality of life  5=cost |
| 146. Buswell LA, Ponte PR, Shulman LN. Provider practice models in ambulatory oncology practice: Analysis of productivity, revenue, and provider and patient satisfaction. *Journal of Oncology Practice.* 2009;5(4):188-192.[146](#_ENREF_147) | To evaluate collaborative practices of teams consisting of physicians, nurse practitioners (NPs) and physician assistants (PAs) at a cancer center to better understand the parameters of productivity, visit fees, and provider and patient satisfaction. | The sample was comprised of patients (N=68) and teams (N=42), made up of physicians, nurse practitioners and physician assistants at a single, specialty oncology institute in Boston. | Quantitative  Cross-Sectional | Teams of physicians, NPs and PAs at the Dana-Farber Cancer Institute were interviewed regarding their satisfaction with their current practice models and the effects on productivity, visit fees, and patient satisfaction. Patients were randomly selected for a telephone interview regarding their satisfaction with care team. | 2, 5 |
| **Results** | | | **Conclusion** | | |
| Three models were identified and defined. The independent visit model (IVM) was defined as when physicians, NPs, and PAs saw two thirds or more of their patients independently and one third or fewer together as a team. When providers did see patients together as a team, it was often to discuss issues such as initial treatment, changes in disease status or treatment, and end-of-life decisions. The shared visit model (SVM) was defined as when physicians, NPs, and/or PAs saw more than two thirds of their patients together and one third or fewer independently. When providers saw a patient together, some of the visit was performed with just one provider, who handled specific issues such as symptom management, home care, diagnostic test scheduling and/or review, hospice care, and other treatment planning. In both models, midlevel providers often saw patients alone when physicians were out of the office, either traveling or acting as attending physician in inpatient services. When patients were seen by midlevel providers alone, the midlevel providers documented and billed for the visits. The services for which NPs and PAs can bill vary by practice model and state. When a patient was seen by the provider team together, the physician usually documented and billed for the visit. Documentation by the NP and/or PA was optional in this situation. It was also acceptable for the NP and/or PA to document and bill for the visit even though the physician had been involved, as long as the involvement of the physician was acknowledged in the visit documentation, and the physician did not bill for the visit. The mixed visit model (MVM) was defined as when physicians, NPs, and PAs saw between one third and two thirds of their patients together as a team.  Provider and patient satisfaction levels were assessed for the IVM and SVM but not for the MVM.. All providers using the IVM reported being very satisfied. In the SVM, physicians reported being very satisfied, and midlevel providers reported being moderately satisfied. Patients reported being slightly less satisfied in the IVM regarding comfort with seeing only midlevel providers on some visits. On the other hand, in the SVM, fewer patients reported satisfaction with the amount of time physicians spent with them. However, in aggregate, patient satisfaction scores were high for both models. | | | Collaborative practices involving physicians, NPs, and PAs are becoming increasingly critical to the delivery of oncology care and services. This is likely to become even more important as the medical oncology physician workforce becomes less able to meet the increasing demand for cancer care projected by American Society of Clinical Oncology (ASCO) and other organizations. Although there are also relative shortages of NPs and PAs, it is likely that these workforces could be increased more rapidly than the workforce of medical oncologists available to care for patients with cancer in the United States. Therefore, optimizing models of collaborative practice between physicians and midlevel providers will be critical in coming years. | | |

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| **Citation** | **Study Aim** | **Population/ Setting** | **Study Design** | **Methods** | **Outcome Measures**  1=care processes  2=patient experience  3=patient health indices  4=quality of life  5=cost |
| 147. Campesino M. Exploring perceptions of cancer care delivery among older Mexican American adults. *Oncology Nursing Forum.* 2009;36(4):413-420.[147](#_ENREF_148) | To investigate older Mexican Americans' perceptions of cancer care delivery, specifically regarding perceived discrimination. | The sample consisted of 5 Spanish speaking, community dwelling Mexican American adult cancer survivors. Participants were interviewed in senior centers or their own homes. | Qualitative  Cross- Sectional  Interviews | A demographic questionnaire was administered  to measure social background and acculturation, and  it included questions on country of origin, language preferences, religious practices, and access to health care. In addition, two questions were devised to assess beliefs about discrimination toward minority groups. One semistructured, audio recorded interview that required 30–45 minutes was conducted with each participant in the person’s preferred language and at the location of his or her choice. Content and thematic analysis was conducted. | 2 |
| **Results** | | | **Conclusion** | | |
| Three themes emerged from the interview data: a) emotional responses to cancer diagnosis, b) relationship with healthcare providers, and c) use of spiritual resources in coping with cancer. All participants in this study denied experiencing discrimination in health care related to race, ethnicity, income, or language spoken. Two participants believed that no discrimination exists at all against minorities in the United States. Among the three participants who described experiences of poor-quality health care, none of the incidents was attributed to racial or ethnic discrimination. Each incident of perceived poor-quality health care was characterized by rudeness, uncaring attitudes, or neglect by a physician or nurse. Only one participant perceived “a lot” of racial or ethnic discrimination against minorities in the United States. Yet her perception pertained to the broad group level, rather than the personal level, because she denied personally experiencing any discrimination. In addition, she reframed her daughters’ complaints of racial and ethnic discrimination in their healthcare employment setting by attributing it to professional jealousy. All participants described feeling satisfied with the health care they received for cancer treatment as well as with their current PCPs. They conceptualized high quality health care as reflective of physical care and interpersonal factors. Providers who displayed warmth, patience, and kindness were perceived to be “like a family member” by participants, and this engendered trust. Only one participant had a Latino PCP who spoke Spanish, and he viewed the relationship as exceptional because of the sense of mutuality and warmth that had been established. | | | This study reveals experiences and perceptions of older Mexican American cancer survivors, a group whose voices are rarely represented in health science research. Although several national studies have reported that perceived racial and ethnic discrimination in healthcare delivery is an issue for some patients, this sample denied any such experiences or perceptions. Overall, participants were satisfied with the health care they received, with a few exceptions. The role of age and education in perceived discrimination should be examined more closely with a larger group of racial and ethnic minority patients. Increasing the understanding of the role of perceived discrimination in cancer care is an important step in the development of culturally responsive, evidence-based healthcare interventions for patients and families coping and living with cancer. | | |

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| **Citation** | **Study Aim** | **Population/ Setting** | **Study Design** | **Methods** | **Outcome Measures**  1=care processes  2=patient experience  3=patient health indices  4=quality of life  5=cost |
| 148. Cartwright JC, Miller L, Volpin M. Hospice in assisted living: Promoting good quality care at end of life. *Gerontologist.* 2009;49(4):508-516.[148](#_ENREF_149) | To describe good quality care at the end of life (EOL) for hospice-enrolled residents in assisted living facilities (ALFs). | The sample was comprised of hospice registered nurses (N=18), assisted living facility registered nurses (N=6), medication aides (N=9), and caregivers (N=5) in an ALF in urban and rural settings in Oregon. | Qualitative  Cross-Sectional  Descriptive  Interview | A semi-structured interview guide started with broad questions asking the participants to discuss a specific example of a time when the EOL care “went well.” Specific questions were then used to elicit detailed descriptions of the care; how staff members from two organizations communicate and work together; and specific information about decision making, resident monitoring, symptom management, comfort care, and family involvement. Participants were asked to identify ways that the care for ALF hospice residents could be improved. Recruitment was discontinued when no new themes about the care experiences were identified. The interviews were audio taped and ranged in length from 1 to 2 hours. Data analysis was conducted using open coding and constant comparative analysis. | 1,4 |
| **Results** | | | **Conclusion** | | |
| Examples of high-quality dying experiences included situations where the dying process was relatively brief and also those that occurred over extended periods of time. Two themes were consistently associated with care that went well: high ALF staff commitment to the resident dying in the ALF and respectful collaboration among multiple care providers. Factors associated with these conditions included (a) administrator support for hospice and for residents dying in the ALF setting, (b) high levels of knowledge and positive beliefs about providing EOL care in ALF, and (c) consistent staffing patterns for hospice RNs and ALF staff. Outcomes of the care experiences encompassed beliefs that the resident was comfortable at the EOL and their wishes were honored, and feeling good about how self and others had participated in the care. | | | This study has illuminated key factors that ALF and hospice staff identify as desirable in order to support  ALF residents during this final life transition. These factors have great potential for serving as the basis for models of EOL care for this important and growing population. | | |

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| **Non-experimental studies (N=97)** | | | | | |
| **Citation** | **Study Aim** | **Population/ Setting** | **Study Design** | **Methods** | **Outcome Measures**  1=care processes  2=patient experience  3=patient health indices  4=quality of life  5=cost |
| 149. Castle NG. Use of agency staff in nursing homes. *Research in Gerontological Nursing.* 2009;2(3):192-201.[149](#_ENREF_150) | To describe the extent and degree of use of agency staff by nursing homes and examines the relationship between agency staffing levels and quality of care in a large sample of nursing homes. | 3,876 nursing homes (>30 beds) in the U.S. participated in this study. | Quantitative  Cross-Sectional  Secondary Data Analysis  Retrospective | Data used in this investigation came from three sources. The information on agency staffing came from an author developed mailed survey of nursing home administrators conducted during January to March 2007, which collected information from the previous year. To match this time frame, quality indicators from the 2006 Nursing Home compare were used. Characteristics of the nursing homes came from the Onlive Survey Certification and Reporting (OSCAR) data collected in 2006. Correlational and multivariate analyses were conducted. Response rate for the mailed survey was 65%. | 1, 3, 4 |
| **Results** | | | **Conclusion** | | |
| In 2006, 28.3% of facilities in the sample had some RN agency staff use, while 4.1% used only agency RNs (i.e., they did not use either LPN or NA agency staff). Nineteen percent of facilities had some LPN agency staff use, whereas 3.2% used only agency LPNs. Forty-two percent of facilities had some NA agency staff use, while 35.5% used only agency NAs. Of those facilities using agency staff in 2006, RN agency use averaged 2.3 FTE staff per 100 residents, LPNs averaged 3.1 FTE staff per 100 residents, and NAs averaged 4.9 FTE staff per 100 residents. As a percentage of total staff, this represents 18.5%, 27.7%, and 19.6% agency use for RNs, LPNs, and NAs, respectively. For facilities with no agency NA use, 11 of the 15 quality measures values were significantly (p<0.05) lower than in facilities with 25% or more agency NA use (lower scores indicate better quality). In facilities with no agency LPN use, 7 of the 15 quality measures were significantly (p<0.05) lower than in facilities with 25% or more agency LPN use. In facilities with no agency RN use, 13 of the 15 quality measures were significantly (p<0.05) lower than in facilities with 25% or more agency RN use. For NAs, 8 of the 15 Quality Measures were significantly (p<0.05) lower in the no agency-use facilities (lower scores indicate better quality), whereas 4 were significantly lower for LPNs and 6 were significantly lower for RNs. Facilities with no use of agency NAs had a 5.1% lower score compared with facilities with 25% or more NA agency use for the measure of percentage of residents with need for help with daily activities increased. | | | Many nursing homes use agency staff (approximately 60% use at least some), and a strong association between better quality and lower agency used exited for both nurse aides and RNs. The influence on quality for the highest levels of agency use, compared with no agency use, was clinically significant. On the basis of these findings, facilities considering using high levels of agency staff should do so carefully. | | |

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| **Citation** | **Study Aim** | **Population/ Setting** | **Study Design** | **Methods** | **Outcome Measures**  1=care processes  2=patient experience  3=patient health indices  4=quality of life  5=cost |
| 150. Castle NG, Bost FS. Perfecting patient care: Integrating principles of process redesign in nursing homes. *Journal of Applied Gerontology.* 2009;28(2):256-276.[150](#_ENREF_59) | To describe the principles of Perfecting Patient Care (PPC) and provide case examples of work redesign and measurable outcomes at one nursing home. | The study was conducted at a single, 159-bed nursing home, which has 5 skilled care units and one specializing in dementia care, over an 18 month period in 2004. | Quantitative  Longitudinal  Pilot study | The PPC is derived from the Toyota Production System (TPS). The idea behind PPC is: 1) All work must focus on meeting the needs of the residents; 2) give workers tools for addressing problems, to help them better meet resident needs, one by one; 3) support a blame-free workplace that makes it safe to report errors; 4) create bedside resource teams applying the scientific method to test work design changes; and 5) provide workers with a help chain – up to and including managers when necessary – to help workers solve problems quickly, at the point of care. The impact of the PPC was evaluated by examining employee, family and resident satisfaction scores pre and post implementation. For residents, the Nursing Facility Resident Satisfaction Questionnaire was used. For family members, the Nursing Facility Family Satisfaction Questionnaire was used. Finally, an employee job satisfaction survey was used. | 2 |
| **Results** | | | **Conclusion** | | |
| Findings show that PPC helped with process redesign to eliminate linen shortages and to decrease by half the resident fall rate. For the employee job satisfaction survey, improved scores resulted for 9 questions; 6 scores were similar to those at baseline; and 4 scores were lower than those at baseline. For the family satisfaction survey, improved scores results for 17 questions; 5 scores were similar to those at baseline; and no scores were than those at baseline. For the resident satisfaction survey, scores on 13 questions improved compared to baseline; 8 scores were similar to those at baseline; and 1 score was lower than baseline. | | | The PPC provides a means for process change. Using this technique, improvements in work processes were implemented at this pilot facility. Gains in employee, family, and resident satisfaction were also achieved. Such gains themselves are laudable; however further research is needed to address the business case of implementing PPC. This is clearly important as many nursing homes operate close to the margin and cannot afford misplaced or misaligned initiatives. The impact of PPC on staff turnover, occupancy, profits, and quality needs further evaluation. Nevertheless, partly based on the improvements identified at this pilot facility, other nursing homes in the region are beginning to implement PPC. | | |

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| 151. Castro A, Ruiz E. The effects of nurse practitioner cultural competence on Latina patient satisfaction. *Journal of the American Academy of Nurse Practitioners.* 2009;21(5):278-286[151](#_ENREF_151) | To explore the relationship between degree of cultural competence in nurse practitioners (NPs) and measures of patient satisfaction among Latinas. | The convenience sample was comprised of 218 Latina patients and 15 nurse practitioners in multiple primary care clinics (N=11) in Arizona. | Quantitative  Cross- Sectional  Descriptive correlational | The NP sample was invited to complete a demographic questionnaire and the Inventory to Assess the Process of Cultural Competence among Healthcare Professionals (IAPCC). The IAPPC is a 25-item self-administered survey that uses a 4-point Likert scale to measure the amount of cultural competence in healthcare providers. The IAPCC measures five constructs of cultural competence: cultural awareness, cultural knowledge, cultural skill, cultural encounter, and cultural desire. The Latina sample was invited to complete a demographic questionnaire, the Patient Satisfaction Questionnaire PSQ-III), and the Acculturation Rating Scale for Mexican Americans (ARSMA-II) acculturation tool. The PSQ-III is a 51-item tool that uses a 5-point Likert scale to assess seven constructs of satisfaction. | 1,2 |
| **Results** | | | **Conclusion** | | |
| NP cultural competence scores were obtained on the IAPPC. The score range was between 63 and 92 points out of a possible 100; the mean of all scores was 78.33 (SD=9.82). Two NPs were culturally proficient (both scored 92), seven NPs were culturally competent (scores ranging from 79 to 87), and NPs were culturally aware (scores ranging from 63 to 74). Latina patient satisfaction scores were obtained using the PSQ- III guidelines. The scores ranged from 29 to 89 points out of a possible 100. The mean of all satisfaction scores was 65.00 (SD=13.78). Computation of the Pearson r correlations between NPs’ cultural competence and Latina patient satisfaction yielded (r=0.193) with correlation scores being significant at the 0.05 level (two-tailed). This indicates that increased cultural competence in NPs is associated with greater Latina patient satisfaction. A regression analysis between NPs’ cultural competence and Latina patient satisfaction was conducted. A value of r2=0.04 denotes that NPs’ cultural competence accounted for 4% of the variance in Latina patient satisfaction. Acculturation scores ranged from 2.96 –3.69 points out of a possible +4.0 to –4.0 scale. The mean of all satisfaction scores was –1.94 (SD=1.31). Patient satisfaction was positively correlated with patient time spent with provider(r=0.26), NP cultural skill (r=0.20), NP cultural competence (r=.19), NP cultural encounter (r=0.18), NP cultural desire (r=0.18), NP cultural knowledge (r=0.15), the American orientation scale (r=0.14), and NP ethnicity (r=0.14). Patient satisfaction was also negatively correlated with patient waiting time (r=–0.33), NP years since RN degree (r=–0.15), and patient possession of health insurance (r=–0.14). NP cultural competence was positively correlated with NP ethnicity (r=0.40), cultural competence training (r=0.32), certification (r=0.29), interpersonal aspects of care (r=0.23),NP states of practice (r=0.19), availability and convenience of care (r=0.18), patient satisfaction with general care (r=0.16), technical quality of care (r=0.16), access, financial aspects of care (r=0.15), and the American orientation subscale (r=0.14). NP cultural competence was negatively correlated to type of NP program attended (r=–0.35), NP’s ability to speak Spanish (r=–0.28), NP years since RN degree (r=–0.21), and NP’s age (r=–0.14). | | | The present study provided evidence on the importance of patients’ perceptions of satisfaction with their medical care and its relationship to NPs’ cultural competence level. The results of this study suggest that less acculturated patients prefer ethnically similar NPs, decreased waiting time may be used to improve patient satisfaction, and Latina patients of low acculturation, educational, and socioeconomic levels prefer NPs who are Latinas, certified, received cultural competence training, attended master level programs, and spoke Spanish. Awareness of this phenomenon could persuade NPs to learn Spanish, become certified, and seek cultural competence training and higher education because NPs with these qualifications will be in increasing demand as the Latino population in this country continues to grow. | | |

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| **Citation** | **Study Aim** | **Population/ Setting** | **Study Design** | **Methods** | **Outcome Measures**  1=care processes  2=patient experience  3=patient health indices  4=quality of life  5=cost |
| 152. Chapman SA, Spetz J, Seago JA, et al. How have mandated nurse staffing ratios affected hospitals? Perspectives from California hospital leaders. *J Healthc Manag.* Sep-Oct 2009;54(5):321-333; discussion 334-325.[152](#_ENREF_152) | To analyze qualitative data from interviews with healthcare leaders about the impact of nurse staffing ratios. | The sample was comprised of health care leaders (N=23) at twelve hospitals in California. | Qualitative  Cross- Sectional  Interviews | The research team prepared standard, semi-structured interview guides, including several core questions as well as questions tailored for each category of hospital leader. Because of the sensitive nature of these regulations and to assure interviewees that the purpose of this research was not to report compliance to the  state regulatory body, interviewees were not asked about how often they were or were not meeting the ratios.  Interviews lasted between 45 and 90 minutes, with the average about 60 minutes. Approximately two-thirds  of the interviews were conducted in person. The remaining interviews were conducted by telephone. | 1, 2, 5 |
| **Results** | | | **Conclusion** | | |
| This article reports on the perspective of hospital leaders in implementing ratios and the continuing challenges hospitals face in meeting the requirements. Hospitals claimed the minimum nurse staffing regulations would create a financial hardship. From the interviews it was apparent that most hospitals needed to hire more nurses and that those nurses were costly. During a time of nurse shortage, strategies included hiring traveling nurses from out of state, instituting hiring bonuses, and creating new positions uniquely tailored to address meal and break coverage. In addition, policymakers and the private sector took several steps to increase the number of nursing education slots in the state. Hospital leaders reported that nurse staffing ratios have had an impact on overall patient services and staffing. To pay for the additional nursing costs, some hospitals made cuts in non-nurse staffing while others cut back on services such as outpatient clinics. The financial impact of minimum nurse staffing ratios should be viewed in the broader health policy context. This study is limited in the information available from third-party payers about reimbursement increases to hospitals to offset the increased costs to implement ratios. Future research should investigate the relationship between increased costs as a result of nurse staffing ratios and third-party reimbursement rates. Ultimately, employers and consumers are stakeholders in this issue because increasing costs are passed along in the form of increased employer and individual health insurance costs. Interviews indicated that chief executive officers (CEOs) no longer have day-to-day concerns about the minimum nurse staffing ratios, and they are not actively trying to overturn them. Hospital leaders seem to have accepted the ratios as a part of the environment but do not support them as a way to achieve the goals of safer patient care. Ongoing studies of California's nurse-to-patient ratios will be important to monitor their impact, particularly because this legislation may be used as a model for other states. In addition, further research is needed to assess monitoring of the ratios and enforcement procedures. | | | Results of this study will be useful to healthcare managers searching for ways to reduce unnecessary administrative costs while continuing to maintain the level of administrative activities required for the provision of safe, effective, high-quality care. | | |

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| **Non-experimental studies (N=97)** | | | | | |
| **Citation** | **Study Aim** | **Population/ Setting** | **Study Design** | **Methods** | **Outcome Measures**  1=care processes  2=patient experience  3=patient health indices  4=quality of life  5=cost |
| 153. Coleman EA, Coon SK, Lockhart K, et al. Effect of certification in oncology nursing on nursing-sensitive outcomes. *Clinical Journal of Oncology Nursing.* 2009;13(2):165-172[153](#_ENREF_153) | To compare certified  nurses with noncertified nurses for knowledge and clinical behaviors related to symptom management of pain and chemotherapy-induced nausea and vomiting (CINV), patient satisfaction, and nurse satisfaction. | The sample was comprised of 93 nurses (35; 38% certified) and 270 patients. | Quantitative  Cross- Sectional  Survey  Chart review | Patients completed the Patient Pain Questionnaire (PPQ); the Rhodes Index of Nausea, Vomiting and Retching; and the Press Ganey Inpatient Survey (INVR). Nurses completed a demographic form, the Nurses’ Knowledge and Attitudes Survey Regarding Pain (NKASRP), the Nausea Management: Nurses’ Knowledge and Attitude Survey, and a questionnaire on satisfaction with their work. Chart audits developed by the investigators provided data on documented symptom assessment and management. | 1, 3 |
| **Results** | | | **Conclusion** | | |
| Compared to noncertified nurses, certified nurses participated in more continuing education programs and a higher percentage of certified nurses were members of ONS (p<0.01). Although not statistically significant, certified nurses trended toward having more years of oncology nursing experience (p=0.08). Certified nurses scored higher than noncertified nurses on the NKASRP(d=0.50; medium effect size) and certified nurses tended to score higher on knowledge of CINV. Job satisfaction was relatively high for all the nurses but slightly higher for the noncertified nurses. Because a significant difference existed between certified and noncertified nurses in the number of hours of continuing education (p=0.001) and in ONS membership (p = 0.000), the authors looked for an association of these variables with study outcomes, combining responses from certified and noncertified nurses. Nurses with more hours of continuing education had higher scores on nausea knowledge (p=0.02). Nurses belonging to ONS had significantly higher scores on pain (p=0.02) and nausea (p=0.04) knowledge. Overall, nurses documented pain 237 out of 270 times (88%). Of the instances when pain was not documented, certified nurses failed to document 15 out of 109 times (13.8%) and noncertified nurses failed to document 18 out of 161 times (11.2%). These differences between certified and noncertified nurses were not statistically significant (p=0.53). Nurses documented nausea 85 out of 270 times (31%). Of the instances when nausea was not documented, certified nurses did not document nausea 73 out of 109 times (67%) and noncertified nurses did not document nausea 112 out of 161 times (69.6%). Again, the differences between certified and noncertified nurses were not statistically significant (p=0.65). The chart audits showed that National Comprehensive Cancer Network (NCCN) guidelines were followed for 39 out of 74 charts (52.7%) for CINV management for patients with certified nurses and for 55 out of 114 charts for CINV management for patients with noncertified nurses (p=0.55). | | | This study demonstrated that job satisfaction is fairly high for oncology nurses and patient satisfaction is high for patients with cancer. In general, cancer pain and CINV were managed well but improvements could be made. Nurses and physicians should be educated continuously on evidence-based guidelines for symptom management of cancer pain and CINV, and a CINV knowledge and attitude assessment tool should be developed. The results of this study provide some support to the hypothesis that certification in oncology nursing improves patient care quality. The positive effects on the nurses’ knowledge of pain and CINV was related to the nurse being certified in oncology nursing, attending more hours of continuing education, and being a member of oncology nursing society (ONS). Most likely, a multisite, large-scale study will be needed to determine the effect of certification alone. | | |

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| **Non-experimental studies (N=97)** | | | | | |
| **Citation** | **Study Aim** | **Population/ Setting** | **Study Design** | **Methods** | **Outcome Measures**  1=care processes  2=patient experience  3=patient health indices  4=quality of life  5=cost |
| 154. Cricco-Lizza R. Rooting for the breast: Breastfeeding promotion in the NICU. *MCN The American Journal of Maternal/Child Nursing.* 2009;34(6):356-364[154](#_ENREF_154) | To explore the structure and process of breastfeeding promotion in the neonatal intensive care unit (NICU). | The sample consisted of nurses (N=114) working in a Level IV NICU at a single freestanding children’s hospital in the Northeastern United States. | Qualitative  Longitudinal  Ethnographic | An ethnographic approach was used with the techniques of participant observation, interviewing, and artifact analysis. Unobtrusive observations focused on the nurses’ behaviors during interactions with babies, families, nurses, and other healthcare professionals throughout everyday NICU activities. Included in these observations were feedings and routine care, shift reports, breastfeeding committee meetings, nutrition meetings, psychosocial rounds, and nurse-run breastfeeding support groups for parents. The researcher role evolved from observation to informal interviews over time. The nurses were asked about breastfeeding promotion within the context of everyday nursing care in the NICU. The general informants were observed/ informally interviewed an average of 3.5 times each  (range 1-24) over the study period. Each of the 18 key informants engaged in a formal, 1-hour, tape-recorded interview in a private room near the NICU. Open-ended interview questions probed nursing perspectives about breastfeeding promotion in the NICU. | 1,2 |
| **Results** | | | **Conclusion** | | |
| There were three main findings: 1) organizational and human resources were developed to create a web of support to promote breastfeeding in the NICU; 2) variations in breastfeeding knowledge and experience within the nursing staff, marketing practices of formula companies, and insufficient support from other health professionals served as sources of inconsistent breastfeeding messages; and 3) promotion of breastfeeding in this NICU is evolving over time from a current breast milk feeding focus to the goal for a future breastfeeding process orientation. | | | This article focused on structure and processes of breastfeeding promotion. Future manuscripts will shed further light on the nurses’ infant feeding beliefs and experiences and how these get expressed in the everyday demands of nursing in the NICU setting. | | |

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| **Citation** | **Study Aim** | **Population/ Setting** | **Study Design** | **Methods** | **Outcome Measures**  1=care processes  2=patient experience  3=patient health indices  4=quality of life  5=cost |
| 155. Dellon ES, Lippmann QK, Galanko JA, et al. Effect of GI endoscopy nurse experience on screening colonoscopy outcomes. *Gastrointestinal Endoscopy.* 2009;70(2):331-343.[155](#_ENREF_155) | To determine whether the nurse experience was associated with screening colonoscopy complications, procedure length, and cecal intubation. | The sample consisted of patients (N=3,614) accounting for 3,631 colonoscopies (N=3,631) and nurses (N=29) at multiple hospitals in University of North Carolina Hospitals. | Quantitative  Cross- Sectional  Retrospective chart review | The main exposure, nursing experience, was measured in weeks from the initial calendar time of the start date in a gastrointestinal (GI) procedures unit to the calendar time of the specific procedure date. When 2 nurses were present during a procedure (with the more-experienced nurse training and mentoring the less-experienced nurse), the experience level of the less-experienced nurse was assigned to the case. The primary outcome was any immediate complication; secondary outcomes included time to cecum, total procedure time and cecal intubation rate. | 3 |
| **Results** | | | **Conclusion** | | |
| The primary outcome of any immediate complication occurred 16 times (0.4%). Seven complications were because of bradycardia, 2 were because of hypotension, and 7 were because of respiratory depression. Thirteen different nurses participated as the primary nurse in these cases, and 5 of the cases were staffed by 2 nurses. Seven physicians were involved in the 16 cases, and there was no association between the physician and the complication (p=0.17) or the nurse and the complication (p=0.17) On bivariate analysis, complications were associated with having multiple past abdominal surgeries (1.2% of patients with multiple past abdominal surgeries had a complication compared with 0.4% of patients without multiple past surgeries; p=0.03) and with a lower body mass index (BMI) (patients having complications had a mean BMI of 23.8 kg/m2 compared with patients without complications, who had a mean BMI of 27.7 kg/m2; p=0.01). The occurrence of a complication was associated with nurse inexperience. Thirteen of the 16 total complications (81%) occurred during procedures staffed by nurses hired during the study period. Prolonged cecal-intubation times were associated with nurse inexperience. Eighteen percent of procedures with a cecal-intubation time more than 1 SD above the mean (167 of 923 procedures) were staffed by a nurse with 0 to 6 months of experience compared with 12% of procedures (282 of 2320 procedures) staffed by a nurse with more than 6 months of experience (p=0.001 by χ2 test; OR crude 1.60 [95% CI, 1.30-1.97]). Prolonged procedure times were associated with nurse inexperience. Eighteen percent of procedures with a total procedure time more than 1 SD above the mean (182 of 1031) were staffed by a nurse with 0 to 6 months of experience compared with 12% of procedures (296 of 2524) staffed by a nurse with more than 6 months of experience (p=0.001 by the χ2 test; OR crude 1.61 [95% CI, 1.32-1.97]). As with the other outcomes, a reduced cecal-intubation rate was associated with nurse inexperience. Nine percent of procedures, during which the cecum was not reached (91 of 979), were staffed by a nurse with 0 to 6 months of experience compared with 5% of procedures (128 of 2385) staffed by a nurse with more than 6 months of experience (p=0.001 by the χ2 test; OR crude 1.81 [95% CI, 1.37-2.39]). All relationships held after adjusting for potential confounding factors. | | | Nurse inexperience was associated with increased odds of screening colonoscopy immediate complications, prolonged procedure times, and decreased cecal-intubation rates. These findings have potential implications for GI endoscopy nurse training, colonoscopy quality measures, patient safety, and procedure efficiency. Also, targeting the procedures staffed by nurses new to the GI procedures unit may be a way to decrease a substantial proportion of immediate screening colonoscopy complications, but future research in this area is needed to evaluate this hypothesis. | | |

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| **Citation** | **Study Aim** | **Population/ Setting** | **Study Design** | **Methods** | **Outcome Measures**  1=care processes  2=patient experience  3=patient health indices  4=quality of life  5=cost |
| 156. Everett CM, Schumacher JR, Wright A, et al. Physician assistants and nurse practitioners as a usual source of care. *J Rural Health.* 2009;25(4):407-414.[156](#_ENREF_156) | To identify characteristics and outcomes of patients who use physician assistants and nurse practitioners (PA/NPs) as a usual source of care. | The sample was comprised of high school graduates and siblings (N=6,803) in multiple primary care practices in Wisconsin. | Quantitative  Cross- Sectional  Retrospective | Data were utilized from the Wisconsin Longitudinal Study (WLS), a long-term cohort study of a 1/3 random sample of people who graduated from Wisconsin high schools in 1957 (N=10,317) and one of their randomly selected siblings (N=8,778). The team used data from the 1993–1994 and 2004–2005 telephone and mail surveys for the graduates and siblings. The 2004–2005 survey defined the sample and is the source for all variables except the 1993 perceived health variable. The 2004–2005 WLS survey was selected because it was the first to include questions regarding provider type. | 1, 2, 3 |
| **Results** | | | **Conclusion** | | |
| Predisposing and enabling factors, including gender, age, extroversion scores, metropolitan residence, and insurance type were associated with identification of PA/NPs as a usual source of care. Adjusting for all other variables, when compared to participants residing in rural locations, participants residing in metropolitan locations had 0.4 times the odds of identifying a PA/NP as their usual source of care while participants residing in micropolitan areas had 0.65 times the odds of utilizing a PA/NP. Participants without insurance or on public insurance other than Medicare had 1.71 times the odds of reporting utilizing a PA/NP. When compared to men, women had 1.77 times the odds of recognizing a PA/NP as their usual source of care. With every year increase in age, participants had 0.95 times the odds of utilizing a PA/NP. Finally, with every point increase in extroversion score, respondents had 0.81 times the odds of reporting a PA/NP as a usual source of care. The remaining predisposing (marital status and educational attainment), enabling (income), and need factors (perceived health in 1992, count of diagnoses, and chronic diseases treated by PA/NPs) were not predictive of provider type. Identifying PA/NPs as a usual source of care was associated with several outcome measures. Measures of perceived access provided conflicting results. Participants utilizing PA/NPs were more likely to report lower GHAA access scores (β=−0.22) than those with physicians as their usual source of care. However, no differences were observed in reported difficulties or delays in obtaining health care. Several differences in utilization were also noted. Individuals with PA/NPs as a usual source of care had 1.57 times the odds of reporting a chiropractor visit and were less likely to have received a complete health exam (OR=0.74) or mammogram (OR=0.64) than those utilizing doctors. | | | Populations served by PA/NPs and doctors differ demographically but not in complexity. Though perceived access to care was lower for patients of PA/NPs, there were few differences in utilization and no differences in difficulties/delays in care or outcomes. This suggests that PA/NPs are acting as primary care providers to underserved patients with a range of disease severity, findings which have important implications for policy, including clinician work force and reimbursement issues. | | |

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| **Citation** | **Study Aim** | **Population/ Setting** | **Study Design** | **Methods** | **Outcome Measures**  1=care processes  2=patient experience  3=patient health indices  4=quality of life  5=cost |
| 157. Flanagan J. Postoperative telephone calls: Timing Is everything. *AORN Journal.* 2009;90(1):41-51.[157](#_ENREF_157) | To examine the best time for telephone follow-up by a nurse. | A convenience sample of 77 patients undergoing same day knee arthroscopy surgery at a large health care center in the Northeastern U.S. | Qualitative  Cross- Sectional  Interview | A member of the research team administered the demographic tool preoperatively and the open-ended interview schedules at three time points postoperatively. Semi-structured interviews allowed for a guiding framework to understand the patient experience related to the specific event. The participants shared thoughts and concerns about the experience. A conventional content analysis approach was undertaken. | 2 |
| **Results** | | | **Conclusion** | | |
| 12 hour follow-up - In general, patients reported being relieved to have the surgery completed and felt prepared for what to expect in the following few days of their recovery. Most patients reported having at least one person who would be with  them for the first 24 hours of recovery. In general, patients were not open to receiving any instruction reinforcement because they were “fine,” “tired,” and did not anticipate any problems because “everything was just perfect; it went just as I expected.” 24 hour follow-up - At 24 hours after surgery, the change in responses to the open-ended  interviews was dramatic. Patients reported not only having pain, but also a lack of preparedness to manage the pain. Further, they expressed anxiety and distress that because they had been so pain-free initially, they assumed they must have done something to injure themselves and cause harm to the surgical site (e.g., a tear in the  incision). Overall, at 24 hours, patients reported being unprepared for what to expect, especially in relation to the amount of swelling, bleeding, or pain, and lack of ability to exercise or be mobile. They also reported that the nurses in the preoperative setting had told them to expect this but that they felt the procedure had been “minimized” by others and was “no big deal.” 72 hour follow up - At 72 hours after surgery, patients were able to reflect on the entire experience and were able to see how overwhelming it was. As they began to see the surgery in a larger context, a sense of healing also emerged. They continued to have pain, but also more frequently reported being fatigued and surprised and concerned that they did not feel ready to resume normal activities because they assumed that they would have been able to at this point. They were distressed about having to manage so much of their recovery on their own, but enjoyed being able to express their concerns about the overall experience with the nurse through continual telephone contact. They also became more comfortable reporting concerns over time, so an increased number of questions about postoperative care were addressed at this interaction. Concerns included questions about pain management, exercise and mobility, management of swelling, physical therapy needs, constipation management, and some overall health-related questions. | | | Findings suggest that continuous contact by nurses in the recovery period helped patients discuss and process the surgical experience. Telephone calls may be most helpful to patients between 12-24 hours after surgery. | | |

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| **Citation** | **Study Aim** | **Population/ Setting** | **Study Design** | **Methods** | **Outcome Measures**  1=care processes  2=patient experience  3=patient health indices  4=quality of life  5=cost |
| 158. Gilbert DA, Hayes E. Communication and outcomes of visits between older patients and nurse practitioners. *Nursing Research.* 2009;58(4):283-293.[158](#_ENREF_158) | To examine contributions of older patients' and nurse practitioners’ (NP) characteristics and the content and relationship components of their communication to patients' proximal outcomes (satisfaction and intention to adhere) and longer term outcomes (changes in presenting problems, physical health, and mental health), and contributions of proximal outcomes to longer term outcomes. | The sample was comprised of elderly patients (N=155) and nurse practitioners (N=31) at multiple primary care facilities in New England. | Quantitative Longitudinal  Video Observations | When patients arrived for their visits, a member of the research team obtained their informed consent, read the demographic items and SF-12v2 to them, and made note of their responses. The relationship items, satisfaction, recall of NPs’ recommendations, and adherence intention data were collected in the same manner after the visit. Four weeks after the visit, adherence, SF-12v2, and improvement questions were read to patients by telephone. Visits were video recorded using two camcorders on tripods behind and over the shoulder of NPs and patients so that full frontal views of each could be obtained. To reduce reactivity, participants were given the opportunity to view themselves on the camcorders’ screens prior to the visit, and camcorders were unattended by the research team during the visit. | 1, 2 |
| **Results** | | | **Conclusion** | | |
| Patients’ satisfaction with the visit and their intention to adhere to the NPs’ recommendations were high. For the outcome of satisfaction, 16 variables met the initial screening criterion. In the final model, greater satisfaction was associated with higher rates of patients’ approving and agreeing and lower rates of NPs’ expressing concern. Greater satisfaction also was associated with lower rates of NPs’ nonverbal activities during discussions of patients’ presenting problems and greater trust and receptivity and affection, depth, and similarity. For the outcome of intention to adhere to recommendations, 10 variables met the initial screening criterion. In the final model, greater intention to adhere was associated with non-managed care settings as well as higher rates of patients agreeing, higher rates of NPs orienting and instructing such as during a physical exam, and lower rates of patients giving lifestyle information. For the outcome of change in patients’ presenting problems, 16 variables met the initial screening criterion. In the final model, improvement in presenting problems was associated with unstable presenting problems and with higher rates of NPs approving and lower rates of NPs giving lifestyle information. For change in physical health, 14 variables met the screening criterion. In the final model, improved physical health was associated with poorer physical health at baseline and with higher rates of patients giving medical information, higher rates of NPs saying complimentary things about other providers, and lower rates of NPs giving lifestyle information. Improved physical health also was associated with lower rates of NPs coordinating their nonverbal activities with the patients’ nonverbal activities and greater trust and receptivity. For change in mental health, 14 variables met the screening criterion. In the final model, improved mental health was associated with poorer mental health of patients at baseline and more years of NPs’ experience; with higher rates of patients seeking information about their therapy, higher rates of NPs seeking psychosocial information, and lower rates of NPs expressing reassurance and optimism; and with lower rates of NPs coordinating their nonverbal activities with those of patients. The analysis revealed that greater intention to adhere contributed to improvement in patients’ presenting problems at 4 weeks (Estimate=0.93, SE=0.21, t=4.34, p<0.01), but otherwise proximal and longer-term outcomes were not associated at p≤0.05. | | | The findings of this study have four main implications. First, the NPs communicated effectively with older patients around seeking and giving biomedical and psychosocial information rather than that involving lifestyle. Second, research directed at ways to improve older patient-NP lifestyle discussion is needed. Of equal concern are the poorer outcomes associated with high rates of rapport building that may have been perceived as patronizing. Finally, the findings of this study provide partial support for the theoretical framework that guided it. | | |

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| **Citation** | **Study Aim** | **Population/ Setting** | **Study Design** | **Methods** | **Outcome Measures**  1=care processes  2=patient experience  3=patient health indices  4=quality of life  5=cost |
| 159. Gurses AP, Carayon P, Wall M. Impact of performance obstacles on intensive care nurses' workload, perceived quality and safety of care, and quality of working life. *Health Services Research.* Apr 2009;44(2 Pt 1):422-443[159](#_ENREF_159) | To study the impact of performance obstacles on intensive care nurses’ workload, quality and safety of care and quality of working life (QWL). | 265 nurses in 17 ICUs in Wisconsin between February and August 2004 completed a structured questionnaire. | Quantitative  Cross-Sectional  Survey | A 98 item questionnaire developed and pilot tested for this study was distributed by the first author to randomly selected units. Nurses were asked to complete the questionnaire based only on their experiences of that particular shift any time during the last two and a half hours of their shift or right after the shift. The first author waited outside the units during the majority of the data collection period, going inside the units every 30–45 minutes to answer questions. 61 items from the 98-item questionnaire were used for analysis. The questionnaire was designed to measure performance obstacles, workload, perceived quality and safety of care, and QWL constructs as well as the demographic and background variables. Hypotheses were tested using correlation analyses and structural equation modeling. | 1 |
| **Results** | | | **Conclusion** | | |
| Ten of the twelve performance obstacles were significantly correlated with workload: poor physical work environment, dealing with many family-related issues (e.g., many phone calls for nurses from patients’ families and no policy or system is in place on how and when to return these phone calls), disorganized supplies area, seeking for patient charts, delay in getting medications from pharmacy, equipment-related issues, poor workspace design, poor handoffs, inadequate information from physicians, and poorly stocked patient rooms. Nurses who encountered these obstacles over a shift reported experiencing higher workload than those who did not. Workload was negatively correlated with both perceived quality and safety of care and QWL. Nurses who experienced higher workload reported providing lower levels of overall quality of care, detailed nursing care, and safe care, and experiencing higher fatigue and stress. Nurses who reported experiencing any of the following six obstacles also reported experiencing higher workload: poor physical work environment, dealing with many family-related issues, disorganized supplies area, seeking for patient charts, delay in getting medications from the pharmacy, and poorly stocked patient rooms. Workload also mediated the relationships between the outcomes of perceived quality and safety of care and QWL and the following six obstacles: poor physical work environment, dealing with many family-related issues, disorganized supplies area, seeking for patient charts, delay in getting medications from pharmacy, and poorly stocked patient rooms. Among the demographic and background variables, only gender, age, and shift type were significantly related to outcome variables. | | | This study showed that work system characteristics can play a significant role on nursing workload. Even without considering patient acuity, a large amount of variability in workload (40%) was explained by work system characteristics. This finding is significant because a majority of research studies on ICU nursing workload has focused on optimizing nurse/patient ratio primarily based on patient’s clinical condition, and not on improving the ICU work system characteristics. | | |

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| **Citation** | **Study Aim** | **Population/ Setting** | **Study Design** | **Methods** | **Outcome Measures**  1=care processes  2=patient experience  3=patient health indices  4=quality of life  5=cost |
| 160. Guzik A, Menzel NN, Fitzpatrick J, et al. Patient satisfaction with nurse practitioner and physician services in the occupational health setting. *AAOHN Journal.* 2009;57(5):191-197.[160](#_ENREF_160) | To determine if patient satisfaction differed when clinical services were provided by nurse practitioners versus physicians in the occupational health setting. | A convenience sample of 129 patients visiting 7 community-based U.S. occupational medicine clinics for evaluation of a new work-related injury participated in this study | Quantitative  Cross-Sectional  Prospective  Survey | Two instruments measuring patient satisfaction were used in this study: the Visual Analog Scale (VAS) and the 9-item Visit Specific Questionnaire (VSQ-9). The clinic coordinator approached patients post-visit if they met the study inclusion criteria. Surveys were returned anonymously in a survey box prior to the patient leaving the clinic. Comparative statistics were used in the analysis. | 2 |
| **Results** | | | **Conclusion** | | |
| Based on the VAS, overall satisfaction with providers was high (M=89.47, SD=16.86). The VSQ-9 demonstrated that the personal manner of the health care professional (M=87.50, SD=19.59), technical skills (M=84.57, SD=21.31), explanation of what was done (M = 83.66, SD = 23.44), and time spent with the provider (M=77.76, SD=27.32) were also high. Comparing overall satisfaction by provider, Levene’s statistic was not significant (F=0.24, p=0.63), assuming equal variances between groups. The t-test for equality of means between groups indicated no difference in overall satisfaction by provider (t=-0.35, p=0.73). Comparing time spent with provider by provider, Levene’s statistic was not significant (F=0.03, p=0.87), assuming equal variances. The t-test for equality of means by provider indicated no difference in time spent with the provider (t=-0.14, p=0.89). Comparing the health care provider’s explanation of what was done by provider, Levene’s statistic was not significant (F=0.19, p=0.66), assuming equal variances. The results of the t-test for equality of means between nurse practitioners and physicians indicated no difference in the explanation of what was done (t=0.514, p=0.608). Comparing technical skills by provider, Levene’s statistic was not significant (F=0.13, p=0.72), assuming equal variances. The results of the t-test for equality of means by provider indicated no difference in technical skills between nurse practitioners and physicians (t=0.42, p=0.66). Comparing the personal manner of the health care provider by provider, Levene’s statistic was not significant (F=0.99, p=0.32), assuming equal variances. The results of the t-test for equality of means by provider indicated no difference in personal manner between nurse practitioners and physicians (t=0.61, p=0.54). | | | There was high satisfaction with both NP and MD providers. There was no significant difference in overall patient satisfaction between provider types. Results of this study support a practice model using NPS as primary providers in the occupational health setting. | | |

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| 161. Hart L, Mirabella J. A patient survey on emergency department use of nurse practitioners. *Adv.* 2009;31(3):228-235.[161](#_ENREF_161) | To determine the willingness of emergency department (ED) patients, triaged to fast track areas, to be treated by an advanced practice registered nurse. | A convenience sample of 190 patients from 3 Southwestern hospital emergency departments. | Quantitative  Cross-Sectional  Descriptive  Survey | A 1-page survey designed by the research team was distributed to patients as they waited for care in the fast track unit. Each survey contained a cover letter that explained the purpose of the survey, defined a nurse practitioner, and explained that participation was voluntary. The survey requested demographic information, chief complaint, willingness to be treated by an NP for their current condition, experience with care by an NP, and a question regarding if certain conditions would influence their decision to be treated by an NP. | 2 |
| **Results** | | | **Conclusion** | | |
| The majority of patients (n=123; 65%) responded that they were willing to be treated by a nurse practitioner for their current condition. Thirty-two patients (17%) responded that they were not sure whether they wanted to be treated by a nurse practitioner for the current complaint, 33 (17%) indicated they were not willing to be treated by a nurse practitioner for their current condition, and 5 did not respond. If respondents indicated that they were not willing to be treated by a nurse practitioner, they were asked what conditions would influence their decision to be treated by a nurse practitioner. Participants included multiple answers to this question. The majority of participants (N=23; 70%) indicated that if they had a different problem from the one they presented with on this day, they would be willing to be treated by a nurse practitioner. Two (6%) wrote in that they wanted to see only a physician, and four (12%) participants did not answer this question. When asked whether they had been treated by a nurse practitioner before this visit, 108 (56%) responded “Yes,” 42 (22%) responded “No,” and 40 (21%) responded that they were not sure. Of the patients who had been treated by a nurse practitioner in the past, 100 (93%) indicated that they were satisfied with the care they received from a nurse practitioner. Chi-square analysis indicated that willingness  to be treated by an advanced practice registered nurse (APRN) for this ED visit was dependent on whether or not the patient had been treated by a nurse practitioner in the past χ2 (4, N=187) = 12.657, p=0.013. Chi square analysis, at the significance level of less than 0.05, indicated that one’s willingness to be treated by a nurse practitioner was independent of race: χ2 (4, N=188) = 2.707, p=0.608; gender: χ2 (2, N=183) = 1.665, p=0.433; age: χ2 (6, N=188) = 11.026, p=0.088; or ED facility: χ2 (4, N = 190) = 9.199, p=0.056. | | | This survey of ED fast track patients in the Southeastern United States indicated that a majority of patients are willing to be treated by a nurse practitioner. Patients treated by a nurse practitioner in the past indicated that they were satisfied with the care they received. Results of this survey also indicated that patients treated by a nurse practitioner in the past were more willing to be treated at present by a nurse practitioner for ED fast track visit. | | |

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| 162. Hatler C, Buckwald L, Salas-Allison Z, et al. Evaluating central venous catheter care in a pediatric intensive care unit. *American Journal of Critical Care.* 2009;18(6):514-520.[162](#_ENREF_162) | To document the extent of evidence-based practices for central venous catheter (CVC) site care in the pediatric intensive care unit (PICU) and determine the influence of 2 different dressing change regimens on catheter-related bloodstream infections (CR-BSI) rates and costs. | A convenience sample of patients (N=69) and nurses (N=62) in a single PICU at a urban tertiary care center .in Arizona. | Quantitative  Longitudinal  Survey | The study phases included the baseline phase and the dressing-focused phase. The dressing-focused phase encompassed 30 days in which a transparent dressing alone was used for CVC dressings and 30 days in which catheter dressing changes involved a Biopatch plus a transparent dressing. Two data collection instruments were used, including a survey of knowledge for nurses and a data collection form to capture patients’ characteristics. To determine nurses’ knowledge of and beliefs about catheter-related infection control practices, staff nurses were asked to complete a self-administered survey before patient data collection began and again after baseline data collection ended. For our study, a nursing acuity tool was designed from observations of experts and reflected activities most frequently occurring in the PICU. The Pediatric Nursing Acuity Tool included physiological events and care activities such as procedures, medication administration, and patient/ family teaching or support needs. | 1, 3 |
| **Results** | | | **Conclusion** | | |
| None of the study participants developed a documented CR-BSI. For this investigation, the overall rate of CR-BSIs for the months of data collection was 2.5 per 1000 catheter-days. The current infection rate compares favorably with the rate recorded for the unit in the 6 months before the start of data collection (2.8/1000 catheter-days) and with outcomes documented in the literature. In order to evaluate the 2 dressing types, proxy outcome variables were used, including number of days with recorded fever and number of days with elevated white blood cell (WBC) count. Study patients had a mean of 1.20 (SD, 1.59; range, 0-7) days with fever and a mean of 0.6 (SD, 1.19; range, 0-5) days with an elevated WBC count. To examine patients’ outcomes related to dressing type, the authors determined that the groups did not differ significantly in number of days with fever (p=0.18) or in length of time the CVC was in place (p=0.14). A difference was detected, however, in number of days with an elevated WBC count (P<0.01); patients with a transparent dressing alone experienced a mean of 0.31 days (SD, 0.79) and patients with a Biopatch plus a transparent dressing had a mean of 0.82 days (SD, 1.4) with an elevated WBC count. Of interest were the number of medications given per day and the number of blood samples obtained via the CVC per day. A mean of 1.17 (SD, 1.09) blood samples were obtained per day, and a mean of 16.31 (SD, 12.77; range, 1-64) intravenous medications were delivered per day. Because the number of medications delivered via the CVC was a surprising finding, the authors examined this factor more closely. Number of medications delivered within 24 hours was predictive of days with fever (p<0.001), yet not significantly related to elevation in WBC count. | | | The results of this project are compatible with results of a number of investigations within the literature.  Rather than supporting a product-focused approach to preventing CR-BSI, these results point to process-focused interventions. Nurses’ knowledge scores did not substantially improve over the course of the project. | | |

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| **Non-experimental studies (N=97)** | | | | | |
| **Citation** | **Study Aim** | **Population/ Setting** | **Study Design** | **Methods** | **Outcome Measures**  1=care processes  2=patient experience  3=patient health indices  4=quality of life  5=cost |
| 163. Hazard CJ, Callister LC, Birkhead FA, et al. Hispanic Labor Friends initiative: Supporting vulnerable women. *MCN The American Journal of Maternal/Child Nursing.* 2009;34(2):115-121.[163](#_ENREF_163) | To evaluate the qualitative aspects of the Hispanic Labor Friends (HLF) Initiative. | The sample was comprised of women (N=21) in a single community health center in Utah. | Qualitative  Cross- Sectional  Interviews | Audio taped interviews (lasting 45-60 minutes) were conducted at the health center in Spanish for the patients. Interviews were translated and transcribed verbatim. Issues related to rigor in cross-cultural nursing research were addressed, framed by cultural relevance, the sociocultural context of women’s lives, mutual respect, and flexibility. Interviews were also conducted with HLFs and healthcare providers. Interviews proceeded until data saturation was reached. Interview questions were generated based on the goals of the initiative, a review of the literature, and the suggestions of clinic and hospital personnel. | 1, 2 |
| **Results** | | | **Conclusion** | | |
| Answers concerning the cultural and social support received were positive from all the interviewees. Qualitative comments from the study sample supported the fact that women exposed to the HLF program more commonly used healthcare resources appropriately. Women who took part in the program and the HLFs and the healthcare providers felt that care quality had been increased and that communication for informed consent was enhanced for women in the HLF Initiative. Language issues that led to dissatisfaction on the part of patients and healthcare team members had been problematic before initiation of the HLF Initiative, but participation in HLF changed that dynamic. | | | The provision of culturally appropriate social support is critical in the care of Hispanic immigrant childbearing women. Programs such as HLF Initiative, which helps women interact more fully with their healthcare team and feel supported, have the possibility of improving outcomes for mothers and infants. | | |

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| **Non-experimental studies (N=97)** | | | | | |
| **Citation** | **Study Aim** | **Population/ Setting** | **Study Design** | **Methods** | **Outcome Measures**  1=care processes  2=patient experience  3=patient health indices  4=quality of life  5=cost |
| 164. Hill-Kayser CE, Vachani C, Hampshire MK, et al. An internet tool for creation of cancer survivorship care plans for survivors and health care providers: design, implementation, use and user satisfaction. *J Med Internet Res.* 2009;11(3).[164](#_ENREF_165) | To investigate patterns of use and satisfaction with an Internet-based tool for creation of survivorship care plans. | The sample consisted of 3,343 persons (survivors, health care providers and friends/families) utilizing the OncoLink internet based tool. | Quantitative  Longitudinal  Database Analysis | OncoLink is a general cancer information website maintained by physicians and nurses at the Abramson  Cancer Center of the University of Pennsylvania, serving 3.9 million pages to over 385,000 unique Internet Protocol (IP) addresses monthly. OncoLife, a section of OncoLink, was developed by a dedicated team of oncology nurses and physicians. The OncoLife format includes a publicly accessible, five-screen series of 17 queries regarding demographics, cancer diagnosis, and cancer treatments received, and provides users with  lists from which to select surgeries, sites of radiotherapy, and chemotherapy/biologic agents by both generic and trademark names. The anonymous data from OncoLink was analyzed for this study. | 2 |
| **Results** | | | **Conclusion** | | |
| Breast cancer represented the most commonly reported primary cancer diagnosis (45.9%, N=1,537), followed by hematologic (12.0%, N=401), gastrointestinal (11.7%, N=391), gynecologic (8.6%, N=287), and genitourinary malignancies (8.3%, N=278). Overall, 79.8% reported being treated with chemotherapy, 59% with radiotherapy, and 83.5% with surgery. Of 1,869 users who provided information regarding follow-up care, half reported receiving follow-up care only from an oncologist, and only 12.6% (N=235) reported having previously received information on cancer survivorship. The majority of patients having received survivorship information prior to OncoLife were followed by an oncologist: Of these 235 patients, 89.7% reported receiving follow-up care from an oncologist, and 10% only from a primary care provider (PCP). The user satisfaction survey was launched in July 2008, and 150 satisfaction surveys were completed. Of these, 57% (N=86) were completed by survivors or family members/friends of survivors. The remaining 43% were completed by health care providers. Overall, over 90% of users rated their experience and level of satisfaction using OncoLife as “good,” “very good,” or “excellent.” Specifically, 98% of the 65 health care providers rated their experiences as “good” to “excellent.” This was similar to 95% of the 86 survivors/friends/family members rating their experience “good” to “excellent” (probability=0.2, p=0.39). Most users (92%, N=138) felt that they had the information needed to complete the OncoLife questionnaire, and this did not differ significantly between health care providers and survivors/ friends/family members. | | | Based on our experience with implementation of what is, to our knowledge, the first Web-based program for  creation of survivorship care plans, survivors and health care providers appear both willing to use this type of tool and satisfied with the information provided. Most users have never before received survivorship information. Future iterations will focus on expanding accessibility and improving understanding of the needs of cancer survivors in the era of the Internet. | | |

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| **Non-experimental studies (N=97)** | | | | | |
| **Citation** | **Study Aim** | **Population/ Setting** | **Study Design** | **Methods** | **Outcome Measures**  1=care processes  2=patient experience  3=patient health indices  4=quality of life  5=cost |
| 165. Hughes LC, Chang Y, Mark BA. Quality and strength of patient safety climate on medical-surgical units. *Health Care Management Review.* 2009;34(1):19-28.[165](#_ENREF_166) | To describe the climate for patient safety as perceived by registered nurses (RNs) working as direct caregivers on medical–surgical nursing units, selected from a nationwide sample of acute care hospitals. | The sample was comprised of 3,698 direct care nurses on 286 med-surg units in 146 U.S. hospitals. | Quantitative  Cross- Sectional  Secondary data analysis | Data from the Outcomes Research in Nursing Administration Project was analyzed. The data had been collected from nurses who had worked on their unit for > 3 months and provided direct patient care no less than 20 hours each week. Safety climate was measured using four subscales from Zohar’s (1980) Safety Climate Scale as revised by Mueller, DaSilva, Townsend, and Tetrick (1999) and three subscales from the Error Orientation Scale. After data aggregation, item-level scores for each unit were averaged to obtain mean scores for the entire sample. | 1 |
| **Results** | | | **Conclusion** | | |
| Items addressing workgroup commitment to safety received the highest ratings for climate quality and strength, with mean scores ranging from 3.87 to 4.33 and 75% to 89% of respondents in agreement. Similarly, items addressing managerial commitment to safety had the second highest ratings, with mean scores ranging from 3.62 to 3.96 and 67% to 78% of respondents in agreement. Safety participation ranked third in quality and strength. Specifically, climate quality for items from the open communication about errors and error-related problem solving subscales was positive, with mean scores from 3.40 to 3.93 and 3.64 to 3.89, respectively. Consensus in the ratings of these items was moderately strong, with 58% to 81% and 62% to 76% of respondents in agreement, respectively. Although more than 50% of the respondents agreed in their ratings of all items from these two subscales, there were several notable variations in climate strength. Consensus was substantial for two items from the open communication about errors subscale, with 77% and 81% of respondents who agreed that workgroup members communicated with coworkers as a way to immediately ‘‘rectify an error’’ or ‘‘correct a mistake.’’ Climate quality was positive for items addressing safety feedback, with mean scores from 3.12 to 3.60. However, evidence supporting climate strength was limited. Items stating that nurses ‘‘who ensure patient safety are more likely to get a positive evaluation’’ and nurses ‘‘who ignore patient safety regulations will hear about it in their evaluation’’ were positively endorsed by only 57% and 52% of the respondents, respectively. Climate quality was positive for the willingness to reveal errors subscale, with most respondents agreeing with the two positively worded items from this subscale and disagreeing with the two negatively worded items (mean scores from 3.19 to 3.61). However, item-level response distributions provided limited support for climate strength. Finally, safety compliance was the only subscale in which these respondents rated climate quality as poor, with mean scores from 2.80 to 2.98. Despite negative ratings for these items, however, no agreement was found. In fact, respondents, on average, were almost equally divided in their perceptions that job duties have an adverse effect on safety compliance. | | | The findings from this study provide useful information about the quality and strength of the patient safety climate on medical–surgical units. In particular, these results suggest that nursing workgroup and managerial commitment to safety are the two most strongly positive attributes of the patient safety climate on these units. However, issues surrounding the balance between job duties and safety compliance along with nurses’ reluctance to reveal errors continue to be problematic. Future investigation of the patient safety climate on nursing units is needed to clarify relationships among climate quality and strength, employee work behaviors, and patient safety outcomes. In particular, studies to investigate possible quality–strength interactions and the effect of those interactions on patient safety outcomes are warranted. | | |

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| **Citation** | **Study Aim** | **Population/ Setting** | **Study Design** | **Methods** | **Outcome Measures**  1=care processes  2=patient experience  3=patient health indices  4=quality of life  5=cost |
| 166. Hunter LP, Weber CE, Morreale AP, et al. Patient satisfaction with retail health clinic care. *Journal of the American Academy of Nurse Practitioners.* 2009;21(10):565-570[166](#_ENREF_167) | To analyze patient satisfaction with care provided at two retail clinics by family nurse practitioners (FNPs) and physician assistants (PAs). To analyze patient characteristics and preferences of those patients seeking care at two retail clinics. | Patients or parents of minor patients (N= 684) completed an anonymous, voluntary, self-report patient satisfaction surveys after their visit in 2 for-profit medical retail clinics in Arizona (May 2006-July 2007). | Quantitative  Qualitative  Cross-Sectional  Secondary data analysis | Corporate patient satisfaction surveys consisting of eight multiple-choice questions and one open-ended question were given to patients at the completion of their visits from May 2006 through June 2007. The surveys were distributed to every patient receiving care at both clinics and patients were asked to complete and return the survey prior to leaving the clinic or by mail. Surveys at the Phoenix clinic were available in both English and Spanish, while surveys at the Scottsdale clinic were available in English only. Multiple responses were allowed in all but the last question. Completed surveys were secured in a locked office and collected monthly by a company representative. Demographic data and frequencies were calculated. No psychometric testing of the instrument was reported. | 2 |
| **Results** | | | **Conclusion** | | |
| Question number four asked how long patients had waited before being seen by a healthcare provider. Ninety-six percent of all patients indicated that they waited either not at all or less than expected. Sixty-seven percent responded that they did not wait at all (Phoenix Spanish 77%, Phoenix English 54%, Scottsdale 76%), and 29% responded that they waited less than expected (Phoenix Spanish 24%, Phoenix English 41%, Scottsdale 16%). Question number five examined satisfaction with the care provided at the MediMin clinic. Ninety-five percent of all patients indicated that they were very satisfied or satisfied with the MediMin experience. Eighty-five percent indicated that they were very satisfied (Phoenix Spanish 84%, Phoenix English 86%, Scottsdale 84%). Only 4% of respondents indicated that they were not satisfied with the experience (Phoenix Spanish 0.03%, Phoenix English 2%, Scottsdale 1%). The eighth question asked whether patients would visit MediMin again for healthcare needs. Ninety-six percent of the Phoenix Spanish-speaking patients responded ‘‘yes,’’ and 99% of the Phoenix English-speaking patients and the Scottsdale patients responded ‘‘yes’’ to this question. Ninety-eight percent of all patients visiting both clinics responded that they would visit MediMin again for healthcare needs. The last question, number nine, was an open-ended question that asked, ‘‘Do you have any questions or  suggestions as to how to improve MediMin?’’ Only seven respondents offered suggestions for improvement that included longer hours of operation, a larger waiting room, and a second provider to decrease the wait time. Besides numerous reiterations of the low cost, convenience, and accessibility of the clinics, 65 comments were categorized indicating the satisfaction with the healthcare provider such as “very great care,” ‘‘wonderful bedside manner,’’ ‘‘she was very nice and kind to me,’’ ‘‘excellent care,’’ and ‘‘friendly impressive patient service.’’ It was noted, however, that many respondents referred to the healthcare provider as a ‘‘doctor’’ in their qualitative responses. | | | This survey process has communicated important information about the retail clinic environment and patients’ perceptions of the care they receive. The emergence of retail health clinics has been driven by an American healthcare economy that is not currently serving the needs of their clientele. Retail health clinics provide cost-effective, convenient, and timely care for preventative and common primary healthcare needs. Patients are very happy and satisfied with the level of care provided to them by FNPs. Future growth will, in part, hinge on the ability to generate new business for the host store as patients shop for groceries, pharmaceutical products, and other items. | | |

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| **Non-experimental studies (N=97)** | | | | | |
| **Citation** | **Study Aim** | **Population/ Setting** | **Study Design** | **Methods** | **Outcome Measures**  1=care processes  2=patient experience  3=patient health indices  4=quality of life  5=cost |
| 167. Jackson RS, Walker RJ, Varvares MA, et al. Postoperative monitoring in free tissue transfer patients: Effective use of nursing and resident staff. *Otolaryngology - Head and Neck Surgery.* 2009;141(5):621-625.[167](#_ENREF_168) | To determine whether the change in monitoring protocol had an effect on overall flap outcomes and whether nursing staff can safely and effectively monitor free flaps. | Patients in a U.S. tertiary care teaching institution who had undergone free tissue transfer (FTT) were split into two different protocols for after care: Group A (n=49) and Group B (n=45). (August 2003-August 2007) | Quantitative  Cross-Sectional  Historical cohort study | The charts were assessed for patient demographic data, flap donor and reconstruction sites, complications, reoperations, length of intensive care unit (ICU) and hospital stay, and overall flap success rate. Researchers used the American Society of Anesthesiology (ASA) classification system to determine patient preoperative co-morbidity. These variables were separated into two groups, depending on which monitoring protocol was implemented. The resident monitoring protocol (Group A) was in effect prior to July 1, 2006, whereas the nurse monitoring protocol (Group B) was implemented thereafter in an effort to limit resident hours spent monitoring free flaps. | 3, 5 |
| **Results** | | | **Conclusion** | | |
| There was an overall complication rate of 48%, including both medical and surgical complications. In Group A, 28 (57%) patients had at least one medical or surgical complication, while 16 (37%) had at least one complication in Group B (p=0.05). These complications were determined to be major or minor. Major complications included flap hematoma, flap vascular thrombosis, flap necrosis, flap failure, pulmonary embolism, stroke, myocardial infarction, or death. Overall, there were 16 (17%) patients with major complications— evenly distributed between Group A and Group B, with eight patients each. There were 25 patients who required further intervention in the operating room (OR), with an overall revision rate of 27 percent. Eighteen (37%) patients in Group A had to return to the OR, while only seven (16%) had to return to  the OR in Group B (p=0.03). Only 12 (13%) of these patients went back to the OR for concerns of flap viability, such as evacuation of hematoma, exploration of vessels and  reanastomosis, removal of failed flap, and performance of an additional free flap: seven patients in Group A and five patients in Group B. The median length of ICU stay was 3.5 days in Group A and 3.2 days in Group B (p=0.12). In Group A, 77 percent  of the patients were transferred out of the ICU within the first four days. Of these, 42 percent and 37 percent were transferred to the ward within the first and second 48 hours, respectively. In Group B, 79 percent of the patients were transferred out of the ICU in the first four days. Of these, 38 percent and 43 percent were transferred within the first and second 48 hours, respectively. Overall, there were a total of five flap failures, resulting in a success rate of 95 percent. Of the 49 patients monitored  by the resident physicians, there were three failures (6%), one each of fibula, anterolateral thigh, and rectus abdominis free flaps. Of the 45 patients monitored by the nursing staff, there were two failures (4%), one each of temporoparietal and scapula/latissimus dorsi free flaps. There was no statistical difference in flap survival rates on the basis of which monitoring protocol was used (p=0.72). | | | The trained nursing staff proved to be safe and effective free flap monitors, allowing reorganization of the flap monitoring protocol to provide an additional means of maximizing the yield of resident work hours and surgical education. The regulation of resident work hours has not led to poorer outcomes on patients who undergo free flap reconstruction of major head and neck defects in the institution. | | |

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| **Citation** | **Study Aim** | **Population/ Setting** | **Study Design** | **Methods** | **Outcome Measures**  1=care processes  2=patient experience  3=patient health indices  4=quality of life  5=cost |
| 168. Kaempf JW, Tomlinson MW, Campbell B, et al. Counseling pregnant women who may deliver extremely premature infants: Medical care guidelines, family choices, and neonatal outcomes. *Pediatrics.* 2009;123(6):1509-1515[168](#_ENREF_169) | To describe the experience of implementing consensus medical staff guidelines used for counseling pregnant women threatening extremely premature birth between 22 0/7 and 26 6/7 weeks' postmenstrual age and to give an account of family preferences and the immediate outcome of their infants. | The sample consisted of 260 women from a single U.S. tertiary referral center for high-risk obstetric and level 3 NICU care. . Fifty women participated in a post-counseling interview and 25 of them also participated in a follow-up interview 6-18 months later. | Quantitative  Longitudinal  Retrospective chart review and a subset of qualitative interviews | A chart review of all pregnant women admitted to labor and delivery between 22 0/7 and 26 6/7 weeks from June 1, 2003 through December 31, 2005 was conducted to analyze the women’s/family’s preference for NICU care or comfort care both at the time of completion of the initial consultation as well as at the time of the actual birth. In addition, a prospective analysis was performed from August 21, 2003 through September 30, 2004 in a subset of pregnant women who agreed to a post-counseling interview designed to assess their perception and comprehension of the consultation process. The patient survey was administered 3-4 days after the initial consultation. The women were then contacted by telephone 6-18 months after the initial consultation and given the same interview. | 2 |
| **Results** | | | **Conclusion** | | |
| More women (families) requested palliative comfort care as the gestational age decreased. The proportion of women who could not come to a firm initial decision showed minimal variation week to week. At no time did the physicians alter the decision of the women (families) on the basis of the response to bag/mask ventilation or the Apgar scores. All 37 infants provided comfort care died within 5 to 171 minutes; the median time of death was 60 minutes. None of the infants whose parents chose comfort care were given medications or subject to procedures. Infants who lived beyond 30 to 60 minutes had low heart rates with sporadic breaths before death. The process was viewed as highly understandable, useful, and consistent. The women felt comfortable asking the physicians and nurses questions about both obstetric and neonatal issues. Ninety percent (45 of 50 women) indicated they were given enough information to make difficult life support decisions. Fifteen of the women were unable to be interviewed because of relocation, changed telephone numbers, or failure to answer telephone messages. Of these 15 women, 10 chose resuscitation for their infant (3 subsequently died in the NICU), and 5 chose comfort care for their infant. Ten women declined the second interview (8 at the time of the first interview, 2 on follow-up contact). Eight of these 10 women who declined had infants who died (4 comfort care, 4 resuscitated but died in the NICU). Two of the 25 women who consented to the second interview had infants who were resuscitated but died in the NICU, the infants of the remaining 23 mothers all survived. | | | Rational, consensus per viability guidelines are well accepted and can be used by all neonatologists, obstetricians, and nurses who provide care to pregnant women and infants at extremely early gestational ages. Pregnant women see these guidelines as highly understandable, useful, consistent, and respectful. When encouraged to participate with attending staff in discussions involving morbidity and mortality outcomes of premature infants and consensus medical practice recommendations, a substantial proportion of parents will choose palliative comfort care for their extremely premature infant up through 256⁄7 weeks’ postmenstrual age. The authors believe the choice of neonatal intensive care versus palliative comfort care in extremely premature infants rightfully belongs to medically informed parents. More research is needed to examine how these decisions are made under diverse conditions of culture, religion, and technology. | | |

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| **Citation** | **Study Aim** | **Population/ Setting** | **Study Design** | **Methods** | **Outcome Measures**  1=care processes  2=patient experience  3=patient health indices  4=quality of life  5=cost |
| 169. Kain ZN, MacLaren JE, Hammell C, et al. Healthcare provider-child-parent communication in the preoperative surgical setting. *Paediatr Anaesth.* 2009;19(4):376-384.[169](#_ENREF_170) | To document the amount of time healthcare providers spend with children and families on the day of surgery in the perioperative area. | The study was conducted at an outpatient surgery center in a tertiary care medical center in the U.S. 24 children aged 2-10 years and their parent caregiver participated. | Quantitative  Cross- Sectional  Video observations | Children and parents were recruited on the day of surgery. Following informed consent, parents completed a demographic questionnaire, and parents and children were videotaped while they waited in one of two preoperative holding rooms. Holding rooms were equipped with wall-mounted video cameras as a part of a large ongoing National Institutes of Health-supported study examining the effects of behavioral interactions on child’s anxiety. All events within the holding room were electronically monitored by a research assistant using Media Cruise© software in an office located directly across the hall from holding rooms. The camera was directed by the assistant so that all interactions were captured, and recording was stopped once the subject left the holding room for their surgical procedure. The perioperative communication coding system was developed to assess communication between healthcare providers and patients in the perioperative context. Behavior analysis software (Noldus Observer XT) was used to link behaviors to the subject who initiated the behavior. Descriptive and frequency analysis was conducted. | 1 |
| **Results** | | | **Conclusion** | | |
| Results indicate that anesthesiologists spent a median of 6.08 min with a child prior to surgery. Surgeons and nurses spent even less time with families, with median total times of 3.27 and 4.68 min, respectively. This is particularly surprising as these families spent about 45 min in the preoperative area prior to surgery. In terms of behaviors exhibited while in the room, not all healthcare providers engaged in all behaviors being coded. In terms of specific behaviors, all providers engaged in medical talk while in the holding room, but fewer providers engaged in nonmedical talk. All anesthesiologists and 79.0% of surgeons greeted families upon entry to the room. Thirty-eight percent of admitting nurses greeted families in the holding room, but this is likely because they had already greeted families before entering the room. About 50% of the time in holding room was spent in medical talk by all disciplines and only about 6% of this time was spent in rapport-building nonmedical talk. The remaining time was spent without provider talk, in these cases parents may have been talking or providers may have been reviewing the chart. Healthcare providers spent, on average, between 14.5% and 21.0% of their time in the room on eye level with the child. Not surprisingly, the proportion of medical talk directed toward parents was higher than directed toward children for all specialties. Nursing had the closest to an even division. On average, nurses directed 57.0% of their medical talk toward parents and 43.0% of their medical talk toward children. This pattern was reversed for nonmedical talk. Not surprisingly, across specialties, a higher proportion of medical talk was directed toward children as children got older except for surgeons with children in the 7- to 10-year age group. | | | Results of this study suggest that in an environment of high production pressure such as an operating room there is likely a limited amount of time on the day of surgery to interview and prepare patients. Future research that incorporates patient outcomes, including satisfaction, is needed to determine whether the current amount of time available for healthcare providers to spend with children and families is adequate. However, given the importance of preparation and the apparent lack of time for preparation on the day of surgery, the authors submit that there continues to be a need for preoperative preparation programs delivered prior to the day of surgery or that healthcare providers will be given more opportunity to interact with the family on the day of surgery. | | |

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| **Non-experimental studies (N=97)** | | | | | |
| **Citation** | **Study Aim** | **Population/ Setting** | **Study Design** | **Methods** | **Outcome Measures**  1=care processes  2=patient experience  3=patient health indices  4=quality of life  5=cost |
| 170. Kalisch BJ. Nurse and nurse assistant perceptions of missed nursing care: What does it tell us about teamwork? *Journal of Nursing Administration.* 2009;39(11):485-493.[170](#_ENREF_171) | To compare registered nurses’ (RN) versus nurse assistants’ (NA) perceptions of elements of missed care and reasons for missing care and assess how they explained selected issues underlying teamwork between NAs and RNs. | Stage 1 – nursing staff employed and providing direct patient care on 18 units in 1 hospital (633 RNs & 121 NAs) were surveyed.  Stage 2 – 2 RN focus groups, 2 NA focus groups (separate sessions) were held. | Quantitative  Qualitative Cross- sectional | The MISSCARE survey was used to quantify and explain missed nursing care. The focus groups questions centered on the survey results, asking for interpretation of the results and its potential impact on nursing teamwork. Demographic information, questions about work schedules, and satisfaction was also included. The survey results were analyzed using descriptives, frequencies, and mean differences. Qualitative data was analyzed using a grounded theory approach. | 1 |
| **Results** | | | **Conclusion** | | |
| On the overall missed care score, RNs (mean, 1.71 [SD, 0.34]) reported more missed care than NAs (mean, 1.49 [SD, 0.37]) (t752= 6.35, p<0.001). While RNs and NAs should be working together as a team to care for patients (ambulating, turning, etc.), the  general practice is that RNs are responsible for certain tasks, and NAs for others. Therefore, the elements of care in part A of the MISSCARE Survey were categorized as RN, NA, and combined responsibilities. RNs felt that items typically completed by the NA and those activities that are shared between RNs and NAs were missed more than did the NAs felt they were. The perceptions of missed care were similar between RNs and NAs for only 5 (of 24) elements of care (all RN-only responsibilities) in the survey (i.e., medications administered within 30 minutes before or after scheduled time, RN medication requests addressed within 15 minutes, patient assessments performed at each shift, focused reassessments according to patient condition, teaching patients about plans for their care after discharge). RNs reported significantly more missed care than NAs in all remaining elements of care: ambulation, mouth care, intravenous/central line care, documentation, patient bathing or skin care, toileting patients, feeding patient while food is warm, turning, assessing response to medications, providing emotional support, monitoring intake and output, providing wound care, performing vital signs, monitoring serum glucose, and attending interdisciplinary conferences (all p=0.01). RNs also identified more missed responses to call lights and hand washing (both p=0.05). On the other hand, NAs did not identify any areas where they believed more care was missed than RNs. Staff/labor resources were identified as the greatest reason for missed care by both RNs and NAs, with material resources next and communication last. RNs (mean, 3.19 [SD, 0.57]) felt that labor resources were more of a cause for missing care than did NAs (p=0.01). RNs identified an unexpected rise in patient volume, urgent patient situations, and admissions and discharges more frequently than did NAs (p=-0.001). RNs and NAs did not vary significantly on 2 reasons for missing care-level of staffing and the number of assistive personnel. RNs attributed missed care to gaps in material resources more frequently than NAs (p=0.001). While RNs attributed medications, supplies, and equipment availability when needed as more of a reason for missed care than did NAs (p=0.05), NAs and RNs agreed (no significant difference) on the item equipment functioning properly. | | | The discrepancy between RN and NA ratings of missed care along with their critique of what these findings mean demonstrates the lack of several essential key components of teamwork: 1) closed-loop communication, 2) mutual trust, 3) leadership, 4) team orientation, and 5) shared mental models between the RNs and NAs as to what needs to be done for the patient and, even more important, what is being done. | | |

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| **Non-experimental studies (N=97)** | | | | | |
| **Citation** | **Study Aim** | **Population/ Setting** | **Study Design** | **Methods** | **Outcome Measures**  1=care processes  2=patient experience  3=patient health indices  4=quality of life  5=cost |
| 171. Kalisch BJ, Lee H. Nursing teamwork, staff characteristics, work schedules, and staffing. *Health care management review.* 2009;34(4):323-333.[171](#_ENREF_172) | To explore whether and how staff characteristics, staffing, and scheduling variables are associated with the level of teamwork in nursing staff on acute care hospital patient units. | 1,758 nursing staff from a 943 bed academic U.S. hospital and a 120 bed community hospital (38 patient care units) completed the survey in 2008 (77.4% nurses, 11.9% assistive personnel, 7.9% unit secretaries) | Quantitative  Cross-Sectional  Survey | The survey instrument utilized in this study was the  Nursing Teamwork Survey (NTS), a 33-item questionnaire with a Likert-type scaling system from rarely (1) to always (5). The NTS is a newly developed survey designed specifically for inpatient nursing unit teams. The NTSs were distributed to the nursing staff, with a cover letter containing consent information and instructions. All surveys were anonymous. The nursing staff were asked to place the completed survey in a sealed envelope and then into a locked box placed on the unit. Incentives to participate in the study included a candy bar with each survey. Units with a 50% or higher return rate were given a pizza party. Psychometric testing was reported. | 1 |
| **Results** | | | **Conclusion** | | |
| The NTS overall score and four out of five subscale scores were significantly different by type of hospital: trust, t(161.421)=2.042, p<0.05; team orientation, t(1755)=2.769, p<0.01; backup, t(1755)=2.922, p<0.01; shared mental models, t(1756)=4.099, p<0.001; and the overall score, t(162.625)=2.805, p<0.001. The community hospital scored higher on trust (3.63±0.82), team orientation (3.59±0.75), backup (3.76±0.73), shared mental models (4.18±0.61), and the overall score (3.78±0.65) than did the academic health center (3.48±0.69, 3.42±0.70, 3.58±0.70, 3.98±0.57, and 3.62±0.56, respectively). Significant differences were found in the NTS overall score, F(7,1749)=22.519, p<0.001, and the five subscale scores by service types: trust, F(7,1747)=13.098, p<0.001; team orientation, F(7,1748)=14.405, p<0.001; backup, F(7,1748)=22.063, p<0.001; shared mental models, F(7,1749)=18.052, p<0.001; and team leadership, F(7,1745)=21.366, p<0.001. Post hoc analysis revealed that the following types of units ranged from highest to lowest teamwork: maternity, pediatric, and other units; intensive and intermediate care next; adult medical– surgical units; and finally, emergency, survival flight, and transport teams. Staff with less than 6 months experience scored highest on teamwork overall, F(4,1713)=2.971, p<0.05, and on the subscales of trust, F(4,1711)=2.899, p<0.05; team orientation, F(4,1712)=5.400, p<0.001; and shared mental models, F(4,1713)=2.573, p<0.05. For experience on the current unit, again, the staff with less than 6 months experience reported higher levels on the overall teamwork score than did those with more years on the unit, F(4,1696) =7.153, p<0.001. The lesser experienced staff (under 6 months) also reported higher levels of trust, F(4,1694)=5.033, p<0.001); team orientation, F(4,1695) =9.289, p<0.001; shared mental models, F(4,1696)=4.473, p<0.01; and team leadership, F(4,1692)=5.193, p<0.001. Significant differences between the four categories of shift worked (day, evening, night, and rotating) were evident in the overall teamwork score, F(3,1741)=4.38, p<0.01. The subscales of backup, F(3,1740)=8.58, p<0.001, and team leadership, F(3,1737)=3.20, p<0.05, were also significantly different. Post hoc analysis revealed that the night shift group had the highest scores on backup and team leadership, with the day shift and the rotating staff reporting the lowest level of teamwork (p<0.05 to p<0.001). | | | There is a relationship between selected staff characteristics, aspects of work schedules, staffing, and teamwork. Nursing staff want to work where teamwork is high, and perceptions of good staffing lead to higher teamwork. Higher teamwork scores correlated wit those who worked less overtime. | | |

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| 172. Kane JM, Preze E. Nurses perceptions of sub specialization in pediatric cardiac intensive care unit: Quality and patient safety implications. *Journal of Nursing Care Quality.* 2009;24(4):354-361.[172](#_ENREF_173) | To assess the perceptions and preferences of nurses who  currently work in a multidisciplinary pediatric intensive care unit (PICU) regarding the proposed establishment of a dedicated  pediatric cardiac intensive care unit (CICU). | The study was conducted in the 42 bed PICU at Children’s Memorial Hospital, a free standing 247 bed tertiary care hospital in Chicago, Illinois. | Quantitative  Cross Sectional  Survey | A multi-question survey was created and electronically administered via a secure Internet-driven survey tool from June 1 through 30, 2008, to the PICU nurses. Questions were designed to assess perceptions of quality of care delivered, preferred staffing models, perceived knowledge, and educational needs. There was no compensation for participation, and informed consent was implied by completion of the survey. Researchers were blinded to the individual participants’ entries, and  only the composite data were available for analysis.  All notifications were sent with an accompanying  statement including the purpose of the survey, its voluntary nature, and the strict protection of anonymity. Electronic reminders were e-mailed on a weekly basis encouraging nonresponders to participate. The PICU administrative e-mail distribution list was used to identify nurses who were actively employed by the PICU at the time of the survey. No psychometric testing was reported. Descriptive statistics and correlations were conducted. | 1 |
| **Results** | | | **Conclusion** | | |
| With respect to patient care and selection, 80.6% occasionally self-selected their patient  assignments, whereas 12% always self-selected their assignment. A small number  of nurses (17.3%) had been told that they did not have enough training for a specific  assignment. Emergency resuscitation experience was relatively similar among nurses. The majority of nurses surveyed (56.7%) completely or somewhat agreed that “cohorting patients in a dedicated pediatric CICU would improve patient outcomes compared with a multidisciplinary PICU.” However, only a small minority (22.7%) would choose to work exclusively in a pediatric CICU composed of postoperative cardiac patients, and even fewer (13.7%) would choose to work exclusively in a CICU with both medical and surgical cardiac patients. As a point of comparison, 53.6% of nurses would choose to work exclusively in the current multidisciplinary PICU model, and only 1% would choose to work exclusively in a dedicated neurointensive care unit. On the whole, nurses felt less prepared to care for patients with cardiovascular and congenital heart disease than other types of patients commonly cared for in a multidisciplinary PICU including pulmonary/ventilation (mean score 3.96 vs. 3.84,p=0.03) and infectious disease (mean score 3.96 vs. 3.84, p=0.03). Nurses were significantly more willing to attend additional educational programs in cardiovascular and congenital heart disease than all other surveyed types of disease processes seen in the multidisciplinary PICU. Mean scores ranged from 2.89 to 3.34 for other disease categories compared with 3.57 for cardiovascular and congenital heart disease (p=0.001). Specifically, 65.3% of nurses completely agreed that “an optional 2-day lecture series on postoperative cardiac surgery management would improve understanding of the care of these patients.” | | | Cohorting patients in a subspecialty CICU is perceived by nurses as beneficial for optimal patient outcomes; however, creating a core group of dedicated subspecialty nurses to staff these highly technical units may be challenging. Nurses who currently work in multidisciplinary PICUs may not choose to change their practice model because of a perceived deficiency in the knowledge required to care for patients with complex congenital heart disease. Resources should be allocated to address the willingness of nurses to obtain additional education in the postoperative management of cardiac surgery patients. | | |

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| 173. Kendall-Gallagher D, Blegen MA. Competence and certification of registered nurses and safety of patients in intensive care units. *American Journal of Critical Care.* 2009;18(2):106-113.173 | To explore, the relationship between competence of registered nurses, measured by the proportion of staff nurses with specialty certification in the unit, and safety of patients, defined by rates of occurrence of 6 types of adverse events related to nursing care in the intensive care unit (ICU). | 48 adult ICUs (31 medical-surgical, 17 cardiac) in 29 U.S hospitals submitted data in 2000. | Quantitative  Cross-Sectional  Secondary Data Analysis | Hierarchal linear modeling was used in a secondary data analysis of 48 ICUs from a random sample of 29 hospitals. Organizational and nursing characteristics (i.e., hospital magnet status, proportion of certified staff nurses in the unit, mean years of staff nurse experience in the unit, and proportion of staff nurses with a bachelor of science degree in nursing or a higher level of education) and unit rates of adverse events (medication administration errors, total falls, skin breakdowns and 3 types of nosocomial infections) were assessed.  The original study was a retrospective, cross-sectional study on the relationship between nurse staffing patterns and quality of care in 279 inpatient units from 47 community hospital. Data for this study were collected quarterly from unit nurse managers by using 2 questionnaires that addressed nurse staffing, rates of adverse events, and organizational nursing characteristics. | 1 |
| **Results** | | | **Conclusion** | | |
| Unit proportion of certified staff nurses showed little correlation with outcome variables. Nurse education was negatively related to skin breakdown, and nurse experience was positively related to medication administration errors. The total number of hours of nursing care per patient day was positively correlated with both central catheter infections and bloodstream infections. Nurse skill mix was correlated positively with medication administration errors and negatively with urinary tract infections. Multivariate analyses revealed significant associations among outcomes and independent variables, with the associations varying by measure. Proportion of certified staff nurses on the unit was inversely related to frequency of patient falls (p=0.04). Other values of interest were those of urinary tract infections (inverse relationship; p=0.07) and bloodstream infections (positive relationship; p=0.07). For falls, the expected rate with no predictors was 1.1 per 1,000 patient days, with fall rate decreasing by 0.04 for every 1 standard deviation change in the proportion of certified staff nurses in the unit. Urinary tract infection rate decreased by 0.19 and bloodstream infection rate increased by 0.04 for each 1 standard deviation change in proportion of certified staff nurses in the unit. The total number of hours of nursing care per patient day was positively related to medication administration errors (p=0.006). Mean years worked by staff nurses was inversely related to urinary tract infections (p=0.01). The expected rate of medication administration errors with no explanatory variables was 4.82 medication errors per 1,000 patient days, with medication errors increasing by 0.39 for each 1 standard deviation change in total hours of nursing care per patient day. The expected rate of urinary tract infections with no predictors was 2.29 per 1,000 patient days, decreasing by 0.86 with each 1 standard deviation change in mean years of experience of the staff nurses. No significant associations were found for magnet status, nurse education level, and nurse skill mix. | | | Specialty certification and competence of registered nurses are related to patients’ safety.  Even though the sample was small, significant relationships were detected but varied by outcome and direction of relationship. This study was the first in which quantitative data were used to explore the link between nurses’ competence, as measured by certification status, and patients’ outcomes. Further exploration of an empirical link between the cognitive knowledge validated on certification examinations for registered nurses and the safety of patients is recommended. | | |

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| **Non-experimental studies (N=97)** | | | | | |
| **Citation** | **Study Aim** | **Population/ Setting** | **Study Design** | **Methods** | **Outcome Measures**  1=care processes  2=patient experience  3=patient health indices  4=quality of life  5=cost |
| 174. Kim H, Capezuti E, Boltz M, et al. The nursing practice environment and nurse-perceived quality of geriatric care in hospitals. *Western Journal of Nursing Research.* 2009;31(4):480-495[174](#_ENREF_175) | To examine the relationship of nursing practice environments (NPE) to nurse-perceived quality of geriatric care in hospitals using both general  and geriatric-specific NPE scales, while adjusting for hospital and nurse covariates. | The sample was a subset of the NICHE benchmark database – 192 nurses who worked at three nonprofit acute care hospitals located in two metropolitan areas in New York State.  Hospital A: 439-bed nonteaching facility,  Hospital B: 241-bed nonteaching facility,  Hospital C: 695 bed teaching hospital. | Quantitative  Cross-Sectional  Secondary Data Analysis | This is a secondary data analysis of a subset of the Nurses Improving Care for Healthsystems Elders (NICHE) benchmarking database. The measures for both nurse-perceived quality of geriatric care and geriatric-specific nursing practice environment were obtained from the Geriatric Institutional Assessment Profile (GIAP). The GIAP is a 152-item, self-report survey instrument that measures hospitals’ readiness to provide quality geriatric care. The GIAP includes several subscales measuring nurses’ perceptions of the practice environment specific to geriatric care as well as their knowledge of and attitude toward caring for older adults. It also includes nurse demographic and work-related information. General nurse practice environment was measured by the Practice Environment Scale of the Nursing Work Index (PES-NWI). | 1 |
| **Results** | | | **Conclusion** | | |
| Before examining the relationships of the general and geriatric-specific NPEs to nurse-perceived quality of geriatric care, the authors first examined correlations between the general NPE scale and the geriatric-specific NPE (GNPE) scale using Pearson’s correlation coefficients. The correlation between total general NPE score and total geriatric-specific NPE score was –0.186. All of the correlations between each of the five subscale scores of the PES-NWI and each of the three subscale scores of the GNPE were between 0.01 and 0.33. The correlations among the three subscales of the GNPE were low (.25) or moderate (.55 and .62). All but three of the correlations among the five subscales of the PES-NWI were below .60 (range = 0.17 to 0.52); the remaining three correlations were less than 0.70. Total general NPE was negatively related to nurse-perceived quality of geriatric care, but total geriatric-specific NPE was positively related to nurse-perceived quality of geriatric care while adjusting for nurse and hospital covariates. When the authors looked into the subscale models, the model including the three subscales measuring geriatric-specific NPE (adjusted r-square=0.39) explained about 15% more variability in the outcome variable, nurse-perceived quality of geriatric care measured by the perceived extent of ASCD, than the model including the five subscales measuring general NPE (adjusted r-square=0.24). The model including all eight subscales from both general and geriatric-specific NPE scales explained about 58% of the variance in the outcome variable. The subscale with the highest positive standardized beta coefficient was CC (β=0.331), followed by Nurse Participation in Hospital Affairs (β=0.311), Geriatric RA (β=0.222), and IV (β=0.179). Nurse–physician relations and nurse manager leadership were not associated with nurses’ perceptions of quality of geriatric care at the .05 significance level. Staffing and resource adequacy (β=–0.296) and nursing foundation for quality of care (β=–0.263) were unexpectedly negatively associated with nurses’ perceptions of quality of geriatric care. All three subscales of the geriatric-specific NPE were significantly associated with quality of geriatric care when general NPE was adjusted for. | | | This study examined how the hospital NPE is associated with nurse perceived quality of geriatric care and also what aspects of the nursing practice environment are related to quality of geriatric care. The study findings suggest that more favorable perceptions of the geriatric-specific NPE are associated with a high perceived quality of geriatric care. The total and all three subdomains of the geriatric-specific NPE, CC, geriatric RA, and IV were consistently positively related to nurse-perceived quality of geriatric care. This implies that nurses can provide high-quality geriatric care in hospitals where the special needs of older adults are valued, collaborations across disciplines are systematically supported, and various geriatric resources are provided. | | |

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| **Citation** | **Study Aim** | **Population/ Setting** | **Study Design** | **Methods** | **Outcome Measures**  1=care processes  2=patient experience  3=patient health indices  4=quality of life  5=cost |
| 175. Kim H, Harrington C, Greene WH. Registered nurse staffing mix and quality of care in nursing homes: A longitudinal analysis. *Gerontologist.* Feb 2009;49(1):81-90.[175](#_ENREF_176) | To examine the relationship of registered nurse (RN) staff mix to quality of nursing home care measured by regulatory violations using recent 5-year panel data from California (CA) nursing homes. | Data was analyzed from two groups of California freestanding nursing homes from 1999-2003.  Group 1: 201 nursing homes that consistently met the state’s minimum standard for total nurse staffing level.  Group 2: 210 nursing homes that consistently failed to meet the standard over that period. | Quantitative  Longitudinal  Secondary Data Analysis | The study data were drawn mainly from two electronic  databases: California’s long-term care annual cost report (hereafter, the annual cost report) and the Automated Certification and Licensing Administrative Information and Management Systems (ACLAIMS). The deficiency data were obtained from the ACLAIMS database, the computerized California state nursing home licensing and certification database maintained by the CA department of health services (DHS). Registered nurse staffing mix was measured by the RN to total nurse staffing ratio and the RN to Licensed Vocational Nurse (LVN) staffing ratio. Quality of nursing care was measured by the number of total deficiencies and the number of serious deficiencies that nursing homes received in state inspections. The authors also calculated the marginal effects of the staffing mix ratios on deficiencies. | 1 |
| **Results** | | | **Conclusion** | | |
| In the nursing homes that consistently met the state staffing standard, RN to total staffing ratios were not related to total deficiencies, but they were negatively related to serious deficiencies (β=−2.180, p=0.043). Unlike RN to total staffing ratio, as RN to LVN staffing ratios increased, both total deficiencies (β=−0.029, p=0.017) and serious deficiencies (β=−0.273, p=0.017) decreased. Small nursing homes received fewer total deficiencies, but large nursing homes received more total deficiencies than middle-size (60 – 199 beds) nursing homes. Profit status, proportion of Medicare residents, occupancy rates, and chain affiliation were all positively related to the number of total deficiencies in nursing homes meeting the state staffing standard. As for serious deficiencies, nursing homes that were chain affiliated with a higher occupancy rate and those that had a higher number of Medicare residents requiring post-acute care received more serious deficiencies. In the nursing homes that consistently failed to meet the state staffing level standard between 1999 and 2003, RN to total staffing ratios were related to only the number of total deficiencies (β=− 2.130, p=0.000), which is the opposite of findings in the nursing homes that met the standard. RN to LVN staffing ratios were negatively related to total deficiencies (β=−.117, p=0.000) and also to serious deficiencies (β=−0.456, p=.001), which was consistent with what the authors found in the nursing homes that met the standard. A 1-unit increase of the RN to total staffing ratio did not change the number of total deficiencies in nursing homes meeting the standard, but it decreased by about 32.44 the number of total deficiencies in nursing homes that consistently failed to meet the standard over the 5 years. As for serious deficiencies, a 1-unit increase of the RN to total staffing ratio decreased by about 1.17 the number of serious deficiencies only in nursing homes that met the standards. Lastly, a 1-unit increase of the RN to LVN ratio slightly (range 0.15 – 1.79) but consistently decreased both deficiencies in both types of homes. | | | This study provides a new insight on the relationships of nurse staffing level and mix and their associations with quality of care in nursing homes. It demonstrates that a higher RN mix in total staff is important for providing quality care in nursing homes, as reported in the existing literature; but the relationship between RN staffing mix and quality of care is not linear: It is affected by the overall staffing level. In other words, staffing mix and staffing level interact with each other, which influences quality of care. In nursing homes that did not meet the state staffing standard, a higher RN to total nurse staffing ratio had a significantly negative relationship only to total deficiencies; but in nursing homes that met the standard, a higher RN to total nurse staffing ratio had a significantly negative relationship only to serious deficiencies. The authors suggest that this is the first study that demonstrates the interaction effects of nurse staffing mix and levels on quality of care in nursing homes over time using recent large panel data. Further studies are needed to test the evidence found in this study. Such studies can help policymakers and nursing home administrators make better informed decisions on nurse staffing and nursing work environment in nursing homes, thereby ultimately improving the safety and wellbeing of nursing home residents. | | |

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| **Citation** | **Study Aim** | **Population/ Setting** | **Study Design** | **Methods** | **Outcome Measures**  1=care processes  2=patient experience  3=patient health indices  4=quality of life  5=cost |
| 176. Kim H, Kovner C, Harrington C, et al. A panel data analysis of the relationships of nursing home staffing levels and standards to regulatory deficiencies. *The Journals of Gerontology: Series B: Psychological Sciences and Social Sciences.* 2009;64B(2):269-278.[176](#_ENREF_177) | To examine the extent to which nursing staffing levels and compliance with a state’s minimum staffing standard are associated with total deficiencies, quality of care (QoC) deficiencies, and severe deficiencies. | All licensed, freestanding nursing homes in California that received state inspections between 1999-2003 were included in the study. Sample: 4,933 yearly observations of 1,099 Medicare- and/or Medicaid-certified freestanding, skilled nursing homes in California. | Quantitative  Longitudinal  Secondary Data Analysis | This study was a secondary panel data analysis, with the  nursing home as the unit of analysis. The annual cost report data that all licensed nursing homes submit to the California Office of Statewide Health Planning and Development were used to derive measures of staffing, facility, and market characteristics. Nursing home deficiencies were obtained from the Automated Certification and Licensing Administrative Information and Management System (ACLAIMS) database, maintained by the California Department of Health Services. Chain affiliation was obtained from the OSCAR database. | 1 |
| **Results** | | | **Conclusion** | | |
| Hypothesis 1 — that a higher total nursing staffing level would be negatively related to deficiencies — was supported by the data. Adjusting for organizational and market covariates, a higher total nursing staffing level was consistently related to lower total deficiencies (p<0.001), QoC deficiencies (p=0.001), and serious deficiencies (p=0.046). The marginal effects of total nursing staffing level (the effects of a one-unit change in total nursing staffing level) on all three deficiencies were negative and significant, and the extent of the marginal effects was a decrease of 0.419 in the mean number of total deficiencies, 0.276 in the mean number of QoC deficiencies, and 0.024 in the likelihood of receiving serious deficiencies. Hypothesis 2 — that a higher RN staffing level would be negatively related to deficiencies — was supported. RN staffing was negatively related to total (p<0.001) and QoC (p=0.005) deficiencies and also marginally related to serious deficiencies (p=0.051). In contrast, LPN staffing was positively related to total (p<0.001) and QoC (p<0.001) deficiencies but not related to serious deficiencies (p = .254). When the authors examined licensed nurse staffing by combining RN and licensed practical nurse (LPN) staffing, they found it was positively related to total deficiencies (p<0.001) and not related to either QoC (p=0.156) or serious deficiencies (p=0.769). Nursing assistant (NA) staffing levels were negatively related to all three deficiencies, whether RN and LPN staffing were entered into the equations separately or combined (p<0.05). Hypothesis 3 — that meeting California’s nursing home staffing standard would be negatively related to deficiencies — was partially supported. Meeting the standard was associated with a lower number of total deficiencies (p=0.001) and QoC deficiencies (p=0.042) but not with the probability of receiving serious deficiencies (p=0.085). Upon further analysis, the authors found no difference in the probability of receiving serious deficiencies between nursing homes that consistently met the current California nursing staffing standard (n=201, mean=0.54, SD=1.43) and those that consistently failed to meet the standard (n =210, mean=0.52, SD=1.42). Meeting the Centers for Medicare & Medicaid (CMS) recommended staffing standard, 4.1 or more total nursing hours per resident day (HPRD), however, was negatively associated with receiving serious deficiencies (p=0.023). | | | The findings of this study suggest that total nursing staffing level is a predictor of deficiencies and that the current federal and state nursing home staffing standards, which are lower than the standard recommended in a study for the CMS (4.1 total nursing HPRD) (2001), may not prevent serious harm to residents. An important question for future research would be whether there is a point between 3.2 and 4.1 total nursing HPRD that could lead to a significant reduction in serious deficiencies. The study findings also suggest that not only the total nursing staffing standard but also the current RN staffing standard should be examined for effectiveness. The current federal staffing standard requires an RN for only eight consecutive hours a day; however, many homes have a waiver for this requirement. Only 12 states require an RN on duty 24 hr a day, with or without a bed number requirement. Given the latitude permitted to nursing homes with regard to RN staffing, the regulatory standards may be providing nursing homes with a disincentive to hire RNs and permitting them to substitute RNs with LPNs. The findings of this study suggest that the practice of substituting LPNs for RNs may be efficient in cutting labor costs but is not effective in maintaining or improving QoC. Despite concerns about the 25% decrease in average RN staffing levels in nursing homes since 1997, the pressure to reduce Medicaid expenditure in nursing homes and doubts about the effectiveness of higher staffing standards on QoC may be inhibiting discussion of strengthening RN staffing from moving forward. Given the complex nature of staffing and quality, further research on the relationship of RN staffing level to nursing home resident outcomes is needed. | | |

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| 177. Kutney-Lee A, Lake ET, Aiken LH. Development of the hospital nurse surveillance capacity profile. *Research in Nursing & Health.* 2009;32(2):217-228.[177](#_ENREF_178) | To define, operationalize, measure, and evaluate the nurse surveillance capacity of hospitals. | The sample consisted of a 50% random sample survey of RNs (N=9,232) working at 174 hospitals in Pennsylvania in 1999. | Quantitative  Cross-Sectional  Secondary Data Analysis | Nurse surveillance capacity is defined as the organizational features that enhance or weaken nurse surveillance. It includes a set of registered nurse (staffing, education, expertise, experience) and nurse practice environment characteristics. Data reflecting individual patient characteristics were not collected in the survey. A Hospital Nurse Surveillance Capacity Profile was created from the data for each hospital. Nursing demographics (education, clinical expertise, years of experience), number of patients cared for on their last shift, the Practice Environment Scale of the Nursing Work Index (PES-NWI) scale, perceived quality of care provided, and adverse events occurring in patients in the last year were collected. | 1, 3 |
| **Results** | | | **Conclusion** | | |
| Average staffing across all hospitals was just over 5 patients per nurse. On average, one-third of the nurses within a hospital held at least a baccalaureate degree, had over 13 years of experience as an RN, and rated themselves as competent to proficient in their clinical expertise. A low proportion of hospitals (1 in10) had a majority of nurses who rated their practice as proficient or expert (average expertise ≥3.0). Hospitals tended to score highest on the Nursing Foundations for Quality of Care subscale of the Practice Environment Scale of the Nursing Work Index (PES-NWI); the lowest scored subscale was Staffing and Resource Adequacy. Nine percent of hospitals ranked above the 50th percentile on all nurse surveillance capacity indicators. Nurses in the highest ranked hospitals took care of approximately two fewer patients than nurses in the lowest decile of nurse surveillance capacity. Over 40% of the nurses in the highest ranked hospitals had a bachelor’s degree as compared to 20% of nurses in the lowest decile. Nurses in the highest decile of nurse surveillance capacity also rated their clinical expertise higher than those in the lowest grouping. Hospitals in the top decile of nurse surveillance capacity also had more years of RN experience as compared to the bottom decile. Nurses in hospitals in the top decile of nurse surveillance capacity consistently evaluated the nurse practice environment more favorably as compared to nurses in the lowest decile. The differences in means across all five subscales of the PES-NWI were sizable. The largest difference between deciles was observed in the Staffing and Resource Adequacy subscale. In the highest decile, significantly fewer nurses rated the quality of care in their unit as fair or poor, compared with nurses in the lowest decile. Significantly fewer nurses in the highest decile also reported occasional or frequent nosocomial infections and patient falls as compared to nurses in the lowest decile. Our outcome variable mean values in the highest and lowest surveillance capacity deciles were essentially equivalent in the split-sample approach. In the highest decile, 6.6% of nurses rated the quality of care in their unit as fair or poor, compared with 21% of nurses in the lowest decile (p<0.001). Thirty-two percent of nurses in the highest decile reported occasional or frequent infections compared with 48% of nurses in the lowest decile (p<0.01). Finally, 15% of nurses in the highest decile of overall nurse surveillance capacity reported occasional or frequent falls compared to 29% of nurses in the lowest decile (p<0.05). | | | Greater nurse surveillance capacity was significantly associated with better quality of care and fewer adverse events. The results of this study suggest that an organization composed of well educated, expert, and experienced nurses, with adequate staffing and a supportive practice environment promotes quality of care and prevention of two adverse events—falls with injury and nosocomial infections. The hypothesized mechanism for this association is more effective surveillance across individual nurses and over time. The findings from this study suggest that modifying organizational features to support surveillance is a promising strategy for reducing adverse patient outcomes and improving quality of care. The analysis confirmed that the organizational characteristics that foster nurse surveillance are associated with better quality of care and fewer falls with injury and nosocomial infections based on self-reports from nurses. Hospitals in the highest and lowest deciles of overall nurse surveillance capacity indicators were compared relative to quality of care and adverse events. Nurses in the highest ranked hospitals of nurse surveillance  capacity reported better quality of care and less frequent nosocomial infections and patient falls with injuries | | |

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| **Non-experimental studies (N=97)** | | | | | |
| **Citation** | **Study Aim** | **Population/ Setting** | **Study Design** | **Methods** | **Outcome Measures**  1=care processes  2=patient experience  3=patient health indices  4=quality of life  5=cost |
| 178. Kutney-Lee A, McHugh MD, Sloane DM, et al. Nursing: a key to patient satisfaction. *Health Affairs.* 2009;28(4):w669-677.[178](#_ENREF_179) | To examine the contribution of nurses’ work environments to patient satisfaction using national Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS) data. | The sample consisted of staff nurses (N=20,984) in 430 hospitals. Responses from individual nurses were aggregated to create hospital level measures of the nurse work environment and hospital-level patient-to-nurse workloads. | Quantitative  Cross- Sectional  Survey  Database Analysis | The study included all acute care hospitals in California, Pennsylvania, New Jersey, and Florida that (1) reported HCAHPS data to the CMS for the first public release period (October 2006–June 2007); (2) had structural characteristics reported in the 2005 American Hospital Association (AHA) Annual Survey; and (3) had nurses who responded to the University of Pennsylvania Multi-State Nursing Outcomes Study. The nurse work environment was measured using three of the five subscales of the Practice Environment Scale of the Nursing Work Index (PES-NWI).The PES-NWI subscales used to measure the nurse work environment include items related to nursing leadership, nursing standards for high-quality patient care, and nurse-physician relationships. A two stage sampling design – a mailed survey (Dillman approach was used – 36% response rate) followed by a random sample of non-responders drawn to receive a shortened survey, telephone reminders and a monetary incentive (91% response rate) | 2 |
| **Results** | | | **Conclusion** | | |
| Nurses who worked in poor environments cared for an average of 5.3 patients, while nurses in the better environments had an average workload of 4.6 patients. Patient satisfaction had significant positive associations with the quality of the work environment for nine of the ten measures. The most notable difference involved the percentage of patients who would definitely recommend the hospital. On this global measure, there was a ten-percentage-point difference in the mean percentage of patients who would definitely recommend the hospital between those cared for in hospitals with better nurse work environments (69.9 percent) than those cared for in hospitals with poor environments (59.6 percent). The nurse work environment had significant effects on all ten HCAHPS measures in both sets of models. Nurse staffing was statistically significant (p< 0.05) on five outcomes in the unadjusted and three outcomes in the adjusted models. The most notable effects of the nurse work environment and nurse staffing were on the global ratings of the percentage of patients who would definitely recommend the hospital. The estimate of 4.08 implies that the percentage of patients who would definitely recommend the hospital was more than 8 percentage points higher in better care environments as compared to poor and more than 4 percentage points higher in better nurse work environments as compared to mixed. The effect of nurse staffing above and beyond the effect of the quality of the overall nurse work environment demonstrated that for each additional patient per nurse, the percentage of patients who would definitely recommend the hospital decreased by 1.44 percent. Given that the standard deviation of this global measure was 9.8 percent, hospitals that improved their nurse work environments from poor to better and reduced nurses’ workloads by one patient would be expected to move, in terms of the percentage of patients who would definitely recommend their hospital, from the sixteenth percentile to the fiftieth (or from the fiftieth percentile to the eighty-fourth) in this distribution of hospitals. | | | The nursing work environment was significantly related to all HCAHPS patient satisfaction measures. This is the first study to explore in detail the relationship between hospital nurses’ work environments, staffing levels, and the new HCAHPS patient satisfaction measures. Examination of the HCAHPS measures in our sample suggests that most hospitals need improvement in areas that are important to patients. As has been reported by others, one-third of patients would not recommend their hospital to friends or family members. The quality of the nurse work environment, unmeasured in a previous report of the effects of nursing on HCAHPS measures, was found to be associated with all ten measures of patient satisfaction and strongly related to whether patients would definitely recommend the hospital. Additionally, the authors showed that patient-to-nurse ratios in hospitals affect patient satisfaction, especially the measures for high rating, definite recommendation, and satisfaction with receiving discharge information. | | |

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| **Non-experimental studies (N=97)** | | | | | |
| **Citation** | **Study Aim** | **Population/ Setting** | **Study Design** | **Methods** | **Outcome Measures**  1=care processes  2=patient experience  3=patient health indices  4=quality of life  5=cost |
| 179. Leekha S, Thomas KG, Chaudhry R, et al. Patient preferences for and satisfaction with methods of communicating test results in a primary care practice. *Joint Commission Journal on Quality & Patient Safety.* 2009;35(10):497-501.[179](#_ENREF_180) | To evaluate primary care patients’ preferences  regarding and satisfaction with notification methods for routine blood test results and to determine the relationship of  those preferences and satisfaction levels with patient and practice characteristics. | 888 patients for whom routine blood tests were performed in the primary care internal medicine division at the Mayo clinic Rochester, Minnesota between January and March 2006 participated in this study. | Quantitative  Cross-Sectional  Survey | The author developed questionnaire contained 12 items, 3 of which had subparts, resulting in 16 questions that solicited the following: recall of blood test(s), relationship with the provider, understanding of test purpose, anxiety to learn test results, time to receipt of test results, method(s) used to communicate test results, “preferred” and “acceptable” methods of test-result communication, satisfaction with various aspects of the current communication process, and education level Surveys were mailed between two and four weeks after the blood draw to allow adequate time for test performance and result notification. | 2 |
| **Results** | | | **Conclusion** | | |
| Most (703 [85%]) of 824 respondents were seen by their designated primary care providers during their visits. Most patients reported that their provider’s explanation of the purpose of the blood tests was either very easy (78%) or somewhat easy (15%) to understand. Some 639 (78%) of 820 respondents reported some level of anxiety to learn their test results; (14% “very anxious,” 26% “somewhat anxious,” and 38% “anxious”), whereas 22% were “not at all anxious.” Overall, 802 (92%) of the 888 respondents reported receiving their test results. Among 333 patients who recalled the exact date of  receipt of test results, the median time to receipt of results was 4 days (range, 0–54 days). Among 515 patients who reported approximate time to receipt of results, 74% had received their results within a week, 23% in 1–2 weeks, 2% in 3–4 weeks, and  1% after 5 weeks or more following the test. Test-result notification occurred by telephone call (43%), return visit (35%), letter (3%), e-mail (0.1%), or a combination of two or more methods (19%). Most telephone calls (60%) were handled by nurses. Overall, 357 (44%) of 807 patients received results by their preferred method. This was more likely to occur among those patients whose preferred method was return visit (80%) or phone call from nurse or any provider (62%) and less likely among those who preferred phone call from physician or nurse practitioner (39%), letter (13%), or e-mail (3%). Patient satisfaction was assessed in the following five aspects of the result notification process: method of communication, communicating person, timeliness of communication, amount of information provided, and follow-up plan. Overall, 102 (13%) of 712 respondents reported some level of dissatisfaction with at least one aspect of the notification process, most frequently with timeliness of communication. A longer time to receipt of test results was significantly associated with dissatisfaction with timeliness of communication (p < .001). Patients who did not receive results by their preferred method were more likely to be dissatisfied with the method of communication than those who reported receiving results by their preferred method (10% versus 5%, p=0.01). A “dose response” of decreasing levels of understanding of test purpose with increasing rates of dissatisfaction with each aspect of the notification process was noted (all p-trend<0.01). | | | The results describe primary care patients’ preferences for communication from their providers. Disparities exist between current practice and patient preferences in this important care delivery process. A telephone call from a physician or nurse practitioner was used to deliver test results for fewer than half of the patients who preferred to receive their results by this method. Future work should explore reimbursement of patient-preferred options and assess ways to improve resource-conscious test result communication methods. | | |

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| **Non-experimental studies (N=97)** | | | | | |
| **Citation** | **Study Aim** | **Population/ Setting** | **Study Design** | **Methods** | **Outcome Measures**  1=care processes  2=patient experience  3=patient health indices  4=quality of life  5=cost |
| 180. Lester P, Stefanacci RG, Chen DG. Nursing home procedures on transitions of care. *Journal of the American Medical Directors Association.* 2009;10(9):634-638.[180](#_ENREF_182) | To identify nursing home standards through a nationwide survey of directors of nursing regarding transitions of care for residents transferred from acute care hospitals to skilled nursing facilities (SNFs). | 241 directors of nursing of SNFs recruited from a national sample participated in this study. | Quantitative  Cross-Sectional  Survey | A national survey was conducted online through National Association Directors of Nursing Administration/Long-Term Care (NADONA/LTC).. The author developed survey was anonymous and participation was voluntary. The directors of nursing answered questions concerning their types of contact with referring hospitals including the role of individuals in directing admissions to the facility, the responsibilities of varied members of the care team on the admissions process, and the types of records sent from hospitals. It also surveyed the role of the attending physician, admitting nurse, long-term care pharmacy, and pharmacist. | 1 |
| **Results** | | | **Conclusion** | | |
| The results of the survey demonstrated widespread use of an admission coordinator in the nursing home to direct admissions to the facility. Admission nurses consistently had the most responsibility for ascertaining the correct medication regimen on admission to the facility. Although there was a variation in types of records received from the hospitals, more than 80% received medication administration record or discharge/transfer sheet within 1 hour of a patient’s arrival. | | | The results of this survey demonstrate that although direct verbal communication is not customary, communication via paper documentation of transfer information is highly prevalent with statistically increased likelihood of the SNF receiving the discharge/ transfer sheet and the last medication list when affiliated with the transferring hospital. Nevertheless, ongoing attention to this vital issue is needed to further improve communication and transition of care effectiveness in order to minimize errors that affect patient care. Perhaps widespread use of electronic medical records and reimbursement changes may alleviate some of the challenges related to providing appropriate transitions of care. | | |

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| **Citation** | **Study Aim** | **Population/ Setting** | **Study Design** | **Methods** | **Outcome Measures**  1=care processes  2=patient experience  3=patient health indices  4=quality of life  5=cost |
| 181. Lopez RP. Decision-making for acutely ill nursing home residents: Nurses in the middle. *Journal of Advanced Nursing.* 2009;65(5):1001-1009.[181](#_ENREF_183) | To explore and describe the  decision-making process used by nursing home (NH) nurses to respond to acute illness in NH residents and to develop a theory grounded in the experiences of nurses involved in the process. | Data was collected in 2004 in four nursing homes in the U.S. A purposive sample of 10 nurses (4 LPN, 3 RN, 3 NP) were recruited. | Qualitative  Cross-Sectional  Grounded Theory  Interviews and Observation | Grounded theory methods were used for data collection and analysis. Data were collected in 2004. In-depth semi-structured interviews took place in a quiet location in the NH and were audio taped and later transcribed and checked for accuracy by the investigator. The interviews lasted from 20 to 45 minutes. Initially, the interview questions were broad and were used to explore the nurses’ experiences with decision-making, such as ‘Tell me about what happens when a resident in the NH becomes acutely ill’. As the study progressed, the questions became more focused to test hypotheses and the emerging theory. Observations and conversational interviews took place as nurses worked distributing medications, interacting with nursing assistants, and talking with residents, family members and doctors. Observations served to triangulate and corroborate interview data. | 2 |
| **Results** | | | **Conclusion** | | |
| The goal of grounded theory research is to develop a substantive theory that describes and explains basic social psychological processes occurring in response to problematic  situations. In this study, the basic social problem experienced by nurses was how to create a plan of care to address residents’ acute illness. Nurses felt that they were ‘in the  middle’ as they wished to create a plan that was acceptable to family members and doctors and consistent with the preferences and comfort needs of residents. The basic social psychological process capturing efforts by nurses to address the desires of family members, doctors and residents was satisfying all sides. This process assured a treatment plan believed to be consistent with the wishes of family members and producing the least amount of suffering for residents. Satisfying all sides had four phases: weighing the significance; notifying the family; feeling it out; and playing the middleman. | | | The study highlights some of the competencies and skills that nurses require to serve as effective guides for family members. To weigh the significance of acute illness in frail older adults, they also need excellent clinical assessment and judgment skills. In addition, to notify and feel out family members, nurses need strong communication skills; to work effectively with doctors strong collaborative skills are also necessary. To improve communication, nurses should examine the symbolic meaning of do not resuscitate (DNR) orders and their own assumptions about palliation. This study may serve as a first step in unveiling the covert process and serve to encourage nurses to engage in open and honest communication. | | |

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| **Non-experimental studies (N=97)** | | | | | |
| **Citation** | **Study Aim** | **Population/ Setting** | **Study Design** | **Methods** | **Outcome Measures**  1=care processes  2=patient experience  3=patient health indices  4=quality of life  5=cost |
| 182. Lucero RJ, Lake ET, Aiken LH. Variations in nursing care quality across hospitals. *Journal of Advanced Nursing.* 2009;65(11):2299-2310.[182](#_ENREF_184) | To describe Registered Nurses’ (RN) reports of unmet nursing care needs, and examine the variation of nursing care quality across hospitals. | This secondary analysis was conducted on nurses (N=10,184) in Pennsylvania hospitals (N=168) who had participated in the parent study conducted in 1999. | Quantitative  Cross-Sectional  Secondary Data Analysis | The parent study mailed a to the homes of a 50% random sample of RNs who resided in Pennsylvania and were on the rolls of the Pennsylvania State Board of Nursing. Demographic information including gender, age, experience, highest nursing degree, and employment status was collected in the original survey of Pennsylvania Registered Nurses. The Practice Environment Scale of the Nursing Work Index (PES-NWI) was used as a measure of the nursing organization. Unmet nursing care needs were measured based on Registered Nurses’ reports of necessary nursing care left undone. | 1 |
| **Results** | | | **Conclusion** | | |
| On average, nurses in this study cared for six patients during their last shift. Based on the Practice Environment Scale of the Nursing Work Index (Lake, 2002) subscale scores, most nurses reported that Nursing Foundations for Quality of Care and Collegial Relations between Nurses and Physicians were present in their care environment. Among the seven care needs left undone captured in this study, developing or updating  nursing care plans was the activity left undone by most nurses. This was followed closely by comforting/talking with patients (40.3%), back rubs and skin care (31.7%), teaching patients and family (28.5%), adequately documenting nursing care (21.4%), oral hygiene (20.8%), and preparing patients and families for discharge (12.9%). The proportion of RNs reporting leaving nursing care needs undone across hospitals was nearly identical to the overall individual reports. On average, 41 percent left developing or updating nursing care plans undone and 12 percent left preparing patients and families for discharge undone. The range of unmet nursing care needs varied from as low as 26% for preparing patients and families for discharge to as high as 74% for developing or updating nursing care plans in some hospitals. The variation of nurses reporting leaving developing or updating nursing care plans undone was slightly right-skewed across the 168 hospitals. A composite measure of unmet nursing care needs was constructed to evaluate the variation of the quality of nursing care across hospitals. The internal consistency of this composite measure was confirmed with a Cronbach’s alpha coefficient of 0.73. Across hospitals, RNs reported leaving an average of 2 out of 7 nursing care activities undone, with a range of 0.2 to 3.5. This variation was statistically significantly greater for unmet nursing care needs across hospitals than within hospitals (df=167, F=3.49). The composition of the nurses in hospitals did not affect the statistical significance of the variation across hospitals. The F value for unmet nursing care needs (df=167, F=3.17) exceeded the critical value at the 0.001 level of probability across hospitals. | | | This study was an innovative approach to evaluate the quality of nursing care across hospitals. Unlike nursing care quality based on Donabedian conceptualization, unmet nursing care needs has rarely been used to measure nursing care quality. While there is a clear distinction between nursing care done for patients versus nursing care left undone, the empirical evidence from this study supports the theoretical underpinnings of Donabedian quality paradigm which have been recognized internationally. Evaluating nursing care quality based on nursing care deficiencies may be more congruent conceptually in a care  environment characterized by poor nurse staffing and higher than average adverse event rates. Research on the determinants of unmet nursing care needs can support policy decisions on systems and human resources management to enhance nurses’ awareness of their care practices and the care environment. These policies could support nurses’ capacity to identify unsafe situations and minimize or eliminate potential harm to patients. This is especially important not only because evidence from this study supports the hypothesis that  variations in nursing care quality reflect differences in hospital care environments, but also due to nurses’ ongoing concern about spending insufficient time with patients. | | |

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| **Citation** | **Study Aim** | **Population/ Setting** | **Study Design** | **Methods** | **Outcome Measures**  1=care processes  2=patient experience  3=patient health indices  4=quality of life  5=cost |
| 183. Magnan MA, Maklebust J. Braden scale risk assessments and pressure ulcer prevention planning: What's the connection? *Journal of Wound, Ostomy and Continence Nursing.* 2009;36(6):622-634.[183](#_ENREF_185) | To investigate the relationship between risk assessment scores on Braden subscales and nurses’ selection of 10 commonly used best practice pressure ulcer (PU) preventive interventions. | The sample consisted of 377 Braden scale risk assessments for 102 patients at different levels of risks in three different acute care hospitals in Michigan conducted between November 2005-February 2007. | Quantitative  Cross-Sectional  Secondary Data Analysis | Nurses used the Braden Scale to conduct a PU risk assessment on the patient. Then, immediately after completing the Braden Scale risk assessment, the nurses went on to complete the author developed Registered Nurses Intervention Checklist (RNIC) by checking off which preventive interventions “should be implemented” based on their assessment of Braden Scale risk factors. Data was analyzed using logistic regression models. | 1 |
| **Results** | | | **Conclusion** | | |
| Braden subscale ratings influenced nurses’ endorsement of preventive interventions in 2 distinct ways. First, endorsement of most (9 out of 10) preventive interventions was  influenced by risk information embedded in unique combinations of Braden subscale assessments. Second, there appears to be a predictable pattern of increase in the likelihood of endorsing an intervention as Braden subscale scores decreased and the level of risk increased. | | | Variability in Braden subscale ratings differentially predicts nurses’ endorsements of selected PU-prevention interventions. Also, there is a predictable pattern of increase in the likelihood of endorsing a preventive intervention as PU risk levels increase, a pattern that may be related to timing of risk assessment and PU-prevention planning activities. The authors suggest that this is the first study to provide empirical support for the purported relationship between Braden Scale PU risk assessment data and prevention planning. Results suggest that Braden subscales differentially predict endorsement of preventive interventions and an increased likelihood of endorsing a preventive intervention as risk level increases. | | |

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| **Citation** | **Study Aim** | **Population/ Setting** | **Study Design** | **Methods** | **Outcome Measures**  1=care processes  2=patient experience  3=patient health indices  4=quality of life  5=cost |
| 184. Manojlovich M, Antonakos CL, Ronis DL. Intensive care units, communication between nurses and physicians, and patients' outcomes. *American Journal of Critical Care.* 2009;18(1):21-30.[184](#_ENREF_186) | To determine the relationship between nurses’ perceptions of elements of communication between nurses and physicians and rates of selected outcomes (pressure ulcers, ventilator-associated pneumonia (VAP), bloodstream infections associated with central catheters (BSI)), and the relationship of characteristics of the practice environment to rates of the same 3 outcomes. | A convenience sample of 25 ICUs from several Michigan hospitals were surveyed in 2005. 462 nurses participated. | Quantitative  Cross- Sectional  Survey | A cross-sectional survey design was used to query  nurses on their perceptions of magnet-hospital properties  and workplace empowerment in the work environment and on the effectiveness of communication between nurses and physicians. Workplace environment was measured with the Conditions for Work Effectiveness, version II; the Job Activities Scale II, and the Organizational Relationships Scale II. The Practice Environment Scale of the Nursing Work Index was used to measure magnet hospital properties. Operational definitions from the National Quality Forum were used for all patient outcomes. Data was aggregated to the unit level. | 3 |
| **Results** | | | **Conclusion** | | |
| The total communication scale was not significantly related to any outcome. However, the timeliness of communication trended toward significance in its inverse association with pressure ulcers (r=-0.38, p=0.06), suggesting that as the timeliness of communication increased, the prevalence of pressure ulcers decreased. When the standard deviations of communication subscales were tested for associations with outcomes, a significant relationship between the standard deviation of variability in understanding and VAP emerged (r=0.43, p=0.03). This result suggests that the greater the variance in nurses’ perceptions of understanding communication with physicians, the greater are the rates of VAP on a particular unit. Because several associations were significant, multiple regression models were generated to test possible predictors of the 3 outcomes (VAP, BSI, and pressure ulcers). APACHE III scores and capacity utilization emerged as control variables that were significantly associated with VAP in bivariate tests. A regression model is also presented for pressure ulcers and communication timeliness, even though the bivariate association was not significant. hours of nursing care provided per patient day (HPPD) was positively associated with BSI (r=0.46, p=0.02), but because BSI did not correlate significantly with any other predictor, it was not modeled by using regression. Neither staffing mix nor HPPD was associated with any other outcome. Each regression model was limited to 2 independent variables because of the small sample (25 ICUs), so various combinations of independent variables were entered in models 1 through 3. Model 2 explained about 27% of the variance in VAP, with the predictors of variability in understanding communication and capacity utilization. In order to address the second aim, the correlation matrix was reexamined for significant associations between work environment characteristics and the same 3 outcomes. A significant association was found between workplace empowerment and VAP, but not in the expected direction (r=0.56, p=0.003). Magnet-hospital properties were not significantly related to any outcome. Multiple regression models with workplace empowerment as the predictor also included APACHE III scores and capacity utilization as significant control variables. Models 4 and 5 both predicted 36% of the variance in VAP. | | | Results of analysis of the communication subscale suggest that with a larger sample, significant influences of communication on pressure ulcers might have been found. However, engaging in communication with physicians is just one of many processes or functions that nurses perform while caring for patients. Processes other than communication may be more closely linked to adverse outcomes, but specific nursing care processes that improve or worsen patients’ outcomes have rarely been studied. The problem of adverse outcomes continues, but through studies such as these, a few answers are beginning to emerge. | | |

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| **Citation** | **Study Aim** | **Population/ Setting** | **Study Design** | **Methods** | **Outcome Measures**  1=care processes  2=patient experience  3=patient health indices  4=quality of life  5=cost |
| 185. Marsteller JA, Burton L, Mader SL, et al. Health care provider evaluation of a substitutive model of Hospital at Home. *Medical care.* 2009;47(9):979-985.[185](#_ENREF_187) | To evaluate the hospital at home (HaH) model from the perspective of the physicians and nurses who delivered this care. | The sample was comprised of physicians and Registered Nurses (N=189) work with the Johns Hopkins HaH program. At least one physician survey was completed for 80 (95%) patients and at least 1 nurse survey was completed for 69 (82%) patients. | Quantitative  Cross-Sectional  Survey | The Johns Hopkins Hospital HaH provides hospital-level care in a patient’s home for community-dwelling patients, aged 65 and older, who require hospital admission for community-acquired pneumonia, exacerbation of congestive heart failure, exacerbation of chronic obstructive pulmonary disease, and/or cellulitis, and who met specific medical eligibility criteria. A 2 page, 16-18 question survey was developed for the study to assess the patient confidence in the HaH program, family confidence, the home environment, the safety of staff and the patient’s clinical course, amongst other questions. | 1 |
| **Results** | | | **Conclusion** | | |
| Among questions answered by both provider types, there were no major problems with staff safety and only 1 major problem with family confidence in HaH. There were no  statistically significant differences between provider types in any item-level problem with care. No major problems were cited by physicians for ordering diagnostic tests or obtaining test results and nurses reported no major problems in getting information and direction from the physician. In general, providers participating in HaH cited few problems with care beyond minor ones. Altogether, a major problem was cited  only 26 times over 190 surveys collected; the issues raised affected a total of 14 patients (17%). Several of these mentions were in reference to the same incident, reported in  several items. For these 14 patients, details of the major events were as follows: 2 events were related to intravenous access problems; 6 events were related to durable medical equipment delivery delays (all delays were brief, and no adverse clinical outcomes occurred); and 1 event was related to a communication issue between providers. In addition, there were 5 issues stemming from patient characteristics: 1  patient with dementia and agitation; 1 with morbid obesity; 1 with significant anxiety disorder; 1 who was not receptive to home nurse visits; and 1 who fell at home. Finally, in 2 cases, the home environments were described as unclean. Providers were specifically explicit about potential advantages of HaH, relative to usual care, related to possible quicker return to physical functioning, opportunities for teaching, and communication with family members. In addition, providers wrote in additional positive effects on 40 surveys. The most frequently cited advantages were related to the patient being happier, more comfortable, or safer at home (17 cases), reduced family stress having the patient at home (5 cases), and advantages of evaluating the patient in the home environment (4 cases). Nurses were more likely than physicians to report increased opportunities for patient education, and to report being uncertain about whether the patient had quicker return to physical function. The problem-free index, measuring (the lack of) problems with care was distributed toward the high end (higher scores are better) with 0.5% of cases (n=1) scoring 0; 1% (n=2) scoring 1; 3% (n=5) scoring 2; 13% (n=24) scoring 3; 18% (n=33) scoring 4; and 66% (n=124) scoring 5). The index had a mean of 4.4 and a median of 5. Table 5 indicates that respondents in site 1 reported higher problem-free scores. As shown by the interaction term, nurses in that site had a statistically significantly lower problem-free index than physicians did, controlling for other influences and for clustering on patient. | | | This study demonstrates that HaH was well regarded by health care providers engaged in the model. However, differences in nurse and physician perspectives are seen in this new model of care as elsewhere in health care systems. From a care and policy viewpoint, understanding the perspectives of interdisciplinary care team members about HaH will help future HaH adopter organizations develop intentional strategies to build maximally effective care teams. Such strategies might include communication supports such as regular meetings and use of checklists or forms. Finally, opening a dialogue between the provider types could resolve differences in opinion, provide further opportunities for improvement in the HaH model, and offer insights relevant to its dissemination into widespread practice. | | |

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| **Citation** | **Study Aim** | **Population/ Setting** | **Study Design** | **Methods** | **Outcome Measures**  1=care processes  2=patient experience  3=patient health indices  4=quality of life  5=cost |
| 186. Mazzocco K, Petitti DB, Fong KT, et al. Surgical team behaviors and patient outcomes. *Am J Surg.* May 2009;197(5):678-685[186](#_ENREF_188) | To determine if patients of teams with good teamwork had better outcomes than those with poor teamwork. | The study was conducted in 2 operating rooms in 2 medical centers and 2 ambulatory surgical centers affiliated with the Kaiser Foundation Health Plan. 293 patients and procedures were observed. | Quantitative  Cross-Sectional  Observations | Nurse observers used a standardized instrument to assess team behaviors. Retrospective chart review was performed of measure 30 day outcomes. The training of the observers included an overview of behavioral observation and perioperative teamwork and a series of calibration exercises whereby observers watched video clips of team behaviors, rated the frequency with which the behaviors occurred on the data collection form used in the study, and then debriefed the exercise to discuss discrepancies and verbally justify their ratings. The instrument used in the study assessed the following behavior domains: briefing, information sharing, inquiry, assertion, vigilance and awareness, and contingency management. For each procedure/team, the behavioral marker data were summarized by using a single score, the Behavioral Marker Risk Index. | 3 |
| **Results** | | | **Conclusion** | | |
| For most of the phases and domains, good team behaviors were observed frequently or always (scores 3-4) in a substantial percentage of procedures; however, for none of the phases or domains were good teams behaviors observed frequently or always all of the time. The odds rations (Ors) for complication or death were greater than 1.0 when team behaviors were observed less frequently (scores 0-2) in all operative phases and behavioral domains except the briefing domain of the intraoperative phase and the vigilance domain of the handoff domain. The OR estimates for complication or death excluded 1.0 in association with low scores for the information sharing domain of the intraoperative phase (OR 2.45; 95% CI, 1.36–4.42) and for the briefing and information sharing domains of the handoff phase (OR 2.34; 95% CI, 1.23– 4.46 and OR 2.21; 95% CI, 1.18–4.16, respectively). The elevated OR for complication or death was close to excluding 1.0 in association with a low score for the vigilance domain of the induction phase (OR 2.08; 95% CI, 0.99–4.35). There were no significant findings for the remaining behavioral markers. ORs above 1.0 indicate an association of less frequently observed “good” behavior with poorer outcome. The BMRI was significantly associated with any complication or death after adjusting for ASA score (adjusted OR 4.82; 95% CI, 1.30–17.87). In other words, when teamwork behaviors were relatively infrequent during surgical procedures, patients were more likely to experience death or a major complication. | | | The study found that patients whose surgical teams exhibited less teamwork behaviors were at a higher risk for death or complications, even after adjusting from ASA risk category. The study provides general support for the development of team training programs for surgical teams. Such programs should be rigorously tested because they will require significant investments of time and money; some studies in other areas have found only marginal benefit for patients.19 This study supports further efforts to implement team training in the operating room with a focus on improved information sharing, inquiry, briefings, and vigilance. | | |

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| **Non-experimental studies (N=97)** | | | | | |
| **Citation** | **Study Aim** | **Population/ Setting** | **Study Design** | **Methods** | **Outcome Measures**  1=care processes  2=patient experience  3=patient health indices  4=quality of life  5=cost |
| 187. McCue JD, Beck A, Smothers K. Quality toolbox: clinical pathways can improve core measure scores. *J Healthc Qual.* Jan-Feb 2009;31(1):43-50[187](#_ENREF_189) | To determine whether multidisciplinary Clinical Pathways (CPs) had improved core measure scores. | The sample consisted of 6,013 patient discharge records from 10/1/2002 through 9/30/2005 with a principal diagnosis of community acquired pneumonia (CAP), congestive heart failure (CHF) or acute myocardial infarction (AMI) at a 329 bed community teaching hospital in Maryland. | Quantitative  Longitudinal  Retrospective  Chart Review | Patient records were collected based on principal discharge codes. This information, along with demographic and select visit data, was transferred to the Core Measures Component (CMC) database. The CMC database is a product of the Maryland Hospital Association and is used by approximately 530 hospitals in the U.S. Selected charts were reviewed by clinical review nurses, and information was entered directly into the CMC database. The decision to place a case in CP or not-on-CP groups for data analysis was determined by the presence or absence of a CP form. | 1 |
| **Results** | | | **Conclusion** | | |
| Overall, 72.5% of discharges had care directed by one of the three CPs, 26.0% did not, and for 1.5% it could not be determined whether a CP was used from the data collector’s form. ACM performance for patients on CPs was 81.0%, which was significantly different when compared with 67.8% for patients not on CPs (p=.001).  The performance for each measure, except for pneumonia—oxygenation assessment, was better for patients on a CP (oxygenation assessment in pneumonia is routine, and was 100% whether patients were on a CP or not). The difference in performance between CP and non-CP patients was significant at po.001 for AMI—aspirin at arrival, AMI—beta-blocker at arrival, CHF— left ventricular ejection fraction (LVEF) tested, CHF— angiotensin-converting enzyme inhibitor (ACEI) or angiotensin-receptor blocker (ARB) for left ventricular systolic dysfunction, pneumonia— pneumococcal vaccination, and pneumonia—initial antibiotic received within 8 or 4 hours of arrival. The differences in performance between CP and non-CP patients were not significant for AMI—aspirin prescribed at discharge, AMI— ACEI; or ARB; for left ventricular systolic dysfunction, and AMI—beta-blocker prescribed at discharge. For all three diagnoses the overall performance at Franklin Square Hospital Center (FSHC) was similar to the Maryland state averages, and no secular trends were observed. Notably, Appropriate Care Measures (ACM) scores for patients on CPs were always better than or equal to state averages. | | | The authors conclude that the evidence-based CPs, which were designed as data collection tools for data feedback to providers, improved the scores for quality of medical care as measured by the ACM criteria. Patients placed on CPs for CAP, CHF, or AMI appear to have had better care than those whose care was not CP-directed, and ACM scores were superior to the mean figures for the 45 Maryland hospitals participating in the Hospital Quality Alliance. These improvements were stable over a 3-year period of time. | | |

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| **Non-experimental studies (N=97)** | | | | | |
| **Citation** | **Study Aim** | **Population/ Setting** | **Study Design** | **Methods** | **Outcome Measures**  1=care processes  2=patient experience  3=patient health indices  4=quality of life  5=cost |
| 188. Menon S, Valentini RP, Kapur G, et al. Effectiveness of a multidisciplinary clinic in managing children with chronic kidney disease. *Clinical Journal of the American Society of Nephrology.* 2009;4(7):1170-1175.[188](#_ENREF_190) | To compare outcome variables between patients from the Chronic Renal Insufficiency (CRI) clinic and a general nephrology clinic. | The sample was comprised of 44 pediatric patients with chronic kidney disease stages 2-4 who were managed in a general nephrology clinic (1996-2001, n=20) or the CRI clinic (2002-2007, n=24) at the Children’s Hospital of Michigan for 1 year before starting renal replacement therapy (RRT). | Quantitative  Longitudinal  Retrospective Chart Review | The Chronic Renal Insufficiency (CRI) clinic provides comprehensive care to children with chronic kidney disease (CKD). These children receive care from a nephrologists, nurse clinician, transplant coordinator, dietician, social worker, and psychologist. Laboratory parameters, growth, and dialysis access type at time of RRT were compared between the two cohorts.. | 1, 3, 5 |
| **Results** | | | **Conclusion** | | |
| At initiation of renal replacement therapy (RRT), patients from the general nephrology clinic had higher serum phosphorus (5.911.06 mg/dl versus 5.13±0.71; p=0.004) and iPTH (385.9±289.6 versus 182.5±138.9 pg/dl; p=0.008) levels as compared with those from the CRI clinic. The calcium phosphate product was also significantly higher (57.0±9.03 versus 48.43±6.1 mg2/dl2; p=0.001). The patients seen in the general nephrology clinic had significantly lower hemoglobin concentrations (9.5±1.38 g/dl versus 11.36±1.35; p= 0.001) than patients followed in the CRI clinic. A lower proportion of children from the general nephrology clinic were prescribed growth hormone therapy (30% versus 50%; p=0.18). The mean height of patients from the general nephrology clinic after 1 year follow-up and at the onset of renal replacement therapy was 1.50 as compared with 1.13 for patients from the CRI clinic (p=0.39). A greater proportion of patients from the general nephrology clinic had an unscheduled first dialysis compared with patients from the CRI clinic (50% versus 10.5%; p=0.01). A higher percentage of patients in the CRI clinic had a functioning permanent vascular access (arteriovenous fistula or arteriovenous graft) in place at the start of hemodialysis compared with patients from the general nephrology clinic (85.7 versus 20%, p=0.02). Five patients from the CRI clinic and four from general nephrology underwent a preemptive transplant. The mean glomerular filtration rate (GFR) at the start of dialysis in patients from the general nephrology clinic was 10.33±2.08 ml/min/1.73 m2 as compared with 13.1±2.72 ml/min/1.73 m2 for patients from the CRI clinic (p=0.001). Over a period of 1 yr follow-up, the change in GFR for patients from the general nephrology clinic was 19.67±20.42 ml/min/1.73 m2 as compared with 13.98±10.09 ml/min/1.73 m2 for patients from the CRI clinic. Although this was not statistically significant (p=0.28), there was a trend toward slower progression to end-stage renal disease (ESRD) in patients from the multidisciplinary clinic. One or more unplanned hospitalizations was noted in eight (33.3%) and 10 (50%) patients followed in the CRI and general nephrology clinics, respectively (p=0.26). However, the number of hospitalizations for the patients who had been followed in the general nephrology clinic was significantly larger than for those followed in the CRI clinic (0.54 versus 1.3 hospital admissions per patient per year; p=0.04). Patients from the general nephrology clinic spent a mean of 8.9 days in the hospital as compared with 2.3 days spent by patients from the CRI clinic (p=0.01). | | | The data show that children who were followed in a comprehensive CRI clinic had better hemoglobin, phosphorus, and parathyroid hormone (PTH) at the onset of dialysis. The CRI clinic patients were better prepared for initiation of dialysis with electively planned catheter insertion or functioning arterovenous grafts/fistulae. Unplanned hospitalizations were lower during the 12 months preceding the onset of dialysis in patients who had been followed in the CRI clinic. More studies need to be done in a prospective manner with a larger cohort of patients to conclusively demonstrate the benefits of multidisciplinary team management in delaying the onset of ESRD, increasing the use of arteriovenous fistulae, and decreasing the acute presentation of ESRD with its associated morbidity and hospitalization. | | |

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| **Non-experimental studies (N=97)** | | | | | |
| **Citation** | **Study Aim** | **Population/ Setting** | **Study Design** | **Methods** | **Outcome Measures**  1=care processes  2=patient experience  3=patient health indices  4=quality of life  5=cost |
| 189. Meyerson KL, Kline KS. Qualitative analysis of a mutual goal-setting intervention in participants with heart failure. *Heart and Lung: Journal of Acute and Critical Care.* 2009;38(1):1-9.[189](#_ENREF_191) | To identify factors influencing self-management in patients with heart failure. | The sample consisted of 27 patients who were part of a Mutual Goal Setting Intervention study conducted in conjunction with home health care agencies in Michigan. | Qualitative  Cross- Sectional  Content Analysis | The Goal Attainment Follow-up Guide (GAFG) and anecdotal records of patients who were participating in a study of mutual goal setting were reviewed and analyzed for this study using qualitative methods to determine emerging themes. A descriptive qualitative design using content analysis was used to review the intervention records. The intent was to identify emerging themes within the mutually agreed on goals, as well as evidence of goal attainment or reasons for not attaining goals. By using an inductive approach, analysis began with specific observations and measures, which ultimately revealed several concepts. Major concepts were then highlighted and underlined. Next, the concepts were rearranged into common domains, and the domains were then labeled as evolving themes. The primary study investigator then confirmed these themes. | 1 |
| **Results** | | | **Conclusion** | | |
| On reviewing the GAFG and anecdotal notes, goals set by the participants and nurse interventionists were organized under various categories or themes. The four themes generated from this analysis were 1) competing priorities, 2) self-efficacy related to HF self-management, 3) activity level, and 4) psychosocial adaptation. | | | Findings suggest that numerous factors (e.g., comorbidities and concern for family members) competed with heart failure (HF) self-management for some participants and served as barriers to goal attainment. It is imperative to identify all of the factors (both positive and negative) affecting HF self-management. Interventions could then be designed that would diminish the effect of negative factors (e.g., psychosocial concerns) and enhance the impact of positive factors (e.g., taking advantage of support systems in place). | | |

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| **Citation** | **Study Aim** | **Population/ Setting** | **Study Design** | **Methods** | **Outcome Measures**  1=care processes  2=patient experience  3=patient health indices  4=quality of life  5=cost |
| 190. Mukamel DB, Cai S, Temkin-Greener H. Cost implications of organizing nursing home workforce in teams. *Health Services Research.* 2009;44(4):1309-1325.[190](#_ENREF_192) | To estimate the costs associated with formal and self-managed daily practice teams in nursing homes. | Medicaid cost reports for 135 nursing homes in new York State in 2006 and survey data for 6,137 direct care workers | Quantitative  Cross- Sectional  Retrospective Database Analysis | Survey data from a parent study were merged with the  2006 New York State (NYS) Medicaid Cost Reports. The Medicaid cost reports are annual financial reports mandated, audited for accuracy, and used by the state to calculate Medicaid payment rates for nursing homes. They include information about expenditures, outputs (such as inpatient days, home health visits, etc.) and input price (such as wages by staff category), number of beds, and ownership. Case-mix information, measured by the Resource Utilization Groups (RUGs) III for each facility, was obtained separately from the NYS Department of Health. RUGs scores reflect the resource needs of each resident, based on their acuity, frailty, and rehabilitation needs, and are used by NYS to determine payment rates for nursing homes. Formal team and self-managed team penetration were calculated from survey responses. Annual variable costs, beds, case mix-adjusted days, admissions, home care visits, outpatient clinic visits, day care days, wages and ownership were calculated from the cost reports. | 5 |
| **Results** | | | **Conclusion** | | |
| As expected, costs significantly increase with outputs——case-mix adjusted days, admissions, adult day care days, home health visits, and outpatient clinic visits. The functional dependence on case-mix adjusted days is the typical one, exhibiting first increasing returns to scale and then decreasing returns to scale. Costs also increase significantly with wages. They are higher in nonprofit nursing homes, possibly reflecting higher quality care in those facilities. Costs were not significantly associated with either competition or upstate location (at the 0.1 level), and therefore the final model presented excludes these variables. The individual variables of team penetration are not significantly associated with costs. However, because the authors include linear, squared, and cubed terms, they are highly collinear and standard errors tend to be inflated. An F test of the hypothesis that all three terms are jointly significant has a p value of 0.004 for penetration of the formal teams, indicating that costs are associated  with formal teams. However, for self-managed team penetration, the p value is 0.426, indicating that these types of teams do not have an impact on costs. Similar results were obtained when the authors estimated models with only formal or self-managed teams variables. The magnitude of the savings associated with formal teams is not large compared with the total annual expenditures level of nursing homes. The largest savings that can be realized by increasing formal team penetration to the minimum of the cost curve point is 1.16 percent. | | | This study provides for the first time empirical evidence based on a large sample that formal teams in nursing homes can be cost saving. This conclusion is tempered, however, by the possibility that the composition of the team might be an important factor contributing to its cost effectiveness. | | |

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| **Citation** | **Study Aim** | **Population/ Setting** | **Study Design** | **Methods** | **Outcome Measures**  1=care processes  2=patient experience  3=patient health indices  4=quality of life  5=cost |
| 191. Myers JS, Grigsby J, Teel CS, et al. Nurses' assessment of rehabilitation potential and prediction of functional status at discharge from inpatient rehabilitation. *International Journal of Rehabilitation Research.* 2009;32(3):264-266.[191](#_ENREF_193) | To evaluate the accuracy of nurses' predictions of rehabilitation potential in older adults admitted to inpatient rehabilitation facilities and to ascertain whether the addition of a measure of executive cognitive function would enhance predictive accuracy. | Prospective data was collected from 362 Medicare beneficiaries enrolled in a national, multicenter study of rehabilitation outcomes. Participants were inpatients in one of 14 rehabilitation units or skilled nursing facilities located throughout the U.S. | Quantitative  Cross-Sectional  Secondary Data Analysis | Data for the parent study were collected during the admission process and before discharge. Baseline comorbidities were recorded using the Charlson Comorbidity scale. Patients were asked to rate the pain experienced within the previous 4 weeks on a 6-point Likert-type scale (0=none, 5=very severe). The admitting nurse completed the Admission Patient Survey, including demographic and historical data, and ranked patients’ rehabilitation potential on a three point scale (0=good, 2=poor). A measure of executive cognitive function (ECF), the Behavioral Dyscontrol Scale (BDS), was completed at discharge by a data collector blinded to Admission Patient Survey data. The BDS is a nine item measure of the capacity to use intentions to guide the performance of a goal-directed behavior. | 1 |
| **Results** | | | **Conclusion** | | |
| Participants’ modified Barthel scores ranged from 7 to 20 (mean=17.8, SD=0.93). Mean pain score was 3.34 (SD=1.5, range 0-5). History of patient falls was negligible (mean=0.12, SD=0.62). The mean BDS score was 13.9 (SD=4.78, range 0-19). Nurses’ rating for rehabilitation potential ranged from zero to two (mean=0.32). An unadjusted OLS model was used to evaluate the relationship between nurses’ prediction of rehabilitation potential and observed activities of daily living (ADL) status (modified Barthel score) at discharge (r=0.20, r2=0.04, p<0.001) for the entire sample. Addition of BDS score to the model raised the r2to 0.23 (r=0.048, p<0.001) explaining an additional 19% of the variance. Nurses’ predictions and measures of the ECF (the BDS) were independent of one another. Unadjusted ordinary least squares (OLS) for BDS alone accounted for 21% of the variance, compared with the 4% explained by the nurses’ predictions (p<0.001). Hip fracture/replacement and medical-surgical patients were also analyzed separately. Nurses’ prediction of rehabilitation potential was a significant predictor of the Barthel score for the hip population (r=0.26, r2=0.069, p<0.001), but not for the medical-surgical group (r=0.13, r2=0.016, p=0.128). | | | The findings show the independence of nursing prognoses and the level of executive cognitive function and suggest that inclusion of this measurement of executive cognitive function may significantly enhance the accuracy of nursing prognoses. Development and implementation of related nursing education might be warranted. | | |

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| **Citation** | **Study Aim** | **Population/ Setting** | **Study Design** | **Methods** | **Outcome Measures**  1=care processes  2=patient experience  3=patient health indices  4=quality of life  5=cost |
| 192. Naylor MD, Feldman PH, Keating S, et al. Translating research into practice: Transitional care for older adults. *J Eval Clin Pract.* 2009;15(6):1164-1170.[192](#_ENREF_194) | To examine the major facilitators and barriers of implementing in a large US insurance organization – Aetna Corporation – an evidence-based model of care, the Transitional Care Model (TCM). | The sample consisted of 19 transitional care nurses, case managers & staff working for a single U.S. insurance company at the time of start-up and roll out of the TCM. | Qualitative  Longitudinal  Interviews | Led by an independent social science consultant with expertise in measurement of organizational systems and change, researchers used a two-phase qualitative design to identify the major assets and impediments to translating, adapting and integrating the TCM with Aetna. Phase I (start-up) focused on issues related to translating the TCM from a research to an operational model and to developing the infrastructure to implement it within Aetna. Phase II (roll-out) focused on the day-to-day implementation of the TCM within a defined segment of Aetna’s mid-Atlantic market. Semistructured  interviews were conducted to collect narrative information about the two distinct project phases, and data were sought from all project team members and staff who participated in this effort. Everett Rogers’ framework to assess the diffusion of innovations guided the conduct of this study. | 1 |
| **Results** | | | **Conclusion** | | |
| Together, six facilitators and seven barriers were identified during both phases of study. Lesson one: Strong champions are necessary to steer translation efforts through multiple implementation challenges that inevitably arise when adapting research-based models to real world settings. Lesson two: In accordance with Rogers’ framework on innovation diffusion, a compelling case of benefit must be made: The innovation must fit well within the main mission and objectives of the adopting organization or solve a problem for them that is compromising achievement of their objectives. Lesson three: Although champions were recognized as taking the lead in the integration of the innovation, data from these interviews verify the need to engage all – early, continually, and throughout the process. Lesson four: Flexibility is an essential ingredient to successful translation. Throughout the process, specific operational and procedural issues that were not fully anticipated required timely adjustments to real world constraints. Lesson five: Engaging external audiences early in the process and promoting and marketing the innovation to key stakeholders proved essential to success. Lesson six: Marketing the TCM to prospective members required more attention than originally anticipated. The TCM is not widely known in the public forum and required some explanation as a new concept. Lesson seven: While general perceptions of benefit were helpful in establishing support for this innovation, a strong case should be made for defining specific measures of success upfront and quantitatively determining the effect of the innovation. | | | Based on the findings described here, which parallel the currently available literature on translational research, the degree to which state-of-the-science innovations can be integrated into health care delivery depends on the commitment and effectiveness of champions as advocates and stewards, the match between the change agent and adopting organization, the degree to which communication difficulties can be overcome, and the extent that operational hurdles can be resolved. Lessons from this study suggest that it will take dedicated leadership, expert problem solving, and innovative delivery models to systematically overcome the current status quo. While the divide between the health care we have and the care we could have is widening, this study provides a structured approach for bridging this gap and hardwiring an evidence-based model of care into an ‘organic’ service delivery system. | | |

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| **Citation** | **Study Aim** | **Population/ Setting** | **Study Design** | **Methods** | **Outcome Measures**  1=care processes  2=patient experience  3=patient health indices  4=quality of life  5=cost |
| 193. Needleman J, Minnick AF. Anesthesia provider model, hospital resources, and maternal outcomes. *Health Services Research.* 2009;44(2P1):464-482.[193](#_ENREF_195) | To determine the ability of anesthesia provider model and hospital resources to explain maternal outcome variation. | The sample was comprised 1,141,641 obstetrical patients from 369 U.S. hospitals that reported at least one live birth in 2002. | Quantitative  Cross- Sectional  Secondary Data Analysis | Data was assembled from information given by hospitals to state agencies and from a 2004 survey of obstetrical organizational resources. Researchers examine the ability of anesthesia provider model and other hospital resources to explain variations in maternal outcomes using a privilege-based characterization of the anesthesia provider model and accounting for relevant nursing, medical, and anesthesia resources. The survey variables pertaining to resource and anesthesia provider model utilized in this analysis were chosen based on item response rates and variation across models. | 3 |
| **Results** | | | **Conclusion** | | |
| Anesthesia complication rates in anesthesiologist-only hospitals were 0.27 percent compared with 0.23 percent in certified registered nurse anesthetist (CRNA) only hospitals. Rates among other provider models varied from 0.24 to 0.37 percent with none statistically different from the anesthesiologist-only hospitals. A similar pattern was observed for rates of other outcomes. Multivariate analysis found no systematic differences between hospitals with anesthesiologist-only models and models using CRNAs. There was no consistent pattern of association of other hospital or patient characteristics with outcomes. | | | In this study, with a geographically broad sample of hospitals with approximately 10 percent of the births in U.S. hospitals in 1999– 2001, the authors examined the role of anesthesia provider and anesthesia care model on deaths, anesthesia complication, other complications, and obstetrical trauma. The authors found no evidence that, compared with anesthesia models relying exclusively on anesthesiologists, hospitals that use only CRNAs or have an anesthesia model involving both CRNAs and anesthesiologists have systematically higher rates of these complications. This is the case whether or not we introduce substantial controls for other dimensions of the hospital’s obstetrical care or patient characteristics or comorbidities, or propensity methods to control for selection. Only for the ANES–CRNA I model did the authors observe a consistent pattern of statistically significant estimate of higher rates for a complication, i.e., obstetrical trauma, a complication in which anesthesia provider is unlikely to be involved operationally. This is a reassuring finding, given the large number of births that currently take place in hospitals in which hospitals’ CRNAs are the sole obstetrical anesthesia provider or have broad privileges. | | |

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| **Non-experimental studies (N=97)** | | | | | |
| **Citation** | **Study Aim** | **Population/ Setting** | **Study Design** | **Methods** | **Outcome Measures**  1=care processes  2=patient experience  3=patient health indices  4=quality of life  5=cost |
| 194. Nelson KA, Freiner D, Garbutt J, et al. Acute asthma management by a pediatric after-hours call center. *Telemedicine and e-Health.* 2009;15(6):538-545.[194](#_ENREF_196) | To describe an asthma management protocol used in a nurse-staffed pediatric After-Hours Call Center (AHCC) that incorporates severity-based home treatment recommendations and follow-up call assessments. | The sample consisted of 3,632 patient calls for asthma advice from January 1, 2004 to June 30, 2004 to the St. Louis Children’s Hospital AHCC. | Quantitative  Cross-Sectional  Retrospective Database Review | Demographic information, severity zones and home treatment recommendations were reviewed retrospectively from the AHCC database. A randomly selected subset of approximately 15% of records for initial calls and their linked follow-up calls were hand-audited to verify accuracy of data and to collect information about available home medications and parent self-reported adherence to treatment recommendations. In addition, the study hospital medical records database was reviewed for asthma visits to obtain some limited information about ED visits and hospitalizations occurring after AHCC calls. | 1, 3 |
| **Results** | | | **Conclusion** | | |
| Among all initial calls, Red zone severity was assigned for 688 (28%), with advice to call 911 or immediately proceed to ED for 208, dispositions for “Emergent Home Treatment with Follow-Up Call” and “Call PCP Now” were given for 324 and 156, respectively. Yellow zone severity was assigned for 1,027 (42%) of initial calls; 948 received “Urgent Home Treatment with Follow-Up Call” and 79 involved recommendations to be evaluated by a physician. Green zone severity was assigned for 656 (27%) initial calls, during which parents were counseled about asthma and advised to follow up with the PCP. Among initial calls with Red zone designation and “Emergent Home Treatment with Follow-Up Call” disposition, 37% improved (8% to Yellow zone and 29% to Green zone), 33% had no change in zone, and 30% had missing follow-up data. Among initial calls with Yellow zone designation and “Urgent Home Treatment with Follow-Up Call” disposition, 72% improved to Green zone, 4% worsened to Red zone, 2% had no change, and 22% had missing follow-up data. One-hundred-seventy-two sets of initial calls with dispositions of “Emergent Home Treatment with Follow-Up Call” or “Urgent Home Treatment with Follow-Up Call” and their linked follow-up calls were randomly selected for hand-audit. Seventy-eight percent of children were reported to have received albuterol during the preceding 24 hours and 20% were reported to have OCS available at home. At the time of the follow-up calls by the nurses, 95% of children were reported to have received treatments as recommended by the nurses (range of albuterol treatments = 2–7) and 16% were reported to have received OCS. Overall, 50% of Red zone calls and 63% of Yellow zone calls had improvement in severity zones. Twenty-eight percent of the hand-audited calls involved referral to the ED upon follow-up reassessment by the nurses. During the study period, 203 children with AHCC calls had asthma- related ED visits at the study hospital within 24 hours of their calls; 31/203 (15.3%) (95% confidence interval [CI] 10.6%, 21.0%) were hospitalized. The overall asthma-related hospitalization rate during the study period was similar: 649/4,541 (14.3%) (95% CI 13.3%, 15.3%). | | | This telephone-based pediatric acute asthma management protocol involves evidence-based recommendations and follow-up assessments, and the results of this review suggest that most children experiencing this nurse-directed home management have improvement after the recommended treatment.  It is possible that this protocol may result in improved asthma-related outcomes beyond the telephone calls, including fewer acute-care visits to PCPs and EDs, and it may be successful in other cities. | | |

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| **Citation** | **Study Aim** | **Population/ Setting** | **Study Design** | **Methods** | **Outcome Measures**  1=care processes  2=patient experience  3=patient health indices  4=quality of life  5=cost |
| 195. Noble LM, Noble A, Hand IL. Cultural competence of healthcare professionals caring for breastfeeding mothers in urban areas. *Breastfeeding Medicine.* 2009;4(4):221-224.[195](#_ENREF_197) | To measure the general cultural competence of healthcare professionals caring for breastfeeding mothers in an urban area. | 18 Physicians, 69 nurses and 41 other allied health professionals involved in the care of breastfeeding mothers in New York, NY participated in this study. | Quantitative  Cross- Sectional | This study was a survey of New York City healthcare professionals who attended a breastfeeding seminar, which did not include any lectures on cultural competence. There were two instruments: a demographic survey and the Inventory for Assessing the Process of Cultural Competence Among Healthcare Professionals—Revised (IAPCC-R) of Campinha-Bacote. The IAPCC-R is appropriate for the initial assessment of general cultural competence of all  healthcare professionals with an established reliability and validity. It is a self-administered questionnaire with 25 items based on Campinha-Bacote’s five constructs: cultural awareness, cultural skill, cultural knowledge, cultural encounters and cultural desire. Psychometric testing results were reported. Data were analyzed with chi-square, t-test, and one-way ANOVA. | 1 |
| **Results** | | | **Conclusion** | | |
| The mean score on the Inventory for Assessing the Process of Cultural Competence Among Healthcare Professionals-Revised (IAPCC-R) was 68± 9. Four percent of respondents achieved a score of culturally incompetent, 73% culturally aware, 23% culturally competent, and 0% culturally proficient. Whether the professional had attended courses in school or worked with a culturally diverse population did not significantly affect his or her cultural competence scores. Attending continuing education courses on cultural diversity did have significant effects on cultural competence, resulting in significantly higher total scores (69±9 vs. 65±7, p=0.021) than the group who did not attend continuing education. In addition, cultural skill (14±2 vs. 13±2, p=0.002) and cultural desire (17±2 vs. 16±2, p=0.011) were higher in the group that participated in continuing education courses. Those achieving a score of cultural competence were more likely to have attended continuing education courses on cultural diversity (31% vs. 7%, p=0.003). There was no difference in scores according to the ethnicity of the healthcare professional. Physicians scored higher than the other healthcare professionals (72±8 vs. 67±9, p=0.028), with higher subscores for cultural awareness (15±2 vs. 13±2, p=0.004) and cultural knowledge (13±2 vs. 11±3, p=0.001). | | | In this study, the majority (77%) of healthcare professionals caring for breastfeeding mothers in urban areas did not achieve a score of cultural competence. Higher scores were achieved by those who attended continuing education in cultural diversity. Further research is necessary to study the relationship between healthcare professionals’ cultural competence scores and breastfeeding. If such a relationship exists, the authors’ recommendation would be to implement cultural competence initiatives, including formal education and workshops into breastfeeding education. | | |

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| **Citation** | **Study Aim** | **Population/ Setting** | **Study Design** | **Methods** | **Outcome Measures**  1=care processes  2=patient experience  3=patient health indices  4=quality of life  5=cost |
| 196. Norris J, Howell E, Wydeven M, et al. Working with teen moms and babies at risk: The power of partnering. *The American Journal of Maternal/Child Nursing.* 2009;34(5):308-315.[196](#_ENREF_198) | To describe the nature of how nurses establish and maintain relationships with first-time pregnant, poor teenagers and their families to achieve health and life course outcomes. | Nurses (N=6) and patients (N=4) in multiple pediatric clinics participated in this study. | Qualitative  Longitudinal  Grounded theory  Focus groups | Twelve focus groups were conducted with nurses who worked in long-term relationships with a diverse and vulnerable group of women. Use of broad questions allowed the nurse participants to share their client experiences with one another. The initial broad question asked how they prepared themselves for the initial visit to a client after receiving the referral and how they initiated and approached the home visit. Subsequent focus groups addressed broad thematic questions. The nurse participants and a group of patients confirmed the credibility of the developed theory. Eight nurses in similar practice settings across the U.S. also confirmed the fit of the theory to their own practices and an expert consultant verified the auditability of the study. | 1, 2 |
| **Results** | | | **Conclusion** | | |
| The grounded theory of “partnering” was found to address phases of engaging the client, working on mutual goals, and disengaging. Trust is a turning point in the relationship and action processes address persevering and managing boundaries. Influencing factors related to client, nurse, and the healthcare system serve as barriers and facilitators. | | | Partnering as a conceptual framework may prove useful for working with other diverse and vulnerable clients after testing in different populations and settings. | | |

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| **Non-experimental studies (N=97)** | | | | | |
| **Citation** | **Study Aim** | **Population/ Setting** | **Study Design** | **Methods** | **Outcome Measures**  1=care processes  2=patient experience  3=patient health indices  4=quality of life  5=cost |
| 197. Nowalk MP, Tabbarah M, Hart JA, et al. Office manager and nurse perspectives on facilitators of adult immunization. *American Journal of Managed Care.* 2009;15(10):755-760.[197](#_ENREF_199) | To assess which characteristics of primary care practices & nurse variables serving low- to middle-income white and minority patients relate to pneumococcal polysaccharide vaccine (PPV) and influenza vaccination rates. | An intentional sample of 18 primary care practices with 2,289 patients >65 years underwent chart review to determine PPV and influenza vaccination rates. In addition, office managers and lead nurses were surveyed. | Quantitative  Cross- Sectional  Secondary Data Analysis | The survey questionnaires were designed to describe current medical practices and determine barriers to and facilitators of organizational change that could lead to quality improvement strategies to increase adult immunization. Constructs from the PRECEDE-PROCEED framework (predisposing, enabling, and environmental factors) were included in the office manager and nurse questionnaires. The surveys were developed and revised through an iterative process by a multidisciplinary team that examined them for face and content validity. They were pilot-tested before use and revised accordingly. Office manager and nurse respondents were offered $50 payment in the form of a check or gift certificate. | 1 |
| **Results** | | | **Conclusion** | | |
| There was no apparent relationship with vaccination rate for many of the variables. However, when entered into the model singly, items associated with PPV at p<0.15 included time allotted for an annual well exam, percentage of practices in which most patients accept the PPV when recommended, percentage of practices that frequently recommend influenza vaccine for all eligible adults, and percentage of practices in which nurse respondent received influenza vaccine in the previous season, in addition to patient age. For PPV, the best pair was time allotted for an annual well exam (p=0.089) and percentage of practices in which the lead nurse received influenza vaccine in the previous season (p=0.009). Patient age and race and 1 practice level variable, time allotted for an annual well exam, were significantly related to influenza vaccination. | | | Time allotted for well visits and the lead nurse’s own vaccination status were associated with higher patient immunization rates, after adjusting for race and age. Quality improvement initiatives for adult immunization might include strengthening the social influence of providers and/or ensuring that adequate time is scheduled for preventive care. | | |

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| 198. Palmieri FM, DePeri ER, Mincey BA, et al. Comprehensive diagnostic program for medically underserved women with abnormal breast screening evaluations in an urban population. *Mayo Clinic Proceedings.* 2009;84(4):317-32[198](#_ENREF_200) | To describe the demographic and clinical characteristics of enrollees in a patient navigator program and assesses its effect on the timeliness of post-screening follow-up care and clinical services provided to enrollees. | 447 women who had been diagnosed with an abnormal screening mammogram or palpable suspect breast mass from June 30, 2000 to December 29, 2006 in Florida participated. | Quantitative  Cross-Sectional | Coordinators from area health departments worked with a navigator nurse at May Clinic Cancer Center in Jacksonville, FL to refer patients for additional breast diagnostic services. Demographic information from referred participants was initially collected from the referring county health department or agency and was confirmed during the initial patient interview at Mayo Clinic’s site in Jacksonville, FL. The American College of Radiology’s Breast Imaging Reporting and Data System (BI-RADS) was used to provide a standard classification for mammographic studies, with BI-RADS 0, 3, 4, or 5 considered for evaluation. Timeliness of post-screening follow-up was assessed. | 1 |
| **Results** | | | **Conclusion** | | |
| The median time from study enrollment to diagnosis was 0 days (i.e., most patients received a diagnosis the same day they were enrolled). This was possible because 403 (90%) of the 447 patients had benign conditions that could be confirmed during immediate imaging procedures the same day that consent was obtained (i.e., date of initial visit) A median of 1 visit was necessary to complete diagnostic evaluations.  Data on the time from screening to diagnosis were available for 399 (89%) of the 447 women. Of the 399 women with data on the time from screening to diagnosis, 325 (81%) had a time interval of less than 60 days from screening to diagnosis, which meets the Centers for Disease Control and Prevention (CDC) quality benchmark. The other 74 women (19%) had a time interval of more than 60 days from screening to diagnosis because of appointment rescheduling and other socioeconomic barriers. Of these 74 women, 14 (19%) had to reschedule their appointments; no reasons for the extended interval were documented for any of the other women. The median time was shortest for patients with invasive carcinoma (35 days). Patients with ductal carcinoma in situ (DCIS) had the longest interval (40 days). The mean time from screening to diagnosis for women undergoing biopsy was 56 days (range, 0-343 days) vs. 51 days (range, 7-400 days) for those with no biopsy; median times were similar for both groups (37 vs. 38 days). Of the 73 patients with BI-RADS 4 or 5, 13 (18%) had a time interval of more than 60 days between screening and diagnosis. No significant differences were found between racial groups for any of the time intervals (e.g., days from screening to diagnosis). The median time between screening and diagnosis for black, white, and Hispanic women was 36, 38, and 40 days, respectively; the median time for the entire patient population was 37 days. | | | Timely diagnostic resolution of abnormal mammograms in medically underserved women is possible by using a coordinated, collaborative program between an academic medical center and public health departments. Most women with BI-RADS category 4 or 5 assessments received a diagnosis within 60 days of screening. Although this study quantitatively documented the role of a patient navigator program and its positive influence on patient care, greater attention to the much-needed services bridging breast cancer screening and treatment is necessary. | | |

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| 199. Park J, Stearns SC. Effects of state minimum staffing standards on nursing home staffing and quality of care. *Health Services Research.* 2009;44(1):56-78.[199](#_ENREF_201) | To investigate the impact of state minimum staffing standards on the level of staffing and quality of nursing home care. | The data was collected from the Online Survey and Certification Reporting System (OSCAR) merged with the Area Resource File from 1998 through 2001.A total of 55, 248 facility-year observations from 15,217 freestanding facilities were analyzed. | Quantitative  Cross- Sectional  Secondary Data Analysis | The OSCAR data were linked to data on specific state staffing standards, state Medicaid per-diem rates, and market (county) conditions. State minimum staffing standards came from two published reports. State Medicaid per-diem rates were obtained from the Brown University Survey of State Policies and State Data Book on Long-Term Care Program and Market Characteristics. Market level variables were obtained from the Area Resource File, a publicly available dataset containing economic and demographic variables for each county. Data on the population for each county came from the U.S. Census Bureau. Difference-in-differences models using facility fixed effects were estimated to determine the effect of state standards. | 1 |
| **Results** | | | **Conclusion** | | |
| Only nonprofit facilities had statistically significant increases at p<0.05 in registered nurse (RN), nursing assistant (NA), and total staff hours in about two-thirds of the increase in total staff hours was due to increases in NA hours. Staffing did increase slightly (p=0.10) at a few other facility types, but these changes were substantively small on average across all facilities within the subgroup. Surprisingly, a decrease in total staffing hours was estimated for for-profit facilities with relatively high staffing levels; this effect, which was substantively small and only marginally significant at p<0.10 despite the large sample size, may reflect a response by for-profit facilities to reduce staffing closer to the legislated minimum. The substantive implications of staffing increases for nonprofit low-staff facilities are best understood by converting the observed changes to estimated staff time increases. In low-staff nonprofit facilities, the increased standards led to estimated steady-state increases of 0.034 RN hours per resident day (HPRD) (2.04 minutes), 0.027licensed practical nurse (LPN) HPRD (1.62 minutes), 0.145 NA HPRD (8.7 minutes), and 0.206 total staff HPRD (12.36 minutes). With respect to the process of care measures, catheter use was not significantly affected by increases in minimum standards, though the rate of restraint use declined significantly (p<0.01) for all facility subgroups. The largest decline occurred in nonprofit facilities; the decline was smaller in low staff nonprofit facilities than in nonprofit facilities that did not have low-staff status (1.27 versus 2.45 percentage points). Similarly, total deficiency citations declined significantly for all facility subgroups except for for-profit facilities with relatively high staffing levels. The average effect for nonprofit facilities with relatively high staffing levels showed the largest reduction in deficiencies on average with 0.2 relative to an overall mean number of deficiencies of 5.9. | | | In total, the results from this study are particularly relevant to the era of growth in the aged population and provide important policy implications. First, structural differences in the effects of minimum standards on staffing by previous staffing status or ownership type demonstrate variation in response to regulatory policies. Not surprisingly, mandated staffing standards seem to primarily affect facilities at the low-end of the staffing spectrum and, therefore, some incentive structures need to be developed to improve staffing at all facilities. Second, although the results indicate that the increases in standards were associated with reductions in restraint use and deficiencies, broad improvements in quality of care cannot be achieved merely by the types of staffing standards. Other quality initiatives need to be considered, such as developing training standards, staff education, and retention strategies. Third, the federal and state governments should determine the additional costs and develop a plan to adequately fund the required increases in staffing levels.  Fourth, a number of facilities still appear to operate at staffing levels below the mandated levels. In order to achieve the benefits of mandatory staffing standards, monitoring and enforcement of federal and state regulations are necessary. Lastly, the results are useful to understand the benefits and pitfalls of implementing staffing standards. Further understanding of the effects of minimum staffing standards may be obtained by assessing financial pressures and by exploring the causal pathways between nursing home staffing and quality outcomes. | | |

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| 200. Putman-Casdorph H, Drenning C, Richards S, et al. Advance directives: evaluation of nurses' knowledge, attitude, confidence, and experience. *Journal of Nursing Care Quality.* 2009;24(3):250-256.[200](#_ENREF_202) | To assess nurses’ knowledge of advance directives, attitudes regarding advance directives,  experience with advance directives discussions, and confidence in discussing advance directives. | 87 nurses from acute-care units, including general medical-surgical, cardiac, and inpatient and outpatient oncology units in one university hospital in the U.S. participated in the | Quantitative  Cross- Sectional  Survey | The author developed questionnaire included a demographic section asking about primary practice setting, primary nursing specialty, number of years since becoming an registered nurse (RN), age, and highest level of education. The second section consisted of 21 true/false questions testing knowledge of Ohio state laws related to advance care planning and was modified by the researchers to reflect the laws of West Virginia. In addition, there were nine, 5-point Likert type scale items that measured nurses’ attitude toward advance care planning. The final section of the questionnaire asked questions about resources available for advance directive education. The items pertaining to resources were open-ended and yes/no-type questions. Data were collected over a 6-week period through use of a paper questionnaire. | 1 |
| **Results** | | | **Conclusion** | | |
| Participants scored highest on general questions related to advance directives such as  questions about the purpose and function of living wills and medical power of attorney,  with 95% to 100% of participants answering those questions correctly. However, problems were noted with questions pertaining to specific West Virginia state laws regarding advance care planning, such as content related to the POST (Physician Orders for Scope of Treatment) form and the healthcare surrogate (21%–56% of the sample answered these questions incorrectly). Nine items evaluating nurses’ attitudes toward advance directives covered topics such as support in using and the helpfulness of advance directives in practice. Participants responded with moderately negative attitudes overall toward advance directives, with an aggregate mean score of 2.21 (SD=0.84) and a range from 1 to 5. Higher mean scores were consistent with more positive attitudes. Participants were asked how confident they were in advance directive discussions. A higher mean score was associated with higher rates of perceived self-confidence. The sample for this study had a mean of 2.63 (SD=0.78), indicating slightly to moderately confident perceptions. Experience with advance directive discussions was evaluated using the score from the item, “How often do you participate in discussions regarding advance directives with your patients?” A lower mean score indicated greater numbers of these discussions with patients. The experience mean score for the sample was 2.52 (SD=0.83). Participants were also asked whether they considered advance directive discussions as one of their nursing roles. The mean score was 2.18 (SD=1.03), with lower scores indicating that these discussions were part of the nursing role. | | | This study indicated lack of knowledge about laws regarding advance directives, moderately negative attitudes toward advance directives, moderate confidence and moderate experience with advance directives.  Nurses must have the knowledge and the confidence to facilitate discussions on advance care planning to assist in clarification of goals of care for patients. The issues of patient autonomy and the right to make informed healthcare decisions that reflect the patient’s beliefs and values came to the forefront of healthcare with the initiation of the Patient Self-Determination Act. As frontline caregivers, nurses will continue to be in a key position to help patients and families facing difficult, and sometimes painful, advance care planning decisions. | | |

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| 201. Pytel C, Fielden NM, Meyer KH, et al. Nurse-patient/visitor communication in the emergency department. *J Emerg Nurs.* 2009;35(5):406-411.[201](#_ENREF_203) | To examine adult patient and visitor perceptions of important communication needs, patient and visitor perceptions of nursing communication performance, and the congruence between patient/visitor and nurse perceptions of communication needs. | A convenience sample of 64 nurses and 123 patients/visitors were recruited to complete a survey at a large Midwestern Urban emergency department. | Quantitative  Cross- Sectional  Prospective  Pilot study | Two Satisfaction with Communication surveys were designed by study investigators, one for patients/visitors and one for nurses, to answer research questions related to communication needs priorities for patients/visitors, satisfaction with the level of nurse delivery of communication needs during the current emergency department (ED) encounter, and nurse perceptions of patient and visitor communication needs. Both surveys included questions regarding responder characteristics. Patients were asked to complete the short, anonymous survey, and place it in an addressed, postage paid envelope. Nurses were approached to participate in the study at a staff meeting. Descriptive statistics were used in the analysis. | 2 |
| **Results** | | | **Conclusion** | | |
| Of 19 communication needs items, 14 (74%) received a mean ranking of 80% or higher as “very important” by patients/visitors. The number one communication need as perceived by patients/visitors also was chosen by nurses as the top-ranked communication need: “Nurses keep you informed about what tests and treatments are  done”; however, nursing communication performance did not always match patient/visitor communication needs. Of 19 communication needs, patients/visitors believed nurses met 9 in an “excellent” way (equal to ≥50% excellent ranking) during the ED encounter. Of the 9 communication needs that nurses met in an excellent way ≥ 50% of the time, only 6 were ranked as a top-10 communication need by patients/visitors. Thus, there was a mismatch between nursing communication performance and patient/visitor communication needs. Patients ranked 2 communication needs that nurses ranked in their top 10 as number 16 and 18, respectively: “Nurses speaking in calm voice” (p=0.01) and “Nurses do not make  assumptions about social status” (p=0.006). For both items that differed significantly, nursing communication performance was high, as noted by high responses from patients in meeting these needs. The authors wished to learn if there was a trend in congruence between communication need importance and nursing communication performance. In 6 of 19 communication needs, there was a positive trend between communication need importance and nursing communication performance. Of these, 3 were rated as top 10 communication needs by patients/visitors: “Nurses keep you informed about what tests and treatments are being done” (ranked number 1; p=0.03), “Nurses show compassion and genuine concern” (ranked number 5; p=0.03); and “Nurses provide comfort” (ranked number 10; p=0.01). Of 19 communication needs, 8 of the top 10 needs perceived as very important by patients/visitors also were believed to be the top 10 “very important” needs by nurses with 2 exceptions: nurses ranked speaking in a calm voice as number 6 of the top 10 needs (patients/visitors ranked it as number 16), and nurses ranked using eye contact when talking as number 10 (patients/visitors ranked it as number 17). However, only 2 communication needs were perceived as very important to nurses with significantly greater frequency than by patients/visitors; thus, ED nurses in this sample understood patient communication needs to a great degree. | | | Nurse and patient/visitor perceptions of important communication needs are similar; however, nurses ranked 2 of the top-10 patient communication needs much lower than patients ranked them. Discussion of results could lead to improved nursing communication performance. Discussion of results and training among ED nursing team members will increase understanding of nursing communication performance and promote implementation of interventions that improve patient/visitor perceptions of nursing communication performance. Replicating this study after making changes in processes or communication style will provide evidence of patient satisfaction with the ED experience based on meeting patients’ communication needs. | | |

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| 202. Radwin LE, Cabral HJ, Wilkes G. Relationships between patient-centered cancer nursing interventions and desired health outcomes in the context of the health care system. *Research in Nursing & Health.* 2009;32(1):4-17.[202](#_ENREF_204) | To investigate relationships between patient-centered  nursing interventions (PCNI), system characteristics, patient characteristics, and desired health outcomes for hematology-oncology patients. | 173 hematology-oncology patients and 49 nurses were recruited to participate from one inpatient unit at a New England urban medical center. | Quantitative  Longitudinal  Prospective | Data was collected from patient and nurse participants over an 18-month period in 2004 to 2005. Patients were eligible if they had a cancer diagnosis. Eligible nurses were nurses who provided direct patient care during the study period. Questionnaires were distributed and collected by the research team – patients completed the questionnaires when nurses where not present, nurses completed the surveys privately when at work. Information from medical and administrative records were collected by the research team. Inter-rate reliability was assessed. Patients’ responses to the questionnaires comprised data for patient-centered nursing interventions and desired outcomes as well as patient characteristics. Nurses’ responses to questionnaires provided health care system characteristics data. Structural modeling was used in the analysis. | 2 |
| **Results** | | | **Conclusion** | | |
| The findings of the study support the middle-range they and the refined Quality Health Outcomes Model used. Factor analyses yielded parsimonious scales to operationalize the variables. In the path model, one patient-centered nursing intervention (PCNI) individualization was positively related to three subsequent desired health outcomes: authentic self-representation, optimism, and sense of well-being. Two additional PCNIs responsiveness and proficiency were positively related to subsequent trust in nurses. PCNIs did not vary with patient race, ethnicity, age, gender, or educational level. | | | This study brings attention to the importance of patient-centered care delivered by nurses—an aspect of care not frequently monitored by stakeholders or studied by health services researchers. Study findings identified that patient-centered nursing interventions were related to desired health outcomes; individualization appeared to play a key role. More research is certainly warranted. | | |

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| 203. Raza T, Joshi M, Schapira RM, et al. Pulmonary telemedicine-A model to access the subspecialist services in underserved rural areas. *Int J Med Inf.* 2009;78(1):53-59.[203](#_ENREF_205) | To describe the use of videoconference telemedicine for providing outpatient pulmonary consultation to a remote, underserved clinic site. | The study occurred between January 1998-December 2004. The Milwaukee Veteran Affairs Medical Center telemedicine hub in Milwaukee recruited 314 patients who received pulmonary telemedicine consultations (accounting for 684 clinical encounters) from the Iron Mountain VA and the Appleton VA clinics. | Quantitative  Longitudinal  Retrospective Chart Review | Data on demographics, referral patterns, access to care, consultation process, and outcomes from the telemedicine visits were extracted from the computerized patient record system, paper chart, and physician logbooks of telemedicine visits. | 1, 5 |
| **Results** | | | **Conclusion** | | |
| The most frequent reasons for consultation were abnormal thoracic radiography (38%), Chronic obstructive pulmonary disease (COPD) (26%), and work-upof dyspnea (13%). The mean time to an appointment from the time a new consult was requested was 48 days (45–52 days, 95% CI). Patients requiring an in-person consultation had similar wait times for appointment (mean 44 days, 95% CI 32–55 days, p=0.46) when compared to patients with telemedicine consultation. Patients with conditions such as hemoptysis had shorter wait times for new appointments (mean 31 days) as compared to all other patients (mean 49 days). To maintain continuity of care, all follow-up appointments (telemedicine and in-person) were made with the same physician. Telemedicine consultation resulted in a clinically significant change in management for 130 (41%) patients. Change in medication was recommended for 34.5% of patients. Patients with abnormal Pulmonary Function Tests (PFT) or dyspnea were more likely to have medications changed (50% and 45% respectively) as compared to patients evaluated for abnormal radiology (17% medication change). Patients evaluated for hemoptysis or abnormal radiology were more likely to require a further diagnostic procedure (48% and 46% respectively) as compared to patients evaluated for abnormal PFT (25%). A follow-up telemedicine visit was required for 51% of patients after their initial telemedicine consultation. The median number of telemedicine encounters was 2 per patient, ranging from 1 to 12 visits per patient. A large number of patients (43%) required only one telemedicine visit and were referred to follow-up with an Iron Mountain VAMC primary care provider. Only 55 of 684 patients (rate of transfer 8%) required further work-up or an in-person (“face-to-face”) pulmonary clinic visit at the Milwaukee VAMC. Patients referred for abnormal radiographic findings, cough, dyspnea, asthma, and hemoptysis were equally likely to get care by telemedicine only or to have a follow-up face-to-face visit. However, patients referred for COPD were significantly more likely to require a subsequent face-to-face follow-up. | | | The provision of subspecialty services using telemedicine to a remote underserved rural population provides improved patient access to subspecialty care. Physicians are able to rely on medical history and radiology to manage patients across a broad spectrum of complex pulmonary conditions with the assistance of a non-physician health care provider at the remote site. | | |

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| 204. Read M, Small P, Donaher K, et al. Evaluating parent satisfaction of school nursing services. *Journal of School Nursing.* 2009;25(3):205-213.[204](#_ENREF_206) | To determine the extent to which school nursing services are meeting parent/guardian expectations in terms of both quality of care and access to information from the nurse, if needed by parents/ guardians; the communication between the school nurses and parent/guardians are informative; and nursing care is readily available to the student, especially in times of an emergency. | The study was conducted during the 2005-6 school year (1,323 surveys returned), the 2006-7 school year (1,663 surveys returned) and the 2007-8 school year (1,599 surveys returned) in Massachusetts school districts that are funded through the Essential School Health Services program. | Quantitative  Qualitative  Longitudinal  Survey | To begin to evaluate client satisfaction as a component of Essential School Health Services parent/guardian feedback was solicited through the development and distribution of 100 surveys to each school district, each year. An algorithm was used to determine how many families would receive a survey, as determined by school size. | 2 |
| **Results** | | | **Conclusion** | | |
| Throughout all three administrations, a large proportion (over 90%) of parents consistently reported being satisfied with school nursing services. The question with the greatest proportion of parents reporting satisfaction referred to overall satisfaction, whereas the lowest percentage of parents reporting satisfaction was to the question  regarding quick emergency care. Further analysis was conducted between parents of children with special health care needs and parents of children without special health  care needs. In 2007, a total of 617 parents (37%) self-reported having a child with special health care needs and 96% reported being overall satisfied with school nursing services. To account for the non-normal distribution of both groups and the ordinal  nature of the responses, differences in the level of total satisfaction (total satisfaction equals the sum of all six satisfaction question scores) were assessed using the Wilcoxon rank sum scores. The two-tailed mean rank satisfaction scores of parents with self-identified special health care needs were significantly higher (p<0.0001) than those parents of children without special health care needs. Many parents wrote individual comments on the surveys. Themes included the professionalism and compassion of the school nurses. Other comments revolved around areas for improvement, such as wanting more information from the school nurses regarding their child’s visit and having a nurse at the school more consistently. | | | The results indicate that parents/guardians have a high level of satisfaction with school nursing services. Mean rank satisfaction scores of parents of children with special health care needs were significantly higher than those parents of children without special health care needs. The results of this study are important to school nurses because they validate the services that the school nurses are providing on a daily basis. Perhaps more importantly, the survey results document the public’s satisfaction with the health services that are being provided. This is crucial feedback for both local school administrators and state decision makers to have available when deciding on future funding for school health services. | | |

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| 205. Rosati RJ, Marren JM, Davin DM, et al. The linkage between employee and patient satisfaction in home healthcare. *J Healthc Qual.* 2009;31(2):44-53.[205](#_ENREF_207) | To examine the experience of a large, nonprofit home care agency in exploring how can central performance metrics and strategic imperatives interact, and if so, how can the relationship be leveraged to obtain maximum gains in both employee and patient satisfaction. | 19,067 patients and 1,364 visiting nurse staff in a Visiting Nurse Service of New York, a large urban not-for-profit home health care agency participated in this study. | Quantitative  Cross-Sectional  Survey | A mail survey conducted by Press Ganey Associates was utilized to gather data from the organization’s post-acute care, long-term, maternity, newborn, and pediatric populations. As part of the agency’s quality improvement (QI) efforts, each month a random sample of active and discharged patients received a hard copy survey mailed to them by Press Ganey along with a self-addressed, stamped envelope in which to return the completed survey. Thirty-nine questions were used from the standard Press Ganey home healthcare survey that came from the following sections: arranging your home healthcare, dealing with the home healthcare office, nurses, home health aides, therapists, and final ratings. Structural equation modeling statistical analyses were performed. | 2 |
| **Results** | | | **Conclusion** | | |
| When examining the linkage between the satisfaction of the entire staff and the patients, data showed that quality/customer focus was the only statistically significant (p<0.05) primary driver that influenced overall patient satisfaction. There was a 0.15 relationship between quality/customer focus and patient satisfaction. Among nurses, work-life balance was the only statistically significant driver that directly influenced overall patient satisfaction. Work-life balance had a low relationship with overall patient satisfaction at 0.18. Fair compensation was a significant secondary driver, highly related with work-life balance at 0.63, while employee involvement was moderate with a 0.33 coefficient. The primary driver that influenced satisfaction with nursing care was fair compensation, which had a 0.15. Work-life balance was a significant secondary driver, having a high relationship of 0.59 and regard for employees also exerted a strong influence with a 0.58 coefficient. | | | The study results indicate that nurses play a unique role in influencing overall patient satisfaction. Nurse satisfaction with work-life balance is primary driver of patient satisfaction and as such, organizations that commit resources to improving work-life balance among nurses may experience multiple sustained benefits and a notable competitive advantage. Addressing work-life balance among nurses will not only improve job satisfaction, but is likely to increase retention, engagement, patient satisfaction and enhance outcomes while simultaneously reducing recruiting costs and staff shortages.. Fostering a culture of innovation and best practices, celebrating outstanding performers, and facilitating meaningful dialogue and dynamic, two-way communication among staff and managers is a path that promises rewards and success. These efforts are the infrastructure of a commitment to quality and outstanding customer focus. Endeavoring to make meaningful changes that improve employee satisfaction, whether those efforts represent significant cultural changes or refinements, adds up to clinical and fiscal gains that improve patient care and yield employees who are more engaged and committed. | | |

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| 206. Roszell S, Jones CB, Lynn MR. Call bell requests, call bell response time, and patient satisfaction. *Journal of Nursing Care Quality.* 2009;24(1):69-75.[206](#_ENREF_208) | To determine whether call bell response time or number of calls could be used as a tool for obtaining immediate feedback on the status of the nursing unit, specifically on the state of patient satisfaction. | The study was conducted on a 32-bed surgical unit at a major academic medical center in the Southeastern U.S with a staff of 30 RNs and 11 nursing assistants. | Quantitative  Cross-Sectional  Correlational  Pilot study | Results from a patient satisfaction survey administered at discharge were examined in relation to the number of call bells from the patient’s room and call bell response time. At the time of the study, the nurse-to patient ratio was 1:5, occasionally 1:6. The number of calls was measured as the number of times per day a call was initiated from a patient room as recorded by the Responder IV call management software. This number was averaged over a patient’s length of stay to determine the number of calls per day. The call bell response time was measured as the length of time between activation and the time the call was answered and the patient’s call bell was turned off. Patient satisfaction surveys (Patient Assessment of Quality Service- Acute Care Version) were offered to every patient over 18 years who had the ability to answer in English within 36 hours prior to discharge. Patients had the choice of filling out a written survey or having it administered verbally. Patients were matched to their room number and date through a tracking number. | 2 |
| **Results** | | | **Conclusion** | | |
| The unit had an average of 320 call bell requests a day (range, 258–396). Call bell requests increased prior to meals when patients needed help with eating and in the early morning when patients were awakened for the measurement of vital signs and toileting needs. Although nurse response time was a metric of interest in this study, this measure could not be used because staff who handled patient requests often bypassed the call bell system by contacting nursing staff directly via telephone. Consequently, the software-recorded response times measured the time it took for any staff member to communicate verbally with the patient via the intercom system versus the time of a nursing staff’s response to the call bell request. Call bell response time ranged from 2 seconds to 5 minutes, with a mean of 11 (SD=5.7) seconds. Factor reliability estimates (coefficient α) for the Patient Assessment of Quality Service—Acute Care Version (PAQS-ACV) ranged from 0.55 to 0.95 for 4 of the 5 factors. The reliability of 2 of the PAQS-ACV factors (environment and responsiveness) was suboptimum. The environment factor with only 2 items has previously been reported to have reliability estimates just below the commonly accepted minimum of .70. However, in this study, it was 0.55, suggesting results from this factor are not sufficiently reliable to warrant further analysis. | | | This study explored the relationship between the number of call bells and call bell response time, and patient satisfaction. Although it would seem that high call bell response time and number of calls would reflect patients’ dissatisfaction, the study did not show such a correlation. All of the correlations were both low and nonsignificant. This is probably at least partially caused by the small sample size and the low variability of call bells. | | |

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| **Non-experimental studies (N=97)** | | | | | |
| **Citation** | **Study Aim** | **Population/ Setting** | **Study Design** | **Methods** | **Outcome Measures**  1=care processes  2=patient experience  3=patient health indices  4=quality of life  5=cost |
| 207. Samuels JG, Fetzer S. Pain management documentation quality as a reflection of nurses' clinical judgment. *Journal of Nursing Care Quality.* 2009;24(3):223-231.[207](#_ENREF_209) | The purpose of this study was to describe the quality of nurse judgment and pain medication documentation (PMD). | The study was conducted in a convenience sample of 3 surgical units of 2 metropolitan teaching hospitals in the U.S. 85 nurses consented to allow a review of 4 of their PMD entries from patients’ medical records. | Quantitative  Cross- Sectional  Descriptive  Retrospective Chart Review | Using a computer-generated list, the medical records from the 3 surgical units were reviewed. The medical record was included in the study if the patient had a surgical procedure, was not using epidural opioids  or patient-controlled analgesia for pain control, and was cared for by at least 1 of the nurses agreeing to participate. The first entry by any of the participating  nurses documenting pain in the medical record was included in the study. The record review consisted of identifying a nursing assessment, intervention, reassessment, and further intervention of the patient’s pain. The daily nursing flow sheets, progress notes, and  medication administration records were examined. The Samuels’ Pain Management Documentation Rating Scale (SPMDRS) 21 assigns a score (1 = excellent to 7 = very poor) for 55 possible data combinations or patterns of assessment, intervention, reassessment, and further  intervention documentation. To use the instrument,  extracted data are sorted first by assessment, then by intervention, then by reassessment, and finally by further intervention to identify patterns. Both the nurses’ scores and entry scores were analyzed descriptively. | 1 |
| **Results** | | | **Conclusion** | | |
| Four record entries per nurse provided 340 entry scores for analysis. Nurses’ mean scores ranged from 2.5 to 6.5 with a sample mean of 3.9 (SD=0.77). Age and experience did not correlate significantly with nurses’ PMD scores. Nurses with bachelor’s degrees scored significantly better on the Samuels’ Pain Management Documentation Rating Scale (SPMDRS) than did the combined group of nurses with a diploma and associate’s degree (t=2.137, df=83, p=0.036). SPMDRS scores of the Magnet facility nurses were significantly better than those of nurses practicing at the non-Magnet facility (t=3.85, df=83, p<0.000). Scores also differed significantly by unit (analysis of variance) (F=10.55, df=2, p<.000). Post hoc tests revealed that the 2 Magnet units scored significantly better than the non-Magnet unit. After dummy coding, a standard multiple regression using the 5 demographic characteristics as potential predictors of SPMDRS scores resulted in a significant model (Adjusted r2=0.121, F=1.899, df=13; p=.046). The hospital variable emerged as the only significant predictor of SPMDRS scores. Joint Commission standards were met by 42.1% (N=143) of the PMD entries. No assessment had been documented in 24% (N=80) of the entries, and no reassessment was found in 45% (N=152) of the entries. Eight of the 55 possible PMD patterns comprised 63.5% of the entries, showing that much of the PMD in this sample of entries is similar in content. The unit percentages of PMD pattern use demonstrate that these 8 prevalent patterns differed among the units, possibly indicating the presence of unit-specific PMD. Two of the 8 prevalent patterns met Joint Commission standards; however, 1 of the 8 patterns, representing 11.9% of the entries sample, scored a 7 or was in the “very poor” category. | | | The results of this study extend the literature by identifying that nurses’ PMD as a reflection of their clinical judgment is well below the quality required to meet evidence-based pain management (EBPM) guidelines or Joint Commission standards. The lack or inconsistent documentation of the numeric rating pain scale found in this study has been validated in the literature as well as the lack of a documented pain assessment and reassessment in the patient record. | | |

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| **Citation** | **Study Aim** | **Population/ Setting** | **Study Design** | **Methods** | **Outcome Measures**  1=care processes  2=patient experience  3=patient health indices  4=quality of life  5=cost |
| 208. Sennour Y, Counsell SR, Jones J, et al. Development and implementation of a proactive geriatrics consultation model in collaboration with hospitalists. *Journal of the American Geriatrics Society.* 2009;57(11):2139-2145.[208](#_ENREF_210) | To describe the approach and experience in the development and implementation of a Proactive Geriatrics Consultation Model in its first 4 years. | The sample was comprised of 1,538 consultations experienced by 1,358 geriatric patients conducted by 28 NP and MD hospitalists in a single, 750 bed, Midwestern, urban, community teaching hospital. | Quantitative  Longitudinal  Descriptive  Retropective Chart Review | The authors analyzed patient characteristics, reasons for referral, disposition, diagnoses, recommendations, number of referrals, and hospitalists’ satisfaction with the service. In addition, the service underwent an evaluation after the first year to review the geriatric conditions identified and treated and comparison of the length of stay (LOS) with that of patients’ not undergoing consultation. Hospital administrative data was used to compare LOS index and variable direct costs, adjusted for case mix index of patients seen by the consultation service and those seen by a comparison group of physicians. A Web-based survey was conducted of all hospitalists who requested geriatrics consultation at least once between February 2004 and December 2007 and were still on the hospital medical staff in January 2008. Each referring hospitalist received an electronic-mail message inviting him or her to complete a 13-item questionnaire asking for ratings of the quality of geriatrics consultation and services. Five-point Likert scales were used to rate satisfaction. | 1, 5 |
| **Results** | | | **Conclusion** | | |
| The number of referrals and referring physicians grew steadily over the first 4 years of the program. The consulting team conducted 194 consultations in 2004, 333 in 2005,  455 in 2006, and 556 in 2007. The number of referring physicians grew from 29 in 2004 to 86 in 2007. All responding hospitalists agreed that the consultation service helped them provide better care to their older patients, and 96% rated the consultation service overall as excellent. Although feedback was positive, areas identified for improvement included timeliness of the consultation and provision of weekend coverage. In the first year of the program, the most frequent geriatric conditions identified and treated by the consultation team were difficulty walking and falls, delirium and dementia, depression, urinary incontinence, chronic pain, malnutrition, and polypharmacy. In 2004, the length of stay (LOS) index and case mix index (CMI)-adjusted variable direct cost per patient were interpreted as being the same or lower in patients receiving a geriatrics consultation than in those without. Analyses in 2005, 2006, and 2007 demonstrated similar trends in LOS index and CMI-adjusted variable direct cost comparisons. In 2007, the program consisted of a 0.65 full-time equivalent (FTE) geriatrician and 1 FTE NP. The estimated total cost of the consultation service was $256,110. Revenue from Medicare-reimbursed visits billed by the geriatrician and NP offset approximately 61% of these costs. Otherwise, the hospital subsidized the consultation service to cover providers’ costs. | | | In a large community teaching hospital, a group of hospitalists was successfully worked with to develop a proactive inpatient geriatrics consultation program focusing on preventing functional decline of hospitalized older patients. The hospitalists responded favorably and valued the consultation service highly. Quality improvements, lower LOS index and hospital costs, and contributions to physician training programs led to the sustainability and growth of the service. The Proactive Geriatrics Consultation Service represents a promising model of collaboration between geriatricians and hospitalists toward improved hospital care for older adults and one that warrants more rigorous evaluation. | | |

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| **Non-experimental studies (N=97)** | | | | | |
| **Citation** | **Study Aim** | **Population/ Setting** | **Study Design** | **Methods** | **Outcome Measures**  1=care processes  2=patient experience  3=patient health indices  4=quality of life  5=cost |
| 209. Serber ER, Finch NJ, Leman RB, et al. Disparities in preferences for receiving support and education among patients with implantable cardioverter defibrillators. *Pacing and Clinical Electrophysiology.* 2009;32(3):383-390.[209](#_ENREF_211) | To examine current support and information/educational needs and preferences among implantable cardioverter-defibrillator (ICD) patients receiving follow-up care. | 108 patients or family members were recruited to participate from an academic medical center (Medical University  of South Carolina [MUSC]) and an offsite MUSC cardiology clinic. ) | Quantitative  Cross- Sectional  Descriptive | The investigators developed a 10-item instrument to assess ICD patient and caregiver needs (if any) and preferences of format for support and education regarding living with an ICD. The survey was composed of both closed- and open-ended questions assessing limited patient information (i.e., age, race, gender), duration of ICD implant, and respondent to the survey (i.e., patient, spouse, family member, or friend). The responses of two multiple-choice items assessing support (five response choices) and information/ education preferences (nine response choices) are the focus of this paper. The survey was distributed at a regularly scheduled clinic visit. Descriptive statistics, Pearson chi square and independent t-tests were conducted. | 2 |
| **Results** | | | **Conclusion** | | |
| Overall, ICD patients reported that their support needs had been met (71%) and they had been provided an appropriate amount of information regarding the ICD (84%). However, unique disparities were seen across racial, gender, and age groups in modality preference for support and education. There were no significant differences between the two sites for race (Pearson χ2 [1, n=104]=1.993, p=0.158) or gender (Pearson χ2 [1, n=107]=2.860, p=0.091) while the offsite clinic group on average was 4.33 years older (Ms=63.8± 11.3 vs. 68.2 ± 9.0) (t[105]=–2.115, p=0.037). Among the five response choices for mode of support patients and caregivers preferred, there were no statistically significant differences between race groups (Pearson χ2 analyses, p values 0.072–0.816). There were significant differences between men’s and women’s responses in the mode of support they preferred to receive. Examining age differences across mode of support preferences indicated that younger patients (≤ 67.0 years of age) preferred to receive support via Internet chat room with other ICD patients (Pearson χ2 [1, n=106]=4.396, p=0.036). Similarly, among the responses for mode of information, younger patients also preferred to receive information through an Internet Web site with information about defibrillators (Pearson χ2 [1, n=106]=5.275, p=0.022). The other support and information choices were not statistically significant (p values: 0.112–0.960). | | | The findings suggest methods of providing better care to ICD patients by offering them support and educational materials in their preferred modality. These data can aid in optimizing clinical care. Incorporating assessments of individual preferences into future clinical trial design is desirable.  Just as each ICD is programmed for the patient, so should each patient’s preferences be considered for his/her psychosocial and educational care. | | |

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| **Citation** | **Study Aim** | **Population/ Setting** | **Study Design** | **Methods** | **Outcome Measures**  1=care processes  2=patient experience  3=patient health indices  4=quality of life  5=cost |
| 210. Sherwood KL, Price RR, White TW, et al. A role in trauma care for advanced practice clinicians. *Journal of the American Academy of Physician Assistants.* 2009;22(6):33-36, 41.[210](#_ENREF_212) | To describe the advanced practice clinician (APC) trauma-care delivery model at a level I trauma hospital following the loss of surgical residents and compare 2006 patient outcomes from this new model with those in the National Trauma Data Bank (NTDB). | The study was conducted at the LDS Hospital in Salt Lake City, a Level I trauma center. A retrospective sample of 967 patients charts who were admitted to LDSH for trauma care were reviewed. | Quantitative  Cross- Sectional  Retrospective Chart Review | Due to the implementation of a new model of care at  LDS Hospital (LDSH), this study was undertaken. The NTDB, , is the largest aggregation of trauma registry data ever assembled. For the purposes of this study, the mechanism of injury (MOI) defined by cause of injury, length of hospital stay (LOS) in days, and mortality for trauma patients admitted to LDSH were compared with similar information in the NTDB. Further comparison included organizing patients into the four levels of injury severity score (ISS), i.e., 1 to 9, 10 to 15, 16 to 24, and >24, for both sets of data. | 3, 5 |
| **Results** | | | **Conclusion** | | |
| The trauma service at LDSH admitted 967 patients in 2006. For that same year, the NTDB contained information on 1,055,450 patients within the same categories of trauma found at LDSH. The highest percentage of injuries, both at LDSH and in the NTDB, resulted from motor vehicle collision (MVC), followed by falls. When comparing the MOI between LDSH and the NTDB, the combined injury pattern difference is statistically significant using a chi-square test with simulated p value (p<0.0001). The largest contributors to this difference are the categories of MVC, machinery, pedestrian, and cyclist. The LOS by MOI was not significantly different for the following categories: fall, firearm, transport, cut/pierce, machinery, cyclist, and other. LDSH demonstrated significantly greater LOS for patients injured by MVC, struck, and pedestrian for p values and CIs. The comparison of percentage of patients categorized by ISS from LDSH and the NTDB. For the lowest quartile ISS (1 to 9), the NTDB had nearly double the percentage of patients. LDSH had higher percentages in the remaining three quartiles: 10 to 15, 16 to 24, and >24. LDSH had a shorter LOS for all categories. However, the difference in LOS for ISS >24 did not reach statistical significance. There were no overall statistical differences in mortality data between the LDSH and NTDB data after accounting for the differences in MOI (from a logistic regression comparing a model with location [LDSH versus NTDB], MOI, and the interaction to a model containing only MOI). However, LDSH had a statistically lower overall combined mortality rate when categorized by ISS using a chi-square test of proportions (p<0.0001). This difference in overall combined mortality rate was mainly driven by the lower mortality rate in the third quartile (ISS 16-24). | | | An APC trauma-care delivery model seems to provide outcomes at least as good as and possibly better than those reported in the NTDB. Integrating APCs into a trauma service is a viable option for trauma services wishing to maintain excellent patient outcomes and improve satisfaction with the loss of surgical resident participation. Allowing for other delivery models could help improve continued access to excellent care for the injured patient | | |

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| **Citation** | **Study Aim** | **Population/ Setting** | **Study Design** | **Methods** | **Outcome Measures**  1=care processes  2=patient experience  3=patient health indices  4=quality of life  5=cost |
| 211. Stanton M, Dunkin J. A review of case management functions related to transitions of care at a rural nurse managed clinic. *Professional Case Management.* 2009;14(6):321-327.[211](#_ENREF_213) | To determine the specific case management tasks and how these functions related to, or enhanced, lateral transitions in care. | The study was conducted in a rural, nurse-managed, primary healthcare setting in the U.S. over 3 months; 237 patient referrals were analyzed for the study. | Quantitative  Longitudinal  Retrospective | A content analysis of the case management logs provided the data for this study. To facilitate the collection of data, the case managers documented the specific case management functions they performed for 3 months. Activities performed by the case managers were entered into a case management log specifically designed for this data collection. These logs were kept in a secure location and only the case managers entered information into the logs. | 1 |
| **Results** | | | **Conclusion** | | |
| Approximately 45% of the case manager’s time was spent coordinating referrals to a wide variety of specialty clinics for diagnostic testing, obtaining appointments with community-based family practice physicians, or coordinating examinations for specialty physicians. These providers and/or clinics provide care for the Medicaid, underinsured, or uninsured patients for little or no cost. Through the content analysis, it was possible to identify the types and frequency of tasks case managers were performing. It was determined from the logs that the case managers follow up to determine whether patients are keeping appointments. If patients have life events that interfere with appointments, case managers will assist in making new appointments. Their log entries indicated that they helped to arrange transport if the patients had no means of getting to and from appointments. The case managers noted that they reinforced patient education provided by the nurse practitioner (NP) and clinic nursing personnel. The case managers do record follow-up with providers and/or clinics to determine changes to the plan of care. The case managers also follow up with referring clinics and physicians to determine new courses of treatment and incorporating these into the plan of care. Log entries indicate communication between clinics, providers, and case managers. | | | The role of the case manager in this unique environment indicates that case managers are very involved in  procuring and coordinating medications, especially for the under- or uninsured populations. It is very clear  that the case managers are the main coordinators of lateral transfers. They find providers and clinics in the  community that can provide the services the patient requires and then they negotiate transportation and deal with any barriers to those referrals. The case managers are also communicating with the providers and clinics where patients have been referred after the appointments. To comply with the National Patient  Safety Standards, it is suggested that there be a standard format for giving and receiving the information. This will be a follow-up goal for this study based on findings. Because the case manager is so involved in the scheduling and coordination for these referrals, it seems appropriate that this documentation would be a function of that role in this particular setting. | | |

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| 212. Sturdivant L, Warren NA. Perceived met and unmet needs of family members of patients in the pediatric intensive care unit. *Crit Care Nurs Q.* 2009;32(2):149-158.[212](#_ENREF_214) | To conduct a pilot study to identify and explore the perceived met or unmet needs of family members who had children hospitalized in the pediatric intensive care unit (PICU). | The study was conducted in a 12 bed pediatric unit in a large urban U.S. hospital trauma center. A purposive, convenience sample of 20 family members was recruited to participate. | Quantitative  Cross-Sectional  Exploratory, Descriptive  Interviews | The Demographic Data Questionnaire and the Needs Met Inventory (NMI), a 2 part instrument, was used for data collection. Data analysis reported the top 10 always met/usually met needs and top the 10 never met/sometimes met needs in order of importance during the first 24-36 hours after admission of the pediatric patient. Parents were approached by the investigator at 24-36 hours after admission of their children to the PICU. Data was collected over a 6 month period. | 1, 2 |
| **Results** | | | **Conclusion** | | |
| Of the 15 items under the subscale support, only 1 item, “to have directions as to what to do at the bedside”, scored highest under always met/usually met on the needs met inventory (NMI). Of the 8 items under subscale information on the NMI, “to know what was being done to the patient and to talk to the doctor every day” scored highest under always met/usually met needs. None of the 8 items under the subscale information were listed in the top 10 needs of never met/sometimes met on the NMI. Of the 9 items under subscale proximity on the NMI, “to have seen the patient frequently and to have the waiting room near the patient” scored highest under always met/usually met needs. Never met/sometimes met need was “to have talked to the same nurse every day”. Of the 7 items under subscale assurance on the NMI, “to have questions answered honestly”, “to have explanations given that were understandable”, “to have felt that the hospital personnel cared about the family member”, “to know the prognosis”, and “to have felt that there was hope” scored highest under always met/usually met. Of the 6 items under subscale comfort on the NMI, none were listed in the top 10 as always met/usually met. Never met/sometimes met need was to have comfortable furniture in the waiting room. | | | In summary, the interesting finding that assurance needs provided the highest mean from the NMI may be attributed to the caring aspect of pediatric nurses who are faced with assisting young lives to return to more  optimal levels of functioning. Pediatric nurses tended to provide assurance that the pediatric patients were receiving the best possible care that could be offered. Families desired nurses to explain prognoses, answered questions honestly, instill hope for the best outcomes, and provide assurance that the best possible care was being offered by discussion using understandable terms. Family members hope for the best possible outcome for their young children and desire that positive assurance. | | |

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| **Citation** | **Study Aim** | **Population/ Setting** | **Study Design** | **Methods** | **Outcome Measures**  1=care processes  2=patient experience  3=patient health indices  4=quality of life  5=cost |
| 213. Sturm BA. Articulating the value of psychiatric community health nurse interventions: a secondary analysis. *Journal of the New York State Nurses Association.* 2009;40(1):17-23.[213](#_ENREF_215) | To discover and articulate the nature and value of therapeutic  nursing interventions (TNIs) utilized by psychiatric community health nurses (PCHNs). | This was a secondary analysis of an original ethnographic study of psychiatric community health nursing practice which was conducted between August 1, 2000, and July 7, 2001. 9 psychiatric community health nurses a psychiatric clinical nurse specialist and a variety of multidisciplinary health professionals were observed. | Qualitative  Cross-Sectional  Secondary Analysis of Ethnographic Study Findings | The new analysis of an existing dataset provides evidence of how TNIs, executed with a high level of sensitivity and skill, enable the PCHN to address and effectively manage the complex healthcare needs of patients with chronic mental illness. The original ethnographic study, employed the traditional methods of ethnographic design, utilizing participant observation methods in field work, many semi-structured interviews, and analysis of agency documents: no patient records were utilized. A secondary analysis of the field notes was completed, extricating descriptive data from two broad thematic data categories clarified as Issues/Conflicts and Nursing Interventions, which were chosen from the original nine broad thematic categories previously identified. This secondary analysis involved re-reading the portions of the original field notes, which were located by following references and cross-references indexed under the two broad thematic categories and their subcategories. | 3, 4 |
| **Results** | | | **Conclusion** | | |
| This analysis serves to articulate and emphasize the importance of increasing the recognition of the value of TNIs provided by PCHNs. Two major points emerged from the data: Nursing interventions that guide small behavioral improvements or maintain a patient with chronic illness are seldom reimbursed (not valued) by most insurers and, consequently, nurses experience a stressful conflict when they are financially restricted from providing services that they have seen to make a positive difference in patients' lives. Many of the scenarios demonstrating how TNIs make a difference took place only because these patients had either Medicaid long-term care coverage with mixed medical-psychiatric diagnoses, or other medical issues had made Medicare coverage possible for longer than the common one- or two-visit limit. In addition, the reimbursement restrictions of third-party payers normally curtail nursing visits to a one- to two-visit time frame. Patient non-compliance and inconsistent adherence with prescribed medication, healthcare regimens, and medical appointments are common complications for persons with mental illness. The unpredictable observable patient behaviors, including hallucinations, delusions, paranoia, confusion, and impulsive, manipulative, or controlling behavior, represent additional obstacles to the delivery of quick teaching interventions that could have any impact on the patient's ability to comply with a therapeutic regimen. This makes it frequently impossible to deliver TNI with enough ongoing consistency to create a lasting positive outcome. | | | The author hopes that articulating the value and nature of TNIs as researched and documented in this particular practice setting will provide impetus for needed healthcare reform and call attention to the value of the skills that psychiatric nurses working in the community can provide through ongoing, consistent, individualized nursing care. Community-based psychiatric nursing services may be feasible alternatives to those institutions, nursing homes, and day programs that are currently used for the management of the needs of persons living in the community with mental illness. The concept of such teams may suggest ways to provide needed assistance that are more humane, individualized, and sensitive to a patient's right to choose to remain in a home environment with ongoing consistent nursing visits when needed. | | |

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| **Citation** | **Study Aim** | **Population/ Setting** | **Study Design** | **Methods** | **Outcome Measures**  1=care processes  2=patient experience  3=patient health indices  4=quality of life  5=cost |
| 214. Suhrie EM, Hanlon JT, Jaffe EJ, et al. Impact of a geriatric nursing home palliative care service on unnecessary medication prescribing. *American Journal Geriatric Pharmacotherapy.* 2009;7(1):20-25.[214](#_ENREF_216) | To evaluate whether a geriatric palliative care team reduced unnecessary medication prescribing for elderly veterans residing in a nursing home. | The study consisted of 89 patients who died while residing in the geriatric palliative care unit of a Veterans Affairs (VA) in Pennsylvania. | Quantitative  Longitudinal  Retrospective  Descriptive | The computerized patient record system was used for data analysis. A trained clinical pharmacist created a chart abstract for each patient that contained data from the most recent admission to the unit until death, plus demographic information, bar code medication-administration record and other medical history data. Assessment of unnecessary medication use was assessed using the Unnecessary Drug Use Measure and the Medication Appropriateness Index. | 1 |
| **Results** | | | **Conclusion** | | |
| When evaluated using the Unnecessary Drug Use Measure, the number of unnecessary medications per patient decreased from a mean (SD) of 1.7 (1.5) at admission to 0.6 (0.8) at closeout (p=0.003). A decrease in unnecessary prescribing between admission and closeout was noted in all 3 categories, but the results were statistically significant only for indication and effectiveness (both, p<0.001). There was no statistically significant correlation between length of stay and reduction in unnecessary drugs. In descending order, the drug classes most frequently classified as unnecessary were gastrointestinal agents (e.g., docusate), vitamins, central nervous system agents (e.g., antipsychotics), endocrine agents (e.g., insulin), and antithrombotic agents (e.g., heparin). Use of all of these drug classes decreased from admission to closeout. | | | At this Veterans Affairs nursing home, an interdisciplinary geriatric palliative care team reduced the number of unnecessary medications prescribed for elderly patients. Future studies should examine the impact of decreasing unnecessary prescribing on clinical outcomes such as adverse drug reactions. | | |

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| **Citation** | **Study Aim** | **Population/ Setting** | **Study Design** | **Methods** | **Outcome Measures**  1=care processes  2=patient experience  3=patient health indices  4=quality of life  5=cost |
| 215. Swanson MW, McGwin Jr G, Elliott AF, et al. Association between the nursing home minimum data set for vision and vision-targeted health-related quality of life in nursing home residents as assessed by certified nursing assistants. *Journal of Optometry.* 2009;2(3):148-154.[215](#_ENREF_217) | To evaluate the association between the federally mandated Minimum Data Set (MDS) Vision Patterns assessment for nursing home residents in the United States and an assessment of their vision-targeted quality of life as assessed by certified nursing assistants (CNA). | 371 nursing home residents over the age of 55 from 17 nursing homes in Birmingham, Alabama and the CNAs directly assigned to their care were recruited to participate. | Quantitative  Cross-Sectional  Prospective | CNAs assessed the vision-targeted quality of life of residents in their charge using the Nursing Home Vision-Targeted Health-Related Quality of Life (NHVToL) questionnaire. MDS assessment categories were obtained from the medical record. Visual acuity was measured using logMAR charts by trained research staff. | 1 |
| **Results** | | | **Conclusion** | | |
| CNA-rated NHVQoL subscale scores decreased as the MDS rating indicated more vision impairment (all p’s for trend <.05). Almost all mean scores were in the 80s and 90s for those in the adequate, impaired and moderately impaired categories. For those with MDS ratings of severely or highly impaired, NHVQoL subscale scores (except ocular symptoms) were dramatically lower (p≤0.001) then those rated as moderately impaired. | | | Ratings by CNAs on the vision-targeted quality of life of nursing home residents under their care is in general agreement with the MDS category assigned by the nurse coordinator. However, CAN ratings are largely homogeneous in the adequate vision to moderately impaired categories. Overall, the results of this study suggest that MDS nurse coordinators and CNAs at the nursing homes participating in this study were in general agreement as to the visual status of their residents as measured through the MDS visual patterns section and the NHVQoL. This is a positive finding in that CNAs ratings of residents’ vision-targeted quality of life were correlated with residents’ objective visual acuities. Future research should be directed at clarifying the validity of the MDS and how it should be implemented if it is to be used to trigger eye care services for nursing home residents in the U.S. | | |

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| **Non-experimental studies (N=97)** | | | | | |
| **Citation** | **Study Aim** | **Population/ Setting** | **Study Design** | **Methods** | **Outcome Measures**  1=care processes  2=patient experience  3=patient health indices  4=quality of life  5=cost |
| 216. Tanios MA, de Wit M, Epstein SK, et al. Perceived barriers to the use of sedation protocols and daily sedation interruption: A multidisciplinary survey. *Journal of Critical Care.* 2009;24(1):66-73.[216](#_ENREF_218) | To determine current use of sedation protocols and daily interruption of sedation for mechanically ventilated intensive care unit (ICU) patients and identify the  perceived barriers toward use of each among critical care  physicians, pharmacists, and nurses. | 916 members of the Society of Critical Care Medicine (Physicians (60%), nurses (14%), and pharmacists (12%) were recruited to complete a web-based survey. | Quantitative  Cross- Sectional  Survey | The survey instrument was author created and was developed using focus groups consisting of intensivists, critical care pharmacists, and nurses at Tufts-New England Medical Center. The survey instrument was structured in 4 sections. The first section was designed to collect demographic parameters of the respondents and their practice setting; the second on primary sedation agent choices; the third on frequency of use of sedation protocols, involvement in the development of sedation protocols, and perceived barriers to their use; and the fourth focusing on use of daily sedation interruption and perceived barriers to its use. The final survey was distributed through an email blast to 12, 994 members of the Society of Critical Care Medicine. The survey received a 7.1% response rate. | 1 |
| **Results** | | | **Conclusion** | | |
| Most respondents (64%) practiced in ICUs where sedation protocols were implemented with 67% having participated in the development the protocol. Availability of protocols did not differ between university (64%), non-university teaching (64%), and community  hospitals (65%) but was lower in Veteran Administration hospitals (37%). Sedation protocols were more likely to be used in larger (≥20 beds) than smaller (≤5 beds) ICUs (72 vs. 43%, p=0.03). More pharmacists (81%) were involved in developing these protocols than either nurses (50%) or physicians (68%). Of the respondents who had a sedation protocol in place, the 3 most common primary perceived barriers preventing its use was a lack of a physician order for the protocol (38%), a nursing preference not to use the protocol (15%), and situations where the ICU caregiver would like more control of sedation than a protocol can afford (11%). When asked about preferred sedation regimens, 26% chose a regimen that contained propofol and 66% chose a regimen that contained a benzodiazepine. Use of a daily sedation interruption strategy was used in 50% or more of mechanically ventilated patients by 40% of respondents, although use varied widely with 23% of total respondents using it frequently (≥75% of mechanically ventilated patients) but 37% of respondents rarely or never using it (≤25% of mechanically ventilated patients). Compared to pharmacists (35%), nurses (50%, p=0.007) and physicians (44%, p=0.03) were more frequent users of daily sedation interruption. Respondents from institutions with a sedation protocol was in place were more like to use a strategy of daily sedation interruption. Respondents whose primary sedative choice was propofol were more likely to use daily sedation interruption than those whose first choice sedation regimen contained a benzodiazepine (55% vs. 40, p=0.0001). | | | Current ICU sedation practices are heterogeneous, and the barriers preventing the use of both sedation protocols and daily sedation interruption are numerous. These barriers should be addressed on an institutional basis to boost the use of these evidence-based strategies in daily practice. | | |

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| 217. Temkin-Greener H, Cai S, Katz P, et al. Daily practice teams in nursing homes: Evidence from New York State. *Gerontologist.* 2009;49(1):68-80.[217](#_ENREF_219) | To assess the prevalence of teams in nursing homes as reported by direct care staff and administrators, and examine characteristics of facilities that foster these teams. | Administrators (N=292) and direct care staff (N=6,867) in New York nursing homes (N=149) were recruited to participate in this study. | Quantitative  Cross-Sectional  Secondary Data Analysis | This study uses data collected from a larger parent project designed to examine the impact of work performance on risk-adjusted outcomes of nursing home residents in New York. Primary and secondary data sources were used. An initial survey of nursing home managers, administrators (NHA) and directors of nursing (DON) in New York was conducted. The author created survey focused on managers’ views on teams and teamwork and included information on the characteristics of respondents and their facilities. Second, an author created survey of nursing home workers was conducted examining workers’ perception of daily practice teams in their facilities, job design, and their assessment of the management style prevalent in their facilities. Secondary data, containing information on facility characteristics, were obtained from the Online Survey Certification and Reporting System. Data from the 2 surveys was merged at the facility level. A weighted linear regression model was conducted. | 1 |
| **Results** | | | **Conclusion** | | |
| In an average facility, 15.9% of the direct care workers viewed themselves as working in formally organized daily practice teams. Overall, the certified nursing assistants (CNA) reported 84% of their daily practice teams to include other disciplines, whereas the licensed practical nurses (LPN) and the registered nurses (RN) reported, respectively, 94% and 98% of their teams to be multidisciplinary. Almost half (47.2%) of the respondents reported that team meetings to discuss residents’ care occurred daily, whereas an additional 25.0% and 16.2% reported meeting at least once per week or once per month, respectively. In at least 70% of the facilities, NHAs (71.8%) and DONs (77.2%) reported presence of formal daily practice teams. Almost all viewed teams as very important in promoting residents ’ quality of life (89.6%) and clinical quality of care (90.3%). Furthermore, 79.2% reported teams as very important in maintaining good staff – resident relationships, and 68.2% thought teams were very important with regard to staff turnover and retention. Nursing home staff assessed close to 80% of the facilities as having collegial (47.65%) or supportive (30.87%) management styles, that is, not hierarchical and open to employee input, whereas an additional 21.48% reported homes with more traditional and authoritarian management style. In facilities where nursing home leaders considered teams very important with regard to clinical quality of care, team prevalence was significantly higher by 3.3%. Furthermore, team prevalence as reported by the direct care staff was 2.6% higher in facilities in which the DON reports presence of formal daily practice teams. | | | Although this analysis identifies some of the factors that are associated with higher penetration of teams, it does not answer the question of why the overall penetration of daily practice teams in nursing homes is so low. Further research into factors that facilitate the organization and functioning of teams in nursing homes may help administrators make daily practice teams more common by lowering the barriers to their implementation. Further research is needed to provide empirical evidence about the effectiveness of daily practice teams in nursing homes in terms of their impact both on costs and quality, in particular the impact on resident health outcomes. Such evidence would be useful in informing management’s decisions as to how best to organize their workforce. | | |

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| 218. Thornlow DK, Merwin E. Managing to improve quality: The relationship between accreditation standards, safety practices, and patient outcomes. *Health care management review.* 2009;34(3):262-272.[218](#_ENREF_220) | To examine relationships between patient safety practices,as measured by accreditation standards,  and patient safety outcomes in acute care hospitals as measured by hospital rates of infections, decubitus ulcers, postoperative respiratory failure, and failure to rescue. | The sample consisted of patients (1,430,981) in multiple hospitals (N=115). | Quantitative  Cross-Sectional  Retrospective  Secondary Data Analysis | Secondary data were analyzed from a stratified probability sample of U.S. acute care hospitals. Accreditation performance areas were reduced into subscores to represent patient safety practices. Outcome rates were calculated using the Agency for Healthcare Research and Quality Patient Safety Indicator software. Multivariate regression was performed to determine the significance of the relationships. | 3 |
| **Results** | | | **Conclusion** | | |
| Three of the four multivariate models significantly explained variance in hospital patient safety indicator rates. Accreditation standards reflecting patient safety practices were related to some outcomes but not others. Rates of infections and decubitus ulcers occurred more frequently in hospitals with poorer performance in using patient safety practices, but no differences were noted in rates of postoperative respiratory failure or failure to rescue. | | | The authors found that certain hospital characteristics were significantly associated with some patient outcomes, but not others, and accreditation standards specific to patient safety practices did not appear related to all four outcomes studied. Certain adverse events, such as infections and decubitus ulcers, may be reduced through preventive procedures, whereas other events, such as failure to rescue and postoperative respiratory failure, may reflect situations that require multifaceted strategies that are less  easily translated into protocols or less easily measured by accreditation standards. This study provides a useful reflection on the challenge of determining relationships between organizational characteristics and patient outcomes and highlights the need for additional inquiry regarding appropriate measurement of acute care processes, especially patient safety practices. The measurement approach may have influenced the observed associations between protective safety practices and patient outcomes; however, it represents  progress toward examining this relationship. With the continual addition of patient safety-related standards and National Patient Safety Goals into the JC accreditation process, more research is needed to determine whether these practices have impacted patient outcomes. Such research has the potential to be not only cost saving due to changes in reimbursement but also life saving for hospitalized patients. | | |

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| 219. Tolomeo C. Group Asthma Education in a Pediatric Inpatient Setting. *Journal of Pediatric Nursing.* 2009;24(6):468-473[219](#_ENREF_126) | To retrospectively determine the impact of a short, group-based, asthma self-management education program on the number of children/parents who received complete asthma education before discharge. | 1,103 children who were admitted to a New England children’s hospital from January 1, 2005 through December 31, 2006 with a primary diagnosis of asthma were included in the study. | Quantitative  Longitudinal RetrospectiveMedical Record Review | Patient data was obtained from the Resource Information Management System which contains clinical, financial, and operational data. Complete asthma education was considered documentation that the Children’s Hospital Asthma Education Checklist was completed. Descriptive statistics were used to analyze the data followed by chi-square calculations. | 1 |
| **Results** | | | **Conclusion** | | |
| When charts of patients admitted in 2005 were reviewed, it was found that 70 (15%) charts included documentation of complete asthma education before discharge. In 2006, 242 families were referred to the group education program, and 181 (75%) attended. Medical records of patients admitted with the primary diagnosis of asthma in 2006 revealed that 235 (42%) charts included documentation of complete asthma education. Chi-square was performed to determine if the frequency of documentation of complete asthma education was the same in 2005 and 2006. The data revealed that there was a statistically significant difference between the two groups (p=0.001). Furthermore, of the 235 who had documentation of complete asthma education in 2006, 166 (71%) attended the short, group-based, asthma self-management education program. Evaluations for the short, group-based, asthma self-management education program were completed by 287 participants. One hundred sixty-nine (91%) answered “yes” to the question, “Do you feel this class will help you to manage asthma better at home?” Four (2%) answered “no,” and 14 (7%) did not respond to the question. Furthermore, comments made by program participants emphasized the concepts of prevention and control. | | | This study revealed that significantly more children/parents received complete asthma education before discharge in 2006 versus 2005. In addition, this study revealed that the number of children/ parents receiving complete asthma education prior to a hospital discharge is very low. It also revealed that the number of children/parents receiving complete asthma education before discharge can be increased by instituting a short, group-based, inpatient asthma self-management education program. In conclusion, a short, group-based inpatient asthma self-management education program that is administered by asthma experts is a viable option for increasing the number of children and parents who receive asthma education. | | |

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| **Citation** | **Study Aim** | **Population/ Setting** | **Study Design** | **Methods** | **Outcome Measures**  1=care processes  2=patient experience  3=patient health indices  4=quality of life  5=cost |
| 220. Tschannen D, Kalisch BJ. The effect of variations in nurse staffing on patient length of stay in the acute care setting. *Western Journal of Nursing Research.* 2009;31(2):153-170.[220](#_ENREF_221) | To examine the relationship between nurse staffing and patient length of stay (LOS). | The sample consisted of 310 medical-surgical patients and 135 nurses in two Midwestern hospitals: a 900-bed university medical center and a 230-bed community hospital. | Quantitative  Cross-Sectional | This study was part of a larger, non-experimental study which was designed to identify how the quantity and quality of nurse staffing affect both patient outcomes (LOS) and work process (collaboration), while controlling for several unit-and patient-related characteristics. The three indicators of nurse staffing used in this investigation included hours per patient day (HPPD), skill mix, and nursing expertise. Deviation from expected LOS was the outcome measured in this study. Deviations from expected LOS, were calculated as the expected days on the unit minus the actual days on the unit, where actual LOS was calculated as the time of admission to the time of discharge. The expected LOS value was determined through the use of the Diagnostic Related Groups (DRGs), which were developed to define hospital case mix by grouping patients with similar clinical attributes and utilization patterns. Primary data collection occurred over a 5 week time frame and involved 3 phases: survey data collection from nurses (Shortell’s Organization and Management of Intensive Care Units Survey); Collection of staffing data; and retrieval of patient-specific data. | 5 |
| **Results** | | | Conclusion | | |
| Average HPPD was a positive predictor of deviation from expected LOS, whereas overall expertise was a negative predictor of deviation from expected LOS. Higher staffing levels may result in patients being discharged sooner than expected. | | | Nurse administrators must consider the quantity as well as quality of staff when determining optimal staffing levels. Unit staffing levels must include nurses who have both experiential and theoretical knowledge in order to achieve optimal patient outcomes. | | |

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| 221. Tzeng HM, Yin CY. Relationship between call light use and response time and inpatient falls in acute care settings. *Journal of Clinical Nursing.* 2009;18(23):3333-3341.[221](#_ENREF_222) | To investigate the correlation between the patient- or family-initiated call light use rate per patient-day and the average call light response time and the total fall and injurious fall rates per 1000 patient-days in four adult inpatient acute care units. | The sample consisted of archived hospital data for the period of February 5, 2007 to June 29, 2008 (72 weeks). Four units from a community hospital in Michigan provided data. | Quantitative  Longitudinal  Retrospective Secondary Data Analysis | The unit of analysis was the unit-week; a total of 288 unit-week data points were analyzed. The information recorded from the patient room call light system was used in this study. Total fall counts and the severity level of these falls were requested from the study hospital. No falls resulted in death in the study units during the study period. One-way ANOVA and correlation analyses were conducted. | 3 |
| **Results** | | | **Conclusion** | | |
| More calls for assistance related to less fall-related patient harm. Surprisingly, longer response time to call lights also related to fewer total falls and less fall-related patient harm. Generally speaking, more call light use related to longer response times. | | | Based on the findings of this study, it is logical to suggest that the call light use rate per patient-day is a predictor of the fall and injurious fall rates. Consequently, unit managers should routinely monitor the trend of the call light use rate per patient-day and ensure that this use rate is maintained at least above the mean rate. As a matter of fact, this study’s findings challenge the appropriateness of targeting the goals of reducing the frequency of call light use and the fall rates as two outcome indicators of conducting hourly rounding in inpatient care units and the Patient Service Partner program. Multihospital studies are needed to demonstrate whether the same conclusion holds across hospitals. | | |

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| **Citation** | **Study Aim** | **Population/ Setting** | **Study Design** | **Methods** | **Outcome Measures**  1=care processes  2=patient experience  3=patient health indices  4=quality of life  5=cost |
| 222. Warner DS. Feasibility of tobacco interventions in anesthesiology practices: A pilot study. *Anesthesiology.* 2009;110(6):1223-1228.[222](#_ENREF_223) | To determine the feasibility and acceptability of the Ask, Advise, and Refer (AAR) strategy in anesthesiology practices. | 97 staff members in 14 U.S. anesthesiology practices participated in this study. | Quantitative  Cross-Sectional  Survey | All methods to disseminate the AAR strategy were based on an approximately 45-min presentation that presented the rationale for anesthesiologist involvement in smoking cessation efforts and how to apply the strategy. When each practice had been implementing the strategy for at least 3 months, two author developed survey instruments were sent to each implementation leader. The first was distributed by the implementation leaders to those members of the practices who the leaders had asked to implement the strategy. It included items that assessed the amount of time spent learning about the strategy, self-efficacy regarding application of the strategy, impressions of patient reactions, estimated rates at which the strategy was applied, and general knowledge and attitudes regarding the provision of tobacco interventions to surgical patients. The second survey was completed by only the implementation leaders. It included items querying practice demographics, the number of practice members to whom the first survey was distributed, and future plans for continuing the strategy in the practice. | 1 |
| **Results** | | | **Conclusion** | | |
| Approximately half of the respondents reported that their patients frequently or almost always seemed interested in what the respondents had to say about their smoking, and approximately one-third responded that their patients frequently or almost always seemed interested in the quitlines. More than 90% of respondents found the materials provided by the American Society of Anesthesiologists (ASA) (brochures for patients and providers, quitcards, and Web site) either very or somewhat useful. Sixty-seven percent of respondents were very or somewhat interested in learning more about how to help their patients quit smoking. Regarding the effects of the pilot project on measures of practitioner attitudes towards tobacco interventions, 65% agreed that after the pilot project they knew enough about quitlines to be able to explain them to their patients, and 48% agreed they were more comfortable in addressing smoking. A majority agreed that it was part of their responsibility to advise patients to quit smoking (80%) and to assist them in getting help (64%). Most (80%) respondents agreed that quitlines could be useful to help patients quit smoking. Only 23% agreed that they did not have enough time to apply the AAR strategy in their practices. Regarding intentions for their future practice, 74% planned to incorporate the AAR approach into their individual clinical routine. Of the 51 (53%) of respondents who regularly see patients in a preoperative clinic, 44 (86%) agreed that the preoperative clinic was the best place to discuss smoking. According to the implementation leaders’ survey, eight of the nine practices who staff a preoperative clinic plan to definitely address smoking in their clinics in the future. Twelve (86%) of the practices definitely or probably will incorporate the AAR approach into their practices, and 4 (29%) plan to seek reimbursement from Medicare or other sources for providing smoking cessation counseling. A strong majority (78%) agreed that the ASA should promote the AAR strategy among their membership. | | | The results of this pilot project suggest that the AAR strategy is feasible and potentially well-accepted in wide range of clinical anesthesiology practices. Further work will be needed to define whether these practices and attitudes can be sustained and whether they are ultimately effective in modifying perioperative smoking behavior in the surgical patient. On the basis of these results, the ASA Smoking Cessation Initiative Task Force is continuing and expanding its efforts to promote tobacco control in anesthesiology practices. | | |

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| 223. Watts SA, Gee J, O'Day ME, et al. Nurse practitioner-led multidisciplinary teams to improve chronic illness care: the unique strengths of nurse practitioners applied to shared medical appointments/group visits. *Journal of the American Academy of Nurse Practitioners.* Mar 2009;21(3):167-172.[223](#_ENREF_224) | To describe the roles of nurse practitioners (NP) in a novel model of healthcare delivery for patients with chronic disease: shared medical appointments (SMAs)/group visits based on the chronic care model (CCM). To map the specific skills of NPs to the six elements of the CCM: self-management, decision support, delivery system design, clinical information systems, community resources, and organizational support. | The sample consisted of disease-specific multidisciplinary SMAs (N=3) utilizing Nurse practitioners in multiple primary care practices. | Qualitative  Cross-Sectional  Case studies | The authors used a detailed qualitative case analysis  based upon the formative evaluation of each of the disease-specific shared medical appointments (SMAs). This formative evaluation was an integral part of the continuous quality improvement methods used. Interviews were conducted with all staff participants and a convenience sample of patients from each of the SMA/groups. Each of the six interrelated structural components of the CCM—(patient) self-management support, clinical information systems (registries), delivery system design (SMAs), decision support (evidence-based guidelines), healthcare organization, and community resources were evaluated. | 1 |
| **Results** | | | **Conclusion** | | |
| NPS have multiple roles in development, intervention, and sustainability of SMAs as quality improvement interventions. Although the specific skills of NPs map out all six elements of the CCM, in our context, they had the greatest role in self-management, decision support, and delivery system design. | | | With the increasing numbers of patients with chronic illnesses, healthcare systems are increasingly challenged to provide necessary care and empower patients to participate in that care. NPs can play a key role in helping to meet these challenges.  Management of chronic illness is a longitudinal process in which NPs can play a major role. Using the CCM, NPs can define and expand their roles and opportunities to engage patients and other health professionals in the process of achieving healthful behavioral changes. NPs with their unique skills are positioned to foster patient-centered care. | | |

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| 224. Weiss ME, Lokken L. Predictors and outcomes of postpartum mothers' perceptions of readiness for discharge after birth. *Journal of Obstetric, Gynecologic, and Neonatal Nursing.* 2009;38(4):406-41[224](#_ENREF_225) | To identify predictors and outcomes of postpartum mothers' perceptions of their readiness for hospital discharge. | 141 mixed-parity postpartum mothers who had experienced vaginal birth or Cesarean delivery of normal health infants in a Midwestern tertiary perinatal center were recruited to participate. | Quantitative  Longitudinal  Correlational | A correlational design with path analyses was used to explore predictive relationships among transition theory-related variables. Within 2 hours before discharge, unit nursing staff provided the Readiness for Hospital Discharge Scale (RHDS) and the Quality of Discharge Teaching Scale (QDTS) in a study packet to be completed before discharge. The research assistants (RA) who enrolled the patient conducted a telephone interview at 3 weeks post discharge to collect Post-Discharge Coping Difficulty Scale (PDCDS) and post discharge utilization data. | 2 |
| **Results** | | | **Conclusion** | | |
| Quality of discharge teaching, specifically the relative difference in the amount of informational content needed and received and the sills of nurses in delivering discharge teaching, explained 38% of the variance in postpartum mothers’ perceptions of discharge readiness. Readiness for discharge scores explained 22% of the variance in post discharge coping difficulty scores. Nurses’ skills in delivery of discharge teaching, coping difficulty, patient characteristics, and birth hospitalization factors were predictive of utilization of family support and post discharge health care services. | | | A trajectory of influence evident in the sequential relationships of quality of discharge teaching, readiness for discharge, post discharge coping, and utilization of family support and health care services. Transitions theory provided a useful framework for conceptualizing and investigating the transition home after childbirth. | | |

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| 225. Westphal DM, McKee SA. End-of-life decision making in the intensive care unit: Physician and nurse perspectives. *American Journal of Medical Quality.* 2009;24(3):222-228.[225](#_ENREF_226) | To determine nurse and physician perceptions and actions regarding end-of-life decision making in the critical  care units of a community hospital whose patient population is predominantly medically complex and elderly. | 96 physicians (N=53) and nurses (N=43) from a single, non-profit 400 bed community hospital in South Florida were recruited to participate. | Quantitative  Cross-Sectional  Survey | An author developed questionnaire which took approximately 5 to 10 minutes to complete was distributed The content of the items as well as the readability and clarity of the questions were reviewed and revisions were made after peer input. Surveys were distributed through the medical staff office and were mailed with the quarterly medical staff newsletter for physicians, while copies of the survey were left in the staff break room for nurses and distributed in individual nursing staff mailboxes. The response rate was 12% for physicians and 67% for nurses. | 1 |
| **Results** | | | **Conclusion** | | |
| Fewer than half (45%) of physicians routinely ask patients or family members if there is a living will. Nurses were significantly more likely than physicians to ask patients or families if there is a living will (t[94]=5.65; p<0.0001). Only 53% of physicians routinely read over the wishes stated in a patient’s living will; however, 90% of physicians reported that they consider the wishes stated in the living will when making recommendations to the family. Nurses read over the patient’s wishes in the living will more frequently than physicians (t[94]=3.66; p<0.0001). The majority of physicians felt that the living will should be followed even if the health care surrogate makes decisions that counter the patient’s directives as stated in the living will. However, 17% of physicians felt that the wishes of the family should be followed instead. More nurses than physicians felt that the living will should be followed rather than the wishes of the family, but this difference was not significant (t[87]=1.81; p=0.07). Most physicians reported discussing DNR only when a patient’s prognosis was poor or when his or her condition deteriorated. Physicians were more likely than nurses to discuss DNR only when a patient’s prognosis was poor (t[93] = 2.01; p<0 .05). Significantly more nurses than physicians discuss DNR with the critically ill patient or the family immediately on or after admission to the ICU (t[93]=-2.72; p<0.01). There were no statistical differences between physicians and nurses regarding frequency of obtaining or writing a DNR order; however, it is important to highlight that 24% of physicians reported never or rarely trying to obtain or write a DNR order for a critically ill patient. | | | End-of-life care will continue to be a growing problem for physicians, nurses, patients, and health care facilities due to the increasing aging population. It is important to address these concerns not only from a patient care perspective but also due to increasing demands on our national health care resources (e.g., number of ICU beds, increased cost of care). The authors’ goal is to stimulate further research in this area to help further define end-of life strategies and processes. | | |

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| **Citation** | **Study Aim** | **Population/ Setting** | **Study Design** | **Methods** | **Outcome Measures**  1=care processes  2=patient experience  3=patient health indices  4=quality of life  5=cost |
| 226. Woodiwiss AJ, Molebatsi N, Maseko MJ, et al. Nurse-recorded auscultatory blood pressure at a single visit predicts target organ changes as well as ambulatory blood pressure. *Journal of Hypertension.* 2009;27(2):287-297.[226](#_ENREF_227) | To determine whether high-quality nurse-recorded auscultatory blood pressure (BP) values obtained at a single visit predict cardiovascular target organ changes as closely as ambulatory BP measurements. | A randomly selected sample (n=458, 21% receiving antihypertensive treatment; approximately 40% hypterensive). | Quantitative  Cross-Sectional | This study was part of the ongoing African Project on Genes in Hypertension (APOGH) initiated in 2002 . Of the 671 participants in the APOGH study, 458 consented to participate in this study. The authors compared high-quality single visit nurse-recorded auscultatory BP values to same day 24 hour ambulatory BP in their ability to predict multiple organ changes. A standardized questionnaire was administered to collect clinical, demographic and anthropometric measurements. Nurse-recorded blood pressure and 24 hour ambulatory BP monitoring was performed. Descriptive, correlational, and regression analysis was performed. | 1, 2, 3 |
| **Results** | | | **Conclusion** | | |
| The correlation coefficients and 95% confidence intervals between the mean of increasing numbers (1–5) of nurse recorded systolic BP (SBP) measurements and either 24-h, day or night SBP were r=0.677–0.695; r=0.669–0.683 and r=0.606–0.627, respectively. The correlation coefficients were almost identical irrespective of the number of nurse recordings that were assessed. Similar data were obtained for diastolic BP (DBP) (nurse-recorded DBP vs. 24-h DBP, r=0.618–0.625, P<0.0001; vs. day DBP, r=0.626–0.635, vs. night DBP, r=0.522–0.528). The difference between nurse and ambulatory BP was greater at higher BPs with the mean of three nurse recorded SBP values being 18.4616.39mmHg (n=229) higher than daytime SBP values for SBP values above the median and 0.8610.59mmHg lower than daytime SBP values for SBP values below the median. The mean of one, three and five nurse-recorded DBP values were 6.91±10.35, 6.77±9.98 and 6.82±9.91mmHg higher, respectively, than day DBP values. Importantly, nurse-recorded SBP was a predictor of left ventricular mass index (LVMI), Mean wall thickness (MWT), early-to-late diastolic transmitral velocity (E/A), pulse wave velocity (PWV) and AIc, but not log urinary albumin-to-creatinine ratio (ACR) independent of 24-h SBP. The 24-h SBP was, nevertheless, also an independent and positive predictor of log ACR, and PWV, but not LVMI, LVMWT or AIc independent of nurse-recorded SBP. Moreover, 24-h SBP was not negatively associated with E/A independent of nurse-recorded BP values. | | | This study provides the first substantial evidence to indicate that high-quality nurse recorded auscultatory BP values obtained at a single visit are equally as strongly associated with a number of cardiac, renal and vascular target organ changes as 24-h, day or night BP. Moreover, the present study indicates that high-quality nurse-recorded auscultatory BP measurements may even refine the ability to predict adverse cardiovascular changes beyond a single ambulatory BP measurement. Thus, outcome-based studies are urgently required to assess whether high-quality, well standardized nurse recorded auscultatory BPs obtained at a single visit predict cardiovascular events and mortality, as well as ambulatory  BP. | | |

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| **Non-experimental studies (N=97)** | | | | | |
| **Citation** | **Study Aim** | **Population/ Setting** | **Study Design** | **Methods** | **Outcome Measures**  1=care processes  2=patient experience  3=patient health indices  4=quality of life  5=cost |
| 227. Yee PL, Edwards ML, Dixon J, et al. Implementation of patient safety rounds in a children's hospital. *Nursing Administration Quarterly.* 2009;33(1):48-53.[227](#_ENREF_228) | To describe the implementation of patient safety rounds in a children’s hospital. | The sample was comprised of the 191 issues that were presented at patient safety rounds at the North Carolina Children’s Hospital at University of North Carolina. | Quantitative  Longitudinal  Case review | Categories of problems encountered and addressed at the patient safety rounds were created from notes kept during the meetings. | 1 |
| **Results** | | | **Conclusion** | | |
| Patient safety concerns that were identified had a varying degree of complexity and organizational importance. Within the first year of the inception of the patient safety  rounds in NCCH, 191 issues were identified and categorized. Out of the 191 issues  that were identified, 58.1% were resolved. Once patient safety issues were determined and placed on the agenda, they remained active until either the issue was resolved or the group decided to refer it to an established hospital committee for discussion. The structure and respect of this team has helped bring to light the importance of addressing identified patient safety issues within a public forum. In addition, due to the success of the safety rounds within NCCH, it was decided in January 2007 that the same format would be established in the Women’s services. | | | Patient safety rounds in NCCH have become an established routine and are looked upon by the healthcare team as a chance to discuss issues that greatly impact patient safety. During this time, the institution has  implemented other changes, which further create a culture in which patient safety is paramount. With these initiatives, it has been crucial to have support from all members of the healthcare team. Together, the healthcare team creates a climate of trust so that issues can be addressed freely and in a timely manner. | | |

| **2009** | | | | | |
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| **Non-experimental studies (N=97)** | | | | | |
| **Citation** | **Study Aim** | **Population/ Setting** | **Study Design** | **Methods** | **Outcome Measures**  1=care processes  2=patient experience  3=patient health indices  4=quality of life  5=cost |
| 228. Young S. Professional relationships and power dynamics between urban community-based nurses and social work case managers: Advocacy in action. *Professional Case Management.* 2009;14(6):312-320.[228](#_ENREF_229) | To explore how community-based managers interface with their clients’ healthcare providers and other community organizations as a function within their advocacy efforts. | 20 nurse and social work case managers working in public housing, university-affiliated community nursing centers, local parishes, and community ministry in Wisconsin were recruited to participate. | Qualitative  Cross-Sectional  Interviews | Using a combined approach to the interviews, the study employed an interview guide approach with a standardized open-ended format that is, specifying key questions and leaving other items as topics to be explored.. Follow-up questions were used to clarify and deepen the response to questions. Tape recording facilitated a meaningful interview, as it allowed the capture of all comments. Field notes were incorporated into data analysis. The confidentiality of respondents was assured and no identifying information was included. Each interview took 1–2 hours to complete. A descriptive, inductive, analytical framework for analysis was used. | 1 |
| **Results** | | | **Conclusion** | | |
| The case managers in this study reflected on how they interface with their clients, other healthcare providers, and community organizations on behalf of their clients. They reflect on the importance of trust and communication to facilitate this process. The advocacy work of case managers is influenced by the setting, others’ perceptions of their knowledge and expertise, and power dynamics. Their ability to effectively advocate is greatly influenced by the strength of the relationships they forge. | | | Case managers in an urban community-based setting are a resource for residents seeking healthcare information and serve as liaisons to the complex healthcare system. This is especially critical in a community with a fraying healthcare safety net for vulnerable residents. The advocacy work of case managers is influenced by individual and organizational factors, practice settings, perceptions of their  knowledge and expertise, and power dynamics. Advocacy is also influenced by the strength of the relationship with clients, healthcare providers, and other community-based organizations. Case management  programs would benefit from policies to nurture and strengthen these relationships. This can ultimately benefit clients and improve health outcomes for the most vulnerable populations. | | |

References

**1.** Bakas T, Farran CJ, Austin JK, et al. Stroke caregiver outcomes from the Telephone Assessment and Skill-Building Kit (TASK). *Top.* 2009;16(2):105-121.

**2.** Bakitas M, Lyons KD, Hegel MT, et al. Effects of a palliative care intervention on clinical outcomes in patients with advanced cancer: The Project ENABLE II randomized controlled trial. *JAMA: Journal of the American Medical Association.* 2009;302(7):741-749.

**3.** Bauer MS, Biswas K, Kilbourne AM. Enhancing multiyear guideline concordance for bipolar disorder through collaborative care. *Am J Psychiatry.* 2009;166(11):1244-1250.

**4.** Berger AM, Kuhn BR, Farr LA, et al. One-year outcomes of a behavioral therapy intervention trial on sleep quality and cancer-related fatigue. *Journal of Clinical Oncology.* 2009;27(35):6033-6040.

**5.** Bosworth HB, Olsen MK, Dudley T, et al. Patient education and provider decision support to control blood pressure in primary care: A cluster randomized trial. *Am Heart J.* 2009;157(3):450-456.

**6.** Bosworth HB, Olsen MK, Grubber JM, et al. Two self-management interventions to improve hypertension control: A randomized trial. *Annals of Internal Medicine.* 2009;151(10):687-695.

**7.** Brandon AF, Schuessler JB, Ellison KJ, et al. The effects of an advanced practice nurse led telephone intervention on outcomes of patients with heart failure. *Applied Nursing Research.* Nov 2009;22(4):e1-7.

**8.** Bullock L, Everett KD, Mullen PD, et al. Baby BEEP: A randomized controlled trial of nurses' individualized social support for poor rural pregnant smokers. *Maternal and child health journal.* 2009;13(3):395-406.

**9.** Cohan D, Gomez E, Greenberg M, et al. Patient perspectives with abbreviated versus standard pre-test HIV counseling in the prenatal setting: A randomized-controlled, non-inferiority trial. *PLoS ONE.* 2009;4(4).

**10.** Counsell SR, Callahan CM, Tu W, et al. Cost analysis of the geriatric resources for assessment and care of elders care management intervention. *Journal of the American Geriatrics Society.* 2009;57(8):1420-1426.

**11.** Dixon L, Goldberg R, Iannone V, et al. Use of a critical time intervention to promote continuity of care after psychiatric inpatient hospitalization. *Psychiatr Serv.* Apr 2009;60(4):451-458.

**12.** Fincher L, Ward C, Dawkins V, et al. Using telehealth to educate Parkinson's disease patients about complicated medication regimens. *Journal of gerontological nursing.* 2009;35(2):16-24.

**13.** Friedman B, Wamsley BR, Liebel DV, et al. Patient satisfaction, empowerment, and health and disability status effects of a disease management-health promotion nurse intervention among Medicare beneficiaries with disabilities. *The Gerontologist.* 2009;49(6):778-792.

**14.** Heidrich SM, Brown RL, Egan JJ, et al. An individualized representational intervention to improve symptom management (IRIS) in older breast cancer survivors: three pilot studies. *Oncology nursing forum.* 2009;36(3):E133-143.

**15.** Henrichs BM, Avidan MS, Murray DJ, et al. Performance of certified registered nurse anesthetists and anesthesiologists in a simulation-based skills assessment. *Anesthesia and Analgesia.* 2009;108(1):255-262.

**16.** Izquierdo R, Morin PC, Bratt K, et al. School-centered telemedicine for children with type 1 diabetes mellitus. *J Pediatr.* Sep 2009;155(3):374-379.

**17.** Jack BW, Chetty VK, Anthony D, et al. A reengineered hospital discharge program to decrease rehospitalization: a randomized trial. *Annals of Internal Medicine.* 2009;150(3):178-187.

**18.** Kenrik Duru O, Ettner SL, Vassar SD, et al. Cost evaluation of a coordinated care management intervention for dementia. *American Journal of Managed Care.* 2009;15(8):521-528.

**19.** Kim MT, Han HR, Song HJ, et al. A community-based, culturally tailored behavioral intervention for Korean Americans with type 2 diabetes. *Diabetes Educator.* 2009;35(6):986-994.

**20.** Krieger J, Takaro TK, Song L, et al. A randomized controlled trial of asthma self-management support comparing clinic-based nurses and in-home community health workers: The Seattleking county healthy homes II project. *Archives of Pediatrics and Adolescent Medicine.* 2009;163(2):141-149.

**21.** Leveille SG, Huang A, Tsai SB, et al. Health coaching via an internet portal for primary care patients with chronic conditions: A randomized controlled trial. *Medical care.* 2009;47(1):41-47.

**22.** Ma J, Berra K, Haskell WL, et al. Case management to reduce risk of cardiovascular disease in a county health care system. *Arch Intern Med.* 2009;169(21):1988-1995.

**23.** McCarrier KP, Ralston JD, Hirsch IB, et al. Web-based collaborative care for type 1 diabetes: A pilot randomized trial. *Diabetes Technology and Therapeutics.* 2009;11(4):211-217.

**24.** McCorkle R, Dowd M, Ercolano E, et al. Effects of a nursing intervention on quality of life outcomes in post-surgical women with gynecological cancers. *Psycho-oncology.* 2009;18(1):62-70.

**25.** Moreno L, Dale SB, Chen AY, et al. Costs to Medicare of the Informatics for Diabetes Education and Telemedicine (IDEATel) Home Telemedicine demonstration: Findings from an independent evaluation. *Diabetes care.* 2009;32(7):1202-1204.

**26.** Ockene JK, Reed GW, Reiff-Hekking S. Brief patient-centered clinician-delivered counseling for high-risk drinking: 4-year results. *Annals of Behavioral Medicine.* 2009;37(3):335-342.

**27.** Parry C, Min SJ, Chugh A, et al. Further application of the care transitions intervention: Results of a randomized controlled trial conducted in a fee-for-service setting. *Home Health Care Services Quarterly.* 2009;28(2-3):84-99.

**28.** Peikes D, Chen A, Schore J, et al. Effects of care coordination on hospitalization, quality of care, and health care expenditures among medicare beneficiaries 15 randomized trials. *JAMA - Journal of the American Medical Association.* 2009;301(6):603-618.

**29.** Powers BJ, Olsen MK, Oddone EZ, et al. The Effect of a Hypertension Self-Management Intervention on Diabetes and Cholesterol Control. *American Journal of Medicine.* 2009;122(7):639-646.

**30.** Resnick B, Cayo J, Galik E, et al. Implementation of the 6-week educational component in the Res-Care intervention: Process and outcomes. *Journal of continuing education in nursing.* 2009;40(8):353-360.

**31.** Resnick B, Gruber-Baldini AL, Zimmerman S, et al. Nursing home resident outcomes from the res-care intervention. *Journal of the American Geriatrics Society.* 2009;57(7):1156-1165.

**32.** Rollman BL, Herbeck Belnap B, LeMenager MS, et al. Telephone-delivered collaborative care for treating post-CABG depression: A randomized controlled trial. *JAMA - Journal of the American Medical Association.* 2009;302(19):2095-2103.

**33.** Schillinger D, Wang F, Handley M, et al. Effects of self-management support on structure, process, and outcomes among vulnerable patients with diabetes. *Diabetes care.* 2009;32(4):559-566.

**34.** Schnipper JL, Hamann C, Ndumele CD, et al. Effect of an electronic medication reconciliation application and process redesign on potential adverse drug events: a cluster-randomized trial. *Arch Intern Med.* Apr 27 2009;169(8):771-780.

**35.** Schnipper JL, Ndumele CD, Liang CL, et al. Effects of a subcutaneous insulin protocol, clinical education, and computerized order set on the quality of inpatient management of hyperglycemia: results of a clinical trial. J Hosp Med. Jan 2009;4(1):16-27.

**36.** Schraeder C, Fraser C, Clark I, et al. The effect of primary care management on lipids testing and LDL-C control of elderly patients with comorbidities. *Professional Case Management.* 2009;14(2):84-95.

**37.** Shea S, Weinstock RS, Teresi JA, et al. A Randomized Trial Comparing Telemedicine Case Management with Usual Care in Older, Ethnically Diverse, Medically Underserved Patients with Diabetes Mellitus: 5 Year Results of the IDEATel Study. *J Am Med Inform Assoc.* 2009;16(4):446-456.

**38.** Shelledy DC, Legrand TS, Gardner DD, et al. A randomized, controlled study to evaluate the role of an in-home asthma disease management program provided by respiratory therapists in improving outcomes and reducing the cost of care. *J Asthma.* Mar 2009;46(2):194-201.

**39.** Sikorskii A, Given CW, Given B, et al. Differential symptom reporting by mode of administration of the assessment: Automated voice response system versus a live telephone interview. *Medical care.* 2009;47(8):866-874.

**40.** Skelly AH, Carlson J, Leeman J, et al. Controlled trial of nursing interventions to improve health outcomes of older African American women with type 2 diabetes. *Nursing research.* 2009;58(6):410-418.

**41.** Song MK, Ward SE, Happ MB, et al. Randomized controlled trial of SPIRIT: An effective approach to preparing African-American dialysis patients and families for end of life. *Research in Nursing and Health.* 2009;32(3):260-273.

**42.** Swanson KM, Chen HT, Graham JC, et al. Resolution of depression and grief during the first year after miscarriage: A randomized controlled clinical trial of couples-focused interventions. *Journal of Women's Health.* 2009;18(8):1245-1257.

**43.** Tappen RM, Williams CL. Therapeutic conversation to improve mood in nursing home residents with Alzheimer's disease. *Research in Gerontological Nursing.* 2009;2(4):267-275.

**44.** Titler MG, Herr K, Brooks JM, et al. Translating research into practice intervention improves management of acute pain in older hip fracture patients. *Health services research.* 2009;44(1):264-287.

**45.** Wakefield BJ, Holman JE, Ray A, et al. Outcomes of a home telehealth intervention for patients with heart failure. *Journal of telemedicine and telecare.* 2009;15(1):46-50.

**46.** Weaver MR, Conover CJ, Proescholdbell RJ, et al. Cost effectiveness analysis of integrated care for people with HIV, chronic mental illness and substance abuse disorders. *Journal of Mental Health Policy and Economics.* 2009;12(1):33-46.

**47.** Wewers ME, Ferketich AK, Harness J, et al. Effectiveness of a nurse-managed, lay-led tobacco cessation intervention among Ohio Appalachian women. *Cancer Epidemiology Biomarkers and Prevention.* 2009;18(12):3451-3458.

**48.** Whittemore R, Melkus G, Wagner J, et al. Translating the Diabetes Prevention Program to Primary Care A Pilot Study. *Nursing research.* 2009;58(1):2-12.

**49.** Wolff JL, Rand-Giovannetti E, Palmer S, et al. Caregiving and chronic care: The guided care program for families and friends. *Journals of Gerontology - Series A Biological Sciences and Medical Sciences.* 2009;64(7):785-791.

**50.** Yehle KS, Sands LP, Rhynders PA, et al. The effect of shared medical visits on knowledge and self-care in patients with heart failure: A pilot study. *Heart and Lung: Journal of Acute and Critical Care.* 2009;38(1):25-33.

**51.** Zielinski DS, Eckenrode J, Olds DL. Nurse home visitation and the prevention of child maltreatment: Impact on the timing of official reports. *Development and Psychopathology.* 2009;21(2):441-453.

**52.** Barrett A, Piateck C, Korber S, et al. Lessons learned from a lateral violence and team-building intervention. *Nursing administration quarterly.* 2009;33(4):342-351.

**53.** Beck RA, Arizmendi A, Purnell C, et al. House calls for seniors: Building and sustaining a model of care for homebound seniors. *Journal of the American Geriatrics Society.* 2009;57(6):1103-1109.

**54.** Beckett CD, Kipnis G. Collaborative communication: Integrating SBAR to improve quality/patient safety outcomes. *Journal for r Healthcare Quality.* 2009;31(5):19-28.

**55.** Berg GD, Wadhwa S. Diabetes disease management results in hispanic medicaid patients. *Journal of Health Care for the Poor and Underserved.* 2009;20(2):432-443.

**56.** Berry SA, Doll MC, McKinley KE, et al. ProvenCare: quality improvement model for designing highly reliable care in cardiac surgery. *Quality & Safety in Health Care.* Oct 2009;18(5):360-368.

**57.** Buffum MD, Buccheri R, Trygstad L, et al. Behavioral management of auditory hallucinations. *Journal of Psychosocial Nursing and Mental Health Services.* 2009;47(9):32-40.

**58.** Chen C, McNeese-Smith D, Cowan M, et al. Evaluation of a nurse practitioner-led care management model in reducing inpatient drug utilization and cost. *Nurs Econ.* 2009;27(3):160-168.

**59.** Chiang CY, Sun FK. The effects of a walking program on older Chinese American immigrants with hypertension: A pretest and posttest quasi-experimental design: Populations at risk across the lifespan: Population studies. *Public Health Nursing.* 2009;26(3):240-248.

**60.** Cook PF, McCabe MM, Emiliozzi S, et al. Telephone nurse counseling improves HIV medication adherence: An effectiveness study. *Journal of the Association of Nurses in AIDS Care.* 2009;20(4):316-325.

**61.** Crossley L, Mueller L, Horstman P. Software-assisted spine registered nurse care coordination and patient triage-one organization's approach. *Journal of Neuroscience Nursing.* 2009;41(4):217-224.

**62.** Crowley AA, Kulikowich JM. Impact of training on child care health consultant knowledge and practice. *Pediatr Nurs.* 2009;35(2):93-100.

**63.** Curtis J, Lipke S, Effland S, et al. Effectiveness and safety of medication adjustments by nurse case managers to control hyperglycemia. *Diabetes Educator.* 2009;35(5):851-856.

**64.** Decker V, Spoelstra S, Miezo E, et al. A pilot study of an automated voice response system and nursing intervention to monitor adherence to oral chemotherapy agents. *Cancer nursing.* 2009;32(6):E20-E29.

**65.** DeLeskey K. The implementation of evidence-based practice for the prevention/management of post-operative nausea and vomiting. *International Journal of Evidence-Based Healthcare.* 2009;7(2):140-144.

**66.** Duane TM, Brown H, Borchers CT, et al. A central venous line protocol decreases bloodstream infections and length of stay in a trauma intensive care unit population. *Am Surg.* 2009;75(12):1166-1170.

**67.** DuBose JJ, Nomoto S, Higa L, et al. Nursing involvement improves compliance with tight blood glucose control in the trauma ICU: A prospective observational study. *Intensive and Critical Care Nursing.* 2009;25(2):101-107.

**68.** Focht A, Jones AE, Lowe TJ. Early goal-directed therapy: improving mortality and morbidity of sepsis in the emergency department. *Joint Commission Journal on Quality and Patient Safety* 2009;35(4):186-191.

**69.** Fritsch T, Kwak J, Grant S, et al. Impact of TimeSlips, a creative expression intervention program, on nursing home residents with dementia and their caregivers. *The Gerontologist.* 2009;49(1):117-127.

**70.** Gambino KK, Planavsky L, Gaudette H. Transition toward a nurse practitioner-managed clinic. *Journal of Cardiovascular Nursing.* 2009;24(2):132-139.

**71.** Gammack JK, Pulisetty S. Nursing education and improvement in oral care delivery in long-term care. *Journal of the American Medical Directors Association.* 2009;10(9):658-661.

**72.** Giordano R, Stichler JF. Improving suicide risk assessment in the emergency department. *J Emerg Nurs.* 2009;35(1):22-26.

**73.** Grando VT, Buckwalter KC, Maas ML, et al. A trial of a comprehensive nursing rehabilitation program for nursing home residents post-hospitalization. *Research in Gerontological Nursing.* 2009;2(1):12-19.

**74.** Hatler C, Mast D, Bedker D, et al. Implementing a rapid response team to decrease emergencies outside the ICU: one hospital's experience. *Medsurg Nurs.* 2009;18(2):84-90, 126.

**75.** Hendrix CC, Abernethy A, Sloane R, et al. A pilot study on the influence of an individualized and experiential training on cancer caregiver's self-efficacy in home care and symptom management. *Home Healthcare Nurse.* May 2009;27(5):271-278.

**76.** Herdman TH, Burgess LPA, Ebright PR, et al. Impact of continuous vigilance monitoring on nursing workflow. *Journal of Nursing Administration.* 2009;39(3):123-129.

**77.** Hix C, McKeon L, Walters S. Clinical nurse leader impact on clinical microsystems outcomes. *Journal of Nursing Administration.* 2009;39(2):71-76.

**78.** Horvath B, Norville R, Lee D, et al. Reducing central venous catheter-related bloodstream infections in children with cancer. *Oncology nursing forum.* 2009;36(2):232-238.

**79.** Jallo N, Bray K, Padden MP, et al. A nurse-driven quality improvement program to improve perinatal outcomes. *The Journal of Perinatal & Neonatal Nursing.* 2009;23(3):241-250.

**80.** Janson SL, Cooke M, McGrath KW, et al. Improving chronic care of type 2 diabetes using teams of interprofessional learners. *Academic Medicine.* Nov 2009;84(11):1540-1548.

**81.** Jarrett LA, Emmett M. Utilizing trauma nurse practitioners to decrease length of stay. *J Trauma Nurs.* 2009;16(2):68-72.

**82.** Kalina M, Tinkoff G, Gleason W, et al. A multidisciplinary approach to adverse drug events in pediatric trauma patients in an adult trauma center. *Pediatr Emerg Care.* 2009;25(7):444-446.

**83.** Kim JH, Menon U. Pre-and postintervention differences in acculturation, knowledge, beliefs, and stages of readiness for mammograms among Korean American women. *Oncology Nursing Forum.* 2009;36(2):E80-E92.

**84.** King AB, Wolfe GS. Evaluation of a diabetes specialist-guided primary care diabetes treatment program. *Journal of the American Academy of Nurse Practitioners.* 2009;21(1):24-30.

**85.** Kliger J, Blegen MA, Gootee D, et al. Empowering frontline nurses: A structured intervention enables nurses to improve medication administration accuracy. *Joint Commission Journal on Quality and Patient Safety.* 2009;35(12):604-612.

**86.** Klima C, Norr K, Vonderheid S, et al. Introduction of CenteringPregnancy in a Public Health Clinic. *Journal of Midwifery and Women's Health.* 2009;54(1):27-34.

**87.** Kressin NR, Nunn ME, Singh H, et al. Pediatric clinicians can help reduce rates of early childhood caries: Effects of a practice based intervention. *Medical Care.* 2009;47(11):1121-1128.

**88.** Lange J, Wallace M, Gerard S, et al. Effect of an acute care geriatric educational program on fall rates and nurse work satisfaction. *The Journal of Continuing Education in Nursing.* 2009;40(8):371-379.

**89.** Lavoie Smith EM, Bakitas MA, Homel P, et al. Using quality improvement methodology to improve neuropathic pain screening and assessment in patients with cancer. *Journal of Cancer Education.* 2009;24(2):135-140.

**90.** Ledwich LJ, Harrington TM, Ayoub WT, et al. Improved influenza and pneumococcal vaccination in rheumatology patients taking immunosuppressants using an electronic health record best practice alert. *Arthritis & Rheumatism: Arthritis Care & Research.* 2009;61(11):1505-1510.

91. Lemley KB, Marks B. Patient satisfaction of young adults in rural clinics: Policy implications for nurse practitioner practice. *Policy, Politics, & Nursing Practice.* 2009;10(2):143-152.

**92.** Lyman V. Successful heel pressure ulcer prevention program in a long-term care setting. *Journal of Wound, Ostomy and Continence Nursing.* 2009;36(6):616-621.

**93.** McTigue T, D'Andrea S, Doyle-Munoz J, et al. Efficacy of a skin tear education program: Improving the knowledge of nurses practicing in acute care settings. *Journal of Wound, Ostomy and Continence Nursing.* 2009;36(5):486-492.

**94.** Morris J, Neaton M. Continuous improvement process for a high-risk population: Catheter-directed thrombolytic infusions. *Journal of Vascular Nursing.* 2009;27(1):8-12.

**95.** Needleman J, Parkerton PH, Pearson ML, et al. Overall effect of TCAB on initial participating hospitals. *American Journal of Nursing.* 2009;109(11 SUPPL. TCAB):59-65.

**96.** Nuovo J. The impact of planned visits on patients with type 2 diabetes mellitus. *Clinical Medicine: Endocrinology and Diabetes.* 2009;2009(2):7-14.

**97.** Nyamathi A, Liu Y, Marfisee M, et al. Effects of a nurse-managed program on hepatitis A and B vaccine completion among homeless adults. *Nursing Research.* 2009;58(1):13-22.

**98.** O'Mahony S, McHenry J, Blank AE, et al. Preliminary report of the integration of a palliative care team into an intensive care unit. *Palliat Med.* Mar 2010;24(2):154-165.

**99.** Okon TR, Lutz PS, Liang H. Improved pain resolution in hospitalized patients through targeting of pain mismanagement as medical error. *Journal of Pain and Symptom Management.* 2009;37(6):1039-1049.

**100.** Ott KM, Haddock KS, Fox SE, et al. The Clinical Nurse Leader: Impact on practice outcomes in the Veterans Health Administration. *Nurs Econ.* 2009;27(6):363-370.

**101.** Ouslander JG, Perloe M, Givens JH, et al. Reducing potentially avoidable hospitalizations of nursing home residents: Results of a pilot quality improvement project. *Journal of the American Medical Directors Association.* 2009;10(9):644-652.

**102.** Padula CA, Yeaw E, Mistry S. A home-based nurse-coached inspiratory muscle training intervention in heart failure. *Applied Nursing Research.* 2009;22(1):18-25.

**103.** Pan Q, Meng YX, Gibbons GH, et al. Effectiveness of an intervention to improve the documentation required for diagnosis of metabolic syndrome in clinics serving African-American patients. *Quality in Primary Care.* 2009;17(3):191-196.

**104.** Pastel LC, Liu S, Homa K, et al. Improving care for patients with diabetes at a rural primary care clinic by empowering licensed nursing assistants with a flow sheet tool. *Clinical Diabetes.* 2009;27(3):115-118.

**105.** Pettker CM, Thung SF, Norwitz ER, et al. Impact of a comprehensive patient safety strategy on obstetric adverse events. *American Journal of Obstetrics and Gynecology.* 2009;200(5):492.e491-492.e498.

**106.** Pineda RG, Foss J, Richards L, et al. Breastfeeding changes for VLBW infants in the NICU following staff education. *Neonatal Network.* 2009;28(5):311-319.

**107.** Reid RJ, Fishcerman PA, Yu O, et al. Patient-centered medical home demonstration: A prospective, quasi-experimental, before and after evaluation. *American Journal of Managed Care.* 2009;15(9):e71-e87.

**108.** Resnick B, Galik E, Gruber-Baldini AL, et al. Implementing a restorative care philosophy of care in assisted living: Pilot testing of Res-Care-AL. *Journal of the American Academy of Nurse Practitioners.* Feb 2009;21(2):123-133.

**109.** Resnick B, Shaughnessy M, Galik E, et al. Pilot testing of the praisedd intervention among African American and low-income older adults. *Journal of Cardiovascular Nursing.* 2009;24(5):352-361.

**110.** Reynolds MAH. Postoperative pain management discharge teaching in a rural population. *Pain Management Nursing.* 2009;10(2):76-84.

**111.** Richardson L, McCauley E, Katon W. Collaborative care for adolescent depression: A pilot study. *General Hospital Psychiatry.* 2009;31(1):36-45.

**112.** Robertson B, Aycock DM, Darnell LA. Comparison of centering pregnancy to traditional care in Hispanic mothers. *Matern Child Health J.* May 2009;13(3):407-414.

**113.** Rodriguez KL, Burkitt KH, Sevick MA, et al. Assessing processes of care to promote timely initiation of antibiotic therapy for emergency department patients hospitalized for pneumonia. *Joint Commission Journal on Quality & Patient Safety.* Oct 2009;35(10):509-518.

**114.** Rodriguez-Paz JM, Mark LJ, Herzer KR, et al. A novel process for introducing a new intraoperative program: A multidisciplinary paradigm for mitigating hazards and improving patient safety. *Anesthesia and Analgesia.* 2009;108(1):202-210.

**115.** Romero A, Brown C, Richards F, et al. Reducing unnecessary medicare admissions: A six-state project. *Professional Case Management.* 2009;14(3):143-150.

**116.** Rosenthal T, Erbeznik M, Padilla T, et al. Observation and measurement of hand hygiene and patient identification improve compliance with patient safety practices. *Academic Medicine.* 2009;84(12):1705-1712.

**117.** Ryan M, Aloe K, Mason-Johnson J. Improving self-management and reducing hospital readmission in heart failure patients. *Clin Nurse Spec.* 2009;23(4):216-221.

**118.** Salamon L. Catheter-associated urinary tract infections: A nurse-sensitive indicator in an inpatient abilitation program. *Rehabil Nurs.* 2009;34(6):237-241.

**119.** Sax HC, Browne P, Mayewski RJ, et al. Can aviation-based team training elicit sustainable behavioral change? *Arch Surg.* 2009;144(12):1133-1137.

**120.** Sedlak CA, Doheny MO, Jones SL, et al. The clinical nurse specialist as change agent: Reducing employee injury and related costs. *Clin Nurse Spec.* 2009;23(6):309-313.

**121.** Specht J, Bossen A, Hall GR, et al. The effects of a dementia nurse care manager on improving caregiver outcomes outcomes. *American Journal of Alzheimer's Disease and Other Dementias.* 2009;24(3):193-207.

**122.** Spence R. SBIRT outcomes in houston: Final report on InSight, a hospital district-based program for patients at risk for alcohol or drug use problems. *Alcoholism: Clinical and Experimental Research.* 2009;33(8):1374-1381.

**123.** Spettell CM, Rawlins WS, Krakauer R, et al. A comprehensive case management program to improve palliative care. *Journal of Palliative Medicine.* 2009;12(9):827-832.

**124.** Tippet AW. Reducing the incidence of pressure ulcers in nursing home residents: A prospective 6-year evaluationi. *Ostomy Wound Management.* 2009;55(11):52-58.

**125.** Uplinger N, Turkel MC, Adams PC, et al. Development of a DiaBEATes Nurse Champion program. *Diabetes Educator.* 2009;35(5):713-726.

**126.** Voss AMB. Incidence and duration of urinary catheters in hospitalized older adults: Before and after implementing a geriatric protocol. *Journal of gerontological nursing.* 2009;35(6):35-40.

**127.** Williams K, Kukla M, Bond GR, et al. Can a nurse practitioner serve in the prescriber role on an assertive community treatment team? *American Journal of Psychiatric Rehabilitation.* 2009;12(3):205-224.

**128.** Woerner L, Espinosa J, Bourne S, et al. Project !EXITO!: success through diversity and universality for outcomes improvement among Hispanic home care patients. *Nursing Outlook.* 2009;57(5):266-273.

**129.** Wood D, Winterbauer N, Sloyer P, et al. A longitudinal study of a pediatric practice-based versus an agency-based model of care coordination for children and youth with special health care needs. *Maternal and Child Health Journal.* 2009;13(5):667-676.

**130.** Woodward JL. Effects of rounding on patient satisfaction and patient safety on a medical-surgical unit. *Clin Nurse Spec.* 2009;23(4):200-206.

**131.** Yeung A, Johnson DP, Trinh NH, et al. Feasibility and effectiveness of telepsychiatry services for Chinese immigrants in a nursing home. *Telemedicine and e-Health.* 2009;15(4):336-341.

**132.** Agosta LJ. Patient satisfaction with nurse practitioner-delivered primary healthcare services. *Journal of the American Academy of Nurse Practitioners.* 2009;21(11):610-617.

**133.** Aiken LH, Clarke SP, Sloane DM, et al. Effects of hospital care environment on patient mortality and nurse outcomes. *Journal of Nursing Administration.* 2009;39(7-8 SUPPL.):S45-S51.

**134.** Anderson KA, Taha RD, Hosier AF. Know thy residents: An exploration of long-term care nursing staff's knowledge. *Research in Gerontological Nursing.* 2009;2(1):69-76.

**135.** Apker J, Propp KM, Zabava Ford WS. Investigating the effect of nurse-team communication on nurse turnover: Relationships among communication processes, identification, and intent to leave. *Health Communication.* 2009;24(2):106-114.

**136.** Ayalon L, Arean P, Bornfeld H, et al. Long term care staff beliefs about evidence based practices for the management of dementia and agitation. *International Journal of Geriatric Psychiatry.* 2009;24(2):118-124.

**137.** Bacon CT, Hughes LC, Mark BA. Organizational influences on patient perceptions of symptom management. *Research in Nursing and Health.* 2009;32(3):321-334.

**138.** Bacon CT, Mark B. Organizational effects on patient satisfaction in hospital medical-surgical units. *Journal of Nursing Administration.* 2009;39(5):220-227.

**139.** Baier R, Butterfield K, Patry G, et al. Identifying star performers: The relationship between ambitious targets and nursing home quality improvement. *Journal of the American Geriatrics Society.* 2009;57(8):1498-1503.

**140.** Bair MJ, Matthias MS, Nyland KA, et al. Barriers and facilitators to chronic pain self-management: A qualitative study of primary care patients with comorbid musculoskeletal pain and depression. *Pain Medicine.* 2009;10(7):1280-1290.

**141.** Becker H, Stuifbergen A, Taxis C, et al. The use of goal attainment scaling to facilitate and assess individualized change in a wellness intervention for women with fibromyalgia syndrome. *Journal of holistic nursing : official journal of the American Holistic Nurses' Association.* 2009;27(4):232-240.

**142.** Benkert R, Hollie B, Nordstrom CK, et al. Trust, mistrust, racial identity and patient satisfaction in urban African American primary care patients of nurse practitioners. *Journal of Nursing Scholarship.* 2009;41(2):211-219.

**143.** Birmingham PK, Suresh S, Ambrosy A, et al. Parent-assisted or nurse-assisted epidural analgesia: Is this feasible in pediatric patients? *Paediatr Anaesth.* 2009;19(11):1084-1089.

**144.** Bonner AF, Castle NG, Men A, et al. Certified nursing assistants' perceptions of nursing home patient safety culture: Is there a relationship to clinical outcomes? *Journal of the American Medical Directors Association.* 2009;10(1):11-20.

**145.** Burge DM. Relationship between patient trust of nursing staff, postoperative pain, and discharge functional outcomes following a total knee arthroplasty. *Orthopaedic Nursing.* 2009;28(6):295-301.

**146.** Buswell LA, Ponte PR, Shulman LN. Provider practice models in ambulatory oncology practice: Analysis of productivity, revenue, and provider and patient satisfaction. *Journal of Oncology Practice.* 2009;5(4):188-192.

**147.** Campesino M. Exploring perceptions of cancer care delivery among older Mexican American adults. *Oncology Nursing Forum.* 2009;36(4):413-420.

**148.** Cartwright JC, Miller L, Volpin M. Hospice in assisted living: Promoting good quality care at end of life. *Gerontologist.* 2009;49(4):508-516.

**149.** Castle NG. Use of agency staff in nursing homes. *Research in Gerontological Nursing.* 2009;2(3):192-201.

**150.** Castle NG, Bost FS. Perfecting patient care: Integrating principles of process redesign in nursing homes. *Journal of Applied Gerontology.* 2009;28(2):256-276.

**151.** Castro A, Ruiz E. The effects of nurse practitioner cultural competence on Latina patient satisfaction. *Journal of the American Academy of Nurse Practitioners.* 2009;21(5):278-286.

**152.** Chapman SA, Spetz J, Seago JA, et al. How have mandated nurse staffing ratios affected hospitals? Perspectives from California hospital leaders. *J Healthc Manag.* Sep-Oct 2009;54(5):321-333; discussion 334-325.

**153.** Coleman EA, Coon SK, Lockhart K, et al. Effect of certification in oncology nursing on nursing-sensitive outcomes. *Clinical Journal of Oncology Nursing.* 2009;13(2):165-172.

**154.** Cricco-Lizza R. Rooting for the breast: Breastfeeding promotion in the NICU. *MCN The American Journal of Maternal/Child Nursing.* 2009;34(6):356-364.

**155.** Dellon ES, Lippmann QK, Galanko JA, et al. Effect of GI endoscopy nurse experience on screening colonoscopy outcomes. *Gastrointestinal Endoscopy.* 2009;70(2):331-343.

**156.** Everett CM, Schumacher JR, Wright A, et al. Physician assistants and nurse practitioners as a usual source of care. *J Rural Health.* 2009;25(4):407-414.

**157.** Flanagan J. Postoperative telephone calls: Timing Is everything. *AORN Journal.* 2009;90(1):41-51.

**158.** Gilbert DA, Hayes E. Communication and outcomes of visits between older patients and nurse practitioners. *Nursing Research.* 2009;58(4):283-293.

**159.** Gurses AP, Carayon P, Wall M. Impact of performance obstacles on intensive care nurses' workload, perceived quality and safety of care, and quality of working life. *Health Services Research.* Apr 2009;44(2 Pt 1):422-443.

**160.** Guzik A, Menzel NN, Fitzpatrick J, et al. Patient satisfaction with nurse practitioner and physician services in the occupational health setting. *AAOHN Journal.* 2009;57(5):191-197.

**161.** Hart L, Mirabella J. A patient survey on emergency department use of nurse practitioners. *Adv.* 2009;31(3):228-235.

**162.** Hatler C, Buckwald L, Salas-Allison Z, et al. Evaluating central venous catheter care in a pediatric intensive care unit. *American Journal of Critical Care.* 2009;18(6):514-520.

**163.** Hazard CJ, Callister LC, Birkhead FA, et al. Hispanic Labor Friends initiative: Supporting vulnerable women. *MCN The American Journal of Maternal/Child Nursing.* 2009;34(2):115-121.

**164.** Hill-Kayser CE, Vachani C, Hampshire MK, et al. An internet tool for creation of cancer survivorship care plans for survivors and health care providers: design, implementation, use and user satisfaction. *J Med Internet Res.* 2009;11(3).

**165.** Hughes LC, Chang Y, Mark BA. Quality and strength of patient safety climate on medical-surgical units. *Health Care Management Review.* 2009;34(1):19-28.

**166.** Hunter LP, Weber CE, Morreale AP, et al. Patient satisfaction with retail health clinic care. *Journal of the American Academy of Nurse Practitioners.* 2009;21(10):565-570.

**167.** Jackson RS, Walker RJ, Varvares MA, et al. Postoperative monitoring in free tissue transfer patients: Effective use of nursing and resident staff. *Otolaryngology - Head and Neck Surgery.* 2009;141(5):621-625.

**168.** Kaempf JW, Tomlinson MW, Campbell B, et al. Counseling pregnant women who may deliver extremely premature infants: Medical care guidelines, family choices, and neonatal outcomes. *Pediatrics.* 2009;123(6):1509-1515.

**169.** Kain ZN, MacLaren JE, Hammell C, et al. Healthcare provider-child-parent communication in the preoperative surgical setting. *Paediatr Anaesth.* 2009;19(4):376-384.

**170.** Kalisch BJ. Nurse and nurse assistant perceptions of missed nursing care: What does it tell us about teamwork? *Journal of Nursing Administration.* 2009;39(11):485-493.

**171.** Kalisch BJ, Lee H. Nursing teamwork, staff characteristics, work schedules, and staffing. *Health care management review.* 2009;34(4):323-333.

**172.** Kane JM, Preze E. Nurses perceptions of subspecialization in pediatric cardiac intensive care unit: Quality and patient safety implications. *Journal of Nursing Care Quality.* 2009;24(4):354-361.

**173.** Kendall-Gallagher D, Blegen MA. Competence and certification of registered nurses and safety of patients in intensive care units. *American Journal of Critical Care.* 2009;18(2):106-113.

**174.** Kim H, Capezuti E, Boltz M, et al. The nursing practice environment and nurse-perceived quality of geriatric care in hospitals. *Western Journal of Nursing Research.* 2009;31(4):480-495.

**175.** Kim H, Harrington C, Greene WH. Registered nurse staffing mix and quality of care in nursing homes: A longitudinal analysis. *Gerontologist.* Feb 2009;49(1):81-90.

**176.** Kim H, Kovner C, Harrington C, et al. A panel data analysis of the relationships of nursing home staffing levels and standards to regulatory deficiencies. *The Journals of Gerontology: Series B: Psychological Sciences and Social Sciences.* 2009;64B(2):269-278.

**177.** Kutney-Lee A, Lake ET, Aiken LH. Development of the hospital nurse surveillance capacity profile. *Research in Nursing & Health.* 2009;32(2):217-228.

**178.** Kutney-Lee A, McHugh MD, Sloane DM, et al. Nursing: a key to patient satisfaction. *Health Affairs.* 2009;28(4):w669-677.

**179.** Leekha S, Thomas KG, Chaudhry R, et al. Patient preferences for and satisfaction with methods of communicating test results in a primary care practice. *Joint Commission Journal on Quality & Patient Safety.* 2009;35(10):497-501.

**180.** Lester P, Stefanacci RG, Chen DG. Nursing home procedures on transitions of care. *Journal of the American Medical Directors Association.* 2009;10(9):634-638.

**181.** Lopez RP. Decision-making for acutely ill nursing home residents: Nurses in the middle. *Journal of Advanced Nursing.* 2009;65(5):1001-1009.

**182.** Lucero RJ, Lake ET, Aiken LH. Variations in nursing care quality across hospitals. *Journal of Advanced Nursing.* 2009;65(11):2299-2310.

**183.** Magnan MA, Maklebust J. Braden scale risk assessments and pressure ulcer prevention planning: What's the connection? *Journal of Wound, Ostomy and Continence Nursing.* 2009;36(6):622-634.

**184.** Manojlovich M, Antonakos CL, Ronis DL. Intensive care units, communication between nurses and physicians, and patients' outcomes. *American Journal of Critical Care.* 2009;18(1):21-30.

**185.** Marsteller JA, Burton L, Mader SL, et al. Health care provider evaluation of a substitutive model of Hospital at Home. *Medical care.* 2009;47(9):979-985.

**186.** Mazzocco K, Petitti DB, Fong KT, et al. Surgical team behaviors and patient outcomes. *Am J Surg.* May 2009;197(5):678-685.

**187.** McCue JD, Beck A, Smothers K. Quality toolbox: clinical pathways can improve core measure scores. *J Healthc Qual.* Jan-Feb 2009;31(1):43-50.

**188.** Menon S, Valentini RP, Kapur G, et al. Effectiveness of a multidisciplinary clinic in managing children with chronic kidney disease. *Clinical Journal of the American Society of Nephrology.* 2009;4(7):1170-1175.

**189.** Meyerson KL, Kline KS. Qualitative analysis of a mutual goal-setting intervention in participants with heart failure. *Heart and Lung: Journal of Acute and Critical Care.* 2009;38(1):1-9.

**190.** Mukamel DB, Cai S, Temkin-Greener H. Cost implications of organizing nursing home workforce in teams. *Health Services Research.* 2009;44(4):1309-1325.

**191.** Myers JS, Grigsby J, Teel CS, et al. Nurses' assessment of rehabilitation potential and prediction of functional status at discharge from inpatient rehabilitation. *International Journal of Rehabilitation Research.* 2009;32(3):264-266.

**192.** Naylor MD, Feldman PH, Keating S, et al. Translating research into practice: Transitional care for older adults. *J Eval Clin Pract.* 2009;15(6):1164-1170.

**193.** Needleman J, Minnick AF. Anesthesia provider model, hospital resources, and maternal outcomes. *Health Services Research.* 2009;44(2P1):464-482.

**194.** Nelson KA, Freiner D, Garbutt J, et al. Acute asthma management by a pediatric after-hours call center. *Telemedicine and e-Health.* 2009;15(6):538-545.

**195.** Noble LM, Noble A, Hand IL. Cultural competence of healthcare professionals caring for breastfeeding mothers in urban areas. *Breastfeeding Medicine.* 2009;4(4):221-224.

**196.** Norris J, Howell E, Wydeven M, et al. Working with teen moms and babies at risk: The power of partnering. *The American Journal of Maternal/Child Nursing.* 2009;34(5):308-315.

**197.** Nowalk MP, Tabbarah M, Hart JA, et al. Office manager and nurse perspectives on facilitators of adult immunization. *American Journal of Managed Care.* 2009;15(10):755-760.

**198.** Palmieri FM, DePeri ER, Mincey BA, et al. Comprehensive diagnostic program for medically underserved women with abnormal breast screening evaluations in an urban population. *Mayo Clinic Proceedings.* 2009;84(4):317-322.

**199.** Park J, Stearns SC. Effects of state minimum staffing standards on nursing home staffing and quality of care. *Health Services Research.* 2009;44(1):56-78.

**200.** Putman-Casdorph H, Drenning C, Richards S, et al. Advance directives: evaluation of nurses' knowledge, attitude, confidence, and experience. *Journal of Nursing Care Quality.* 2009;24(3):250-256.

**201.** Pytel C, Fielden NM, Meyer KH, et al. Nurse-patient/visitor communication in the emergency department. *J Emerg Nurs.* 2009;35(5):406-411.

**202.** Radwin LE, Cabral HJ, Wilkes G. Relationships between patient-centered cancer nursing interventions and desired health outcomes in the context of the health care system. *Research in Nursing & Health.* 2009;32(1):4-17.

**203.** Raza T, Joshi M, Schapira RM, et al. Pulmonary telemedicine-A model to access the subspecialist services in underserved rural areas. *Int J Med Inf.* 2009;78(1):53-59.

**204.** Read M, Small P, Donaher K, et al. Evaluating parent satisfaction of school nursing services. *Journal of School Nursing.* 2009;25(3):205-213.

**205.** Rosati RJ, Marren JM, Davin DM, et al. The linkage between employee and patient satisfaction in home healthcare. *J Healthc Qual.* 2009;31(2):44-53.

**206.** Roszell S, Jones CB, Lynn MR. Call bell requests, call bell response time, and patient satisfaction. *Journal of Nursing Care Quality.* 2009;24(1):69-75.

**207.** Samuels JG, Fetzer S. Pain management documentation quality as a reflection of nurses' clinical judgment. *Journal of Nursing Care Quality.* 2009;24(3):223-231.

**208.** Sennour Y, Counsell SR, Jones J, et al. Development and implementation of a proactive geriatrics consultation model in collaboration with hospitalists. *Journal of the American Geriatrics Society.* 2009;57(11):2139-2145.

**209.** Serber ER, Finch NJ, Leman RB, et al. Disparities in preferences for receiving support and education among patients with implantable cardioverter defibrillators. *Pacing and Clinical Electrophysiology.* 2009;32(3):383-390.

**210.** Sherwood KL, Price RR, White TW, et al. A role in trauma care for advanced practice clinicians. *Journal of the American Academy of Physician Assistants.* 2009;22(6):33-36, 41.

**211.** Stanton M, Dunkin J. A review of case management functions related to transitions of care at a rural nurse managed clinic. *Professional Case Management.* 2009;14(6):321-327.

**212.** Sturdivant L, Warren NA. Perceived met and unmet needs of family members of patients in the pediatric intensive care unit. *Crit Care Nurs Q.* 2009;32(2):149-158.

**213.** Sturm BA. Articulating the value of psychiatric community health nurse interventions: a secondary analysis. *Journal of the New York State Nurses Association.* 2009;40(1):17-23.

**214.** Suhrie EM, Hanlon JT, Jaffe EJ, et al. Impact of a geriatric nursing home palliative care service on unnecessary medication prescribing. *American Journal Geriatric Pharmacotherapy.* 2009;7(1):20-25.

**215.** Swanson MW, McGwin Jr G, Elliott AF, et al. Association between the nursing home minimum data set for vision and vision-targeted health-related quality of life in nursing home residents as assessed by certified nursing assistants. *Journal of Optometry.* 2009;2(3):148-154.

**216.** Tanios MA, de Wit M, Epstein SK, et al. Perceived barriers to the use of sedation protocols and daily sedation interruption: A multidisciplinary survey. *Journal of Critical Care.* 2009;24(1):66-73.

**217.** Temkin-Greener H, Cai S, Katz P, et al. Daily practice teams in nursing homes: Evidence from New York State. *Gerontologist.* 2009;49(1):68-80.

**218.** Thornlow DK, Merwin E. Managing to improve quality: The relationship between accreditation standards, safety practices, and patient outcomes. *Health care management review.* 2009;34(3):262-272.

**219.** Tolomeo C. Group Asthma Education in a Pediatric Inpatient Setting. *Journal of Pediatric Nursing.* 2009;24(6):468-473.

**220.** Tschannen D, Kalisch BJ. The effect of variations in nurse staffing on patient length of stay in the acute care setting. *Western Journal of Nursing Research.* 2009;31(2):153-170.

**221.** Tzeng HM, Yin CY. Relationship between call light use and response time and inpatient falls in acute care settings. *Journal of Clinical Nursing.* 2009;18(23):3333-3341.

**222.** Warner DS. Feasibility of tobacco interventions in anesthesiology practices: A pilot study. *Anesthesiology.* 2009;110(6):1223-1228.

**223.** Watts SA, Gee J, O'Day ME, et al. Nurse practitioner-led multidisciplinary teams to improve chronic illness care: the unique strengths of nurse practitioners applied to shared medical appointments/group visits. *Journal of the American Academy of Nurse Practitioners.* 2009;21(3):167-172.

**224.** Weiss ME, Lokken L. Predictors and outcomes of postpartum mothers' perceptions of readiness for discharge after birth. *Journal of Obstetric, Gynecologic, and Neonatal Nursing.* 2009;38(4):406-417.

**225.** Westphal DM, McKee SA. End-of-life decision making in the intensive care unit: Physician and nurse perspectives. *American Journal of Medical Quality.* 2009;24(3):222-228.

**226.** Woodiwiss AJ, Molebatsi N, Maseko MJ, et al. Nurse-recorded auscultatory blood pressure at a single visit predicts target organ changes as well as ambulatory blood pressure. *Journal of Hypertension.* 2009;27(2):287-297.

**227.** Yee PL, Edwards ML, Dixon J, et al. Implementation of patient safety rounds in a children's hospital. *Nursing Administration Quarterly.* 2009;33(1):48-53.

**228.** Young S. Professional relationships and power dynamics between urban community-based nurses and social work case managers: Advocacy in action. *Professional Case Management.* 2009;14(6):312-320.