Supplemental Digital Content Item 2: Table of Evidence – 2004 Studies

| **2004** | | | | | |
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| **Randomized Controlled Trials (N=34)** | | | | | |
| **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. Bailey Jr DE, Mishel MH, Belyea M, et al. Uncertainty intervention for watchful waiting in prostate cancer. *Cancer Nursing.* 2004;27(5):339-346.[1](#_ENREF_1) | To test the effectiveness of the watchful waiting intervention (WWI) in helping men with prostate cancer cognitively reframe and manage the uncertainty of watchful waiting. | A convenience sample of men with prostate cancer (N=39) were recruited from the urology practices of three physicians at a central North Carolina hospital. Subjects were recruited into the study if they had been in watchful waiting from 1 to 124 months. | Quantitative  Longitudinal  Experimental Design  Pre-Post | Psychointervention delivered through five weekly telephone calls from a male nurse interventionist (NI) to help men reframe and manage the uncertainty when selecting watchful waiting for prostate cancer treatment. Using the information attained during the calls, the NI delivered interventions designed to help the patient reframe uncertainty and find ways to incorporate uncertainty into his life structure. The subjects’ concerns were addressed through individualized interventions, but the intervenor followed a basic protocol. Interventions included providing information about the number of men who had chosen watchful waiting, suggesting empowering activities, encouraging men to maintain their watchful waiting approach if current treatments were considered undesirable, and urging men concerned with changes in their prostate-specific antigen (PSA) values to chart this information while reminding them that small fluctuations were probably not worrisome. Control subjects had access to naturally occurring sources of support. Outcomes were measured using The Growth Through Uncertainty Scale (GTUS), the Profile of Mood States Scale-Short Form (POMS-SF), Cantril’s Ladder, and Rosembaum’s Self Control Schedule (SCS). | 2,4 |
| **Results** | | | **Conclusion** | | |
| Intervention subjects were significantly more likely than controls to view their lives in a new light (p=0.02) and experience a decrease in confusion (p=0.04) following the intervention. Intervention subjects reported greater improvement in their quality of life than did controls (p=0.01) and believed their quality of life in the future would be better than did controls (p=0.01). | | | The study found that the intervention led to improved quality of life and an expectation of improved quality six months into the future. The researchers suggest that men receiving the intervention may have perceived improved quality of life because they were felt able to deal with their disease-related concerns. They felt that the nurse interventionist validated their perception of the situation and their sense of personal good health. Watchful waiting intervention offers older men diagnosed with prostate cancer an alternative to aggressive treatment and the accompanying side effects. The study’s findings provide an understanding of concerns related to not treating cancer, as well as strategies to manage those concerns. | | |

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| 2. Barsevick AM, Dudley W, Beck S, et al. A Randomized Clinical Trial of Energy Conservation for Patients with Cancer-Related Fatigue. Cancer. 2004;100(6):1302-1310.2 | To evaluate the efficacy of energy conservation and activity management (ECAM) for fatigue reduction and maintenance of functional performance in adults with cancer who are undergoing treatment. | The study was conducted at two clinical sites: a university health science center and a comprehensive cancer center. Individuals who were beginning high-dose chemotherapy (CTX), radiotherapy (RT), or concurrent therapy for cancer were randomized to receive either the ECAM intervention (N=200) or the control intervention (N=196), which involved the distribution of information regarding a healthy diet. | Quantitative  Longitudinal Randomized Clinical Trial | Participants in each group (ECAM or control intervention) participated in 3 telephone sessions with an oncology nurse during the first 5 weeks of treatment. The intervention guided the participant through 3 stages of information processing proposed in the tenets of the Common Sense Model. Information was provided to aid in the formation of an accurate representation of the symptoms of fatigue, guide the formulation and implementation of a plan for energy conservation, and appraise the effectiveness of symptom-management efforts. An interactive approach for intervention delivery was used that built on the individual’s existing knowledge and personal responses to symptoms. A specific protocol and script were used, but were customized by a trained research nurse as needed. Participant “homework” included: 1) completion of a journal to monitor fatigue, activities and symptoms, 2) creation of an energy-conservation plan and 3) evaluation and revision of the plan. The study’s outcomes included perception of fatigue and functional performance. Measures of fatigue included: The Short Form of the Profile of Mood States (POMS-SF); The Schwartz Cancer Fatigue Scale (SCFS) and the General Fatigue Scale (GFS). Functional performance was measured using the Functional Performance Inventory  (FPI). | 2,3 |
| **Results** | | | **Conclusion** | | |
| Findings suggest that the ECAM intervention influenced behavior as expected in that individuals who were taught energy conservation used these strategies more frequently than did individuals who were not taught ECAM. The ECAM group also experienced a greater decrease in fatigue over time compared with the control group. The intervention was not associated with changes in overall functional performance. | | | Participants receiving the ECAM intervention did receive a significant (although modest) benefit from the intervention. Researchers concluded that more research was needed to understand symptom clusters or combinations associated with negative outcomes and to examine multifaceted strategies for symptom management. | | |

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| 3. Buchanan LM, El-Banna M, White A, et al. An exploratory study of multicomponent treatment intervention for tobacco dependency. Journal of Nursing Scholarship. 2004;36(4):324-330.3 | To conduct an exploratory study of two interventions to help smokers abstain over a period of 3 months. The specific aims were to describe the outcomes, test feasibility of the study design, and evaluate effect size. | Adult patients (19 or older) (N=42) from six ambulatory clinics within a large Midwestern U.S. who received multicomponent treatment intervention (MTI) or standard care (SC) comprised the sample. All participants smoked at least 10 cigarettes per day. | Quantitative  Longitudinal  Randomized Experimental Design | The SC group received 30 minutes of on-site contact form a certified smoking cessation counselor. In addition they received 6 weeks of nicotine replacement therapy (NRT), a pamphlet and CD-ROM and were expected to develop a plan on their own to stop smoking. (MTI) group received the protocol from an intervention nurse (an APRN), who provided an additional 2-hour on-site visit and 4 hours of telephone calls. The MTI consisted of support, counseling, education, behavioral therapy, and medication instruction. Pharmacologic therapy consisted of the same 6 weeks NRT as SC but was enhanced in the MTI group by more education and feedback regarding use of NRT for withdrawal symptoms, reinforcement to continue NRT for a minimum of 6 weeks, and education on combination NRT for breakthrough symptoms. Nicotine dependency was measured using the Fagerstrom Test for Nicotine Dependency (FTND). Behavior outcomes included quite rate, self-efficacy, and motivation. Finally psychosocial outcomes (depression) was measured with the Center for Epidemiological Studies (CES-D) Scale. | 3 |
| **Results** | | | **Conclusion** | | |
| Statistically significant differences were found between groups over time for self-efficacy and positive to negative behavior ratio. MTI participants were more likely to use NRT. MTI participants had higher values of self-efficacy (f=2.83, p<0.04). Barriers to quitting were relapse, stress, weight gain, lack of support, and depression that were more frequent in the SC group. For effect size (0.25), probability level (.05), and power (.80), a sample size of 140 patients was calculated. The MTI group had higher quit rates, more NRT, higher self-efficacy, and more positive behavioral interactions. | | | The study indicated that change in health outcomes (such as becoming a non-smoker) may result from positive interactions with support partners, although literature in this area is not conclusive. The study also indicated that there was a higher probability for successful change when the results of partner interactions are positive. Results showed that the MTI group had significantly more favorable outcomes than did the control group in regard to self-efficacy and the positive-to-negative ration of partner interactions. The researchers suggest that future work might link these changes to a long-term behavior change of lifetime cessation. Future hypothesis-testing studies with large samples using this study’s variables are warranted. | | |

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| 4. Dalton JA, Keefe FJ, Carlson J, et al. Tailoring cognitive-behavioral treatment for cancer pain. Pain Management Nursing. 2004;5(1):3-18.4 | To determine whether a profile-tailored cognitive behavioral training (CBT) treatment program matched to a diagnostic profile derived from the Behavior Pain Profile was more effective than either standard CBT or usual care in changing outcomes for patients with cancer-related pain. | Patients (N=131) enrolled in the study were men and  women who had an elevated score on at least one of the biobehavioral pain profile (BPP) scale and who were receiving treatment for cancer pain at three cancer treatment centers and one hospital in three Southeastern states. | Quantitative  Longitudinal  3 Group Experimental, Repeated Measures Design | After randomized treatment group assignment, patients completed pre-intervention data questionnaires and provided information about where to send subject compensation. Patients in the CBT treatment groups were treated by registered nurses trained to implement the specific treatment, standard or profile-tailored, to which patients were assigned. CBT was delivered in 5 one-hour treatment sessions, lasting approximately 50 minutes each. CBT patients completed homework and a pain diary; usual-care patients completed only the diary. Given that some patients were on a once-a-month chemotherapy schedule, and given the desire to reduce the number of clinic visits patients were required to make in order to participate, patients were able to receive three out of five treatment sessions over the phone, with therapy materials mailed prior to the session. Patients in all three treatment groups (the two CBT groups and patients receiving usual care) continued to receive their prescribed pain medication. Symptom Severity and the patient’s ability to care for themselves were measured using the Karnofsky Performance Status (KPS) Scale. Pain symptoms were measured using The Brief Pain Inventory (BPI). Mood states were measured using the short form Profile of Mood States (POMS). Quality of Life was measured suing the Medical Outcomes Study Short-Form Health Survey (SF-12). Activities of daily living were measured using the Katz Index of Independence. | 3,4 |
| **Results** | | | **Conclusion** | | |
| Profile-tailored CBT patients experienced substantial improvements from baseline to immediately post- and one-month post-intervention. The degree of improvement decreased by the six-month post-intervention measurement. The standard CBT and usual care treatment groups showed little change from baseline to the immediate post- and one-month post-intervention. Standard CBT patients showed substantial improvement at six-month post- intervention, while the usual care group showed little change at six-month post-intervention. | | | It is encouraging that outcomes which showed improvement included different measures of pain intensity and of activity and function. The fact that less improvement in quality of life was reported needs further investigation. In general, short- and long-term outcomes showed change in patient report of pain intensity and physiologic responses, whereas changes in intermediate-term effects were found with function, including sleep. While the Biobehavioral Pain Profile shows promise for guiding CBT treatment choices for patients with pain related to cancer, the results of the study also suggest avenues for future research. More research is needed to determine whether different profile-tailored treatment programs from those used in this trial are equally effective for specific patient profiles. | | |

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| 5. DeBusk RF, Miller NH, Parker KM, et al. Care management for low-risk patients with heart failure: A randomized, controlled trial. *Annals of Internal Medicine.* 2004;141(8):606-613.[5](#_ENREF_5) | To determine whether a physician directed, telephone-mediated nurse care management program for heart failure reduced the rate of rehospitalization for heart failure and for all causes over a 1-year period. | The study sample consisted of patients (N=462) with heart failure and was set within five hospitals in one health maintenance organization between the years 1998 and 2000. | Quantitative  Longitudinal | Hospital charts were reviewed to screen for potential participants in the study who met inclusion criteria. In addition to usual care, patients in the intervention group received a physician-directed, nurse-managed home-based program for heart failure. The standardized, telephone-mediated intervention included the following elements: initial educational session, baseline telephone counseling session, nurse-initiated follow-up telephone contacts, pharmacologic management, and nurse-initiated communication with physicians. The initial one-hour session occurred in the patient’s medical center. Patients received printed educational materials and viewed a videotape portraying the treatment process. Within one week of randomization, two nurse care managers provided a 45-minute baseline telephone counseling session. Subsequent contacts were tailored to the patients’ individual needs. Follow-up telephone contacts were scheduled at weekly intervals for 6 weeks, biweekly for 8 weeks, monthly for 3 months, bimonthly for 6 months and as needed. Nurse care managers spent an average of 9 hours per patient coordinating the treatment plan with patients and physicians (including pharmacologic therapy) during the first year. The primary outcome of the study was the time to first rehospitalization for heart failure for any cause. | 3,5 |
| **Results** | | | **Conclusion** | | |
| At 1 year, half of the patients had been rehospitalized at least once and 11% had died. Only one third of rehospitalizations were for heart failure. The rate of first rehospitalization for heart failure was similar in both groups (proportional hazard, 0,85 [95% CI, 0.46 to 1.57]), The rate of all-cause rehospitalization vi/as similar (proportional hazard, 0.98 [CI, 0,76 to 1,27]). No statistically significant differences between usual care alone and usual are supplemented with nurse care management in the rate of rehospitalizations or in the combined outcome of rehospitalization, emergency department visit, or death. | | | This study demonstrated no statistically significant differences between the effects of usual care alone and usual care supplemented with nurse care management with regards to rehospitalization, emergency department visits, or death. The researchers note that other nurse care management studies have shown large differences in rehospitalization rates and suggest that their findings may be attributed to the sociodemographic and medical attributes of the study sample and the scope and quality of the health care services in which their supplemental nurse care management was embedded. The authors conclude that the benefits of specialized health care programs for heart failure that target the elderly, the underserved, and those with advanced heart failure may not be generalizable to low-risk patients, especially in medical settings that promote systematic care for heart failure. | | |

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| 6. Dougherty CM, Lewis FM, Thompson EA, et al. Short-term efficacy of a telephone intervention by expert nurses after an implantable cardioverter defibrillator. *PACE - Pacing and Clinical Electrophysiology.* 2004;27(12):1594-160.[6](#_ENREF_6) | To reports the short-term efficacy of a structured weekly educational telephone intervention (8 weeks) delivered by expert cardiovascular nurses to recipients of an implantable cardioverter defibrillator (ICD). | Study participants (N=168) included individuals who had experienced a first sudden cardiac arrest (SCA) or life-threatening ventricular arrhythmia requiring ICD implantation based on established guidelines. The study was conducted in five medical centers. | Quantitative  Longitudinal | The intervention consisted of two key components: 1. Structured information via booklet and 2. Nursing telephone support. Structured weekly educational telephone intervention (8 weeks) delivered by expert cardiovascular nurses to recipients of an ICD. The Nursing telephone support (NTS) protocol was a telephone intervention (15-20min) delivered over 8 weeks subsequent to ICD implantation. Scripted calls included element such as: behavioral strategies and goal setting. The purposes of the NTS intervention were to: 1) teach specific knowledge and behavioral skills needed to manage ICD recovery, 2) enhance self-confidence (self-efficacy) in one’s ability to deal with illness demands, and 3) reduce emotional arousal and anxiety. Outcomes measures include: 1) Physical functioning measured by The Patient concerns Assessment (PCA); 2) Short Form Health Survey (SF-12) and interrogation reports regarding ICD functioning. Psychological adjustment was measured by the State-Trait Anxiety Inventory (STAI) and Center for Epidemiolgic Studies Depression Scale (CES-D). SCA knowledge was measured by The sudden Cardiac Arrest Knowledge Assessment. Healthcare use was monitored via self-report of the number of ER and clinic visits. | 3,5 |
| **Results** | | | **Conclusion** | | |
| The intervention group, as compared to the control group, significantly reduced mean Patient Concerns Assessment symptoms at 1 month, and reduced state anxiety, and enhanced knowledge at 3 months. There were no statistically significant differences between groups on the measures of physical health or mental health scores at 1 or 3 months. At 1 and 3 months, there were no statistically significant differences between the two groups on depression scores. There were no statistically significant differences between the groups at 1 or 3 months with respect to health care use. | | | A short-term telephone intervention delivered within the first 8 weeks after an ICD by expert cardiovascular nurses diminished reported symptoms and anxiety and enhanced knowledge related to the ICD. The intervention did not significantly influence short-term health care use. | | |

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| 7. Feldman PH, Peng TR, Murtaugh CM, et al. A randomized intervention to improve heart failure outcomes in community-based home health care. Home health care services quarterly. 2004;23(1):1-23.7 | To examine the effects of a home health intervention designed to standardize nursing care, strengthen nurses' support for patient self-management and yield better chronic heart failure patient outcomes. | Participants were Medicare congestive heart failure patients (N=371) served by nurses (N=205)  in a large urban home health care agency. | Quantitative  Longitudinal | The intervention consisted of an evidence-based nursing protocol, patient self-care guide, and training to improve nurses’ teaching and support skills. Outcome measures included home care use, physician and emergency department (ED) use, hospital admission, condition-specific quality of life, satisfaction with home care services and survival at 90 days. The Health Outcomes, Management and Evaluation (HOME) Plan Initiative intervention consisted of: 1) a formal nursing protocol, 2) a consumer-oriented patient self-care guide, and 3) interactive practitioner training designed to improve nurses’ patient teaching and support skills. | 3,5 |
| **Results** | | | **Conclusion** | | |
| The intervention was associated with a marginally significant reduction in the volume of skilled nursing visits (p=0.074), and a reduction variation in the typical number of visits provided (p<0.05), without a significant increase in physician or ED use or patient mortality. Hypothesized improvement in other outcomes did not occur. The reduction of 3.4 nursing visits represented a 17% reduction in the number of visits within 90 days of admission. This translates into savings of approximately $205 per patient in 1996 dollars (visit and training costs of $1,144 for intervention patients compared to $1,349 for controls). | | | Although the intervention was associated with reductions in skilled nursing visits and did not have any “spill-over” negative impacts (i.e., a greater number of Medicare-reimbursed physician visits or increased likelihood of ED use), the authors suggest that it was not a resounding success. The impact on ED use, while in the hypothesized negative direction, was not statistically significant. Its marginally significant impact on hospitalization is attributable principally to reduced hospitalization among patients originally admitted to home care from the hospital, not the community. The intervention did not, as hypothesized, yield detectable improvements in condition-specific quality of life or yield measurable improvement in patient satisfaction. This study demonstrated that evidence-based guidelines introduced through in-service training can affect the aspect of home care that nurses most easily control: the number of visits provided to a given patient, and the variation in the number of visits provided across similar patients. Thus, the authors conclude, it is possible to standardize nursing care and achieve meaningful reductions in service use. | | |

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| 8. Given C, Given B, Rahbar M, et al. Effect of a cognitive behavioral intervention on reducing symptom severity during chemotherapy. *Journal of Clinical Oncology.* 2004;22(3):507-516.[8](#_ENREF_8) | To describe a randomized trial of a cognitive behavioral intervention on reducing symptom severity among patients diagnosed with solid tumors and undergoing a first course of chemotherapy and to determine whether the intervention had an additive or interactive effect on symptom severity in the presence of supportive care medication. | Patients (N=237) were accrued from comprehensive and community cancer centers, interviewed, and randomly assigned to either the experimental intervention (N=118) or conventional care (N=119). | Quantitative  Longitudinal | The goal of this intervention was to assist patients with the acquisition of self-management knowledge, skills, and behaviors to address symptom problems. This nurse-administered cognitive-behavioral intervention which focused on symptom management featured 10 contacts over the course of 20 weeks. The nurse and patient identified problems, the nurse proposed interventions, and together they evaluated the patient’s abilities to undertake requisite cognitive and behavioral strategies that, if performed successfully, could address the symptom problems. Fifteen symptoms were included in an index to assess the impact of the intervention: alopecia, pain, fatigue, nausea and vomiting, insomnia, shortness of breath, diarrhea, coordination problems, anorexia, fever, cough, dry mouth, constipation, mouth  sores, and inability to concentrate | 3 |
| **Results** | | | **Conclusion** | | |
| At the 10- and 20-week observations, there was a significant interaction between the experimental group and baseline symptom severity. Patients in the experimental group who entered the trial with higher symptom severity reported significantly lower severity at 10 and 20 weeks. By the end of the intervention, the percentage of patients who had implemented strategies for lowering severity below baseline threshold for selected symptoms were as follows: alopecia (72%), constipation (70%), fatigue (46%), nausea (56%), insomnia (71%), pain (50%), physical limitation (50%), and diarrhea (72%). Controlling for chemotherapy treatment status at follow-up and supportive care medications did not alter the effect of the experimental intervention. | | | The results of this study indicate that for patients undergoing a first course of chemotherapy, the intervention resulted in significantly lower levels of symptom severity for patients who entered the trial with higher severity scores at 10 and 20 weeks compared with patients receiving conventional care alone. Age, sex, site or stage of cancer, and supportive medications did not modify the effect of this cognitive behavioral intervention on symptom severity. The authors conclude that this intervention may provide a solution to problems related with patients’ high symptom burden. | | |

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| 9. Jarjoura D, Polen A, Baum E, et al. Effectiveness of Screening and Treatment for Depression in Ambulatory Indigent Patients. *Journal of General Internal Medicine.* 2004;19(1):78-84.[9](#_ENREF_9) | To determine the effectiveness of screening and treatment for depression among ambulatory indigent patients visiting resident physicians. | Participants in this study were clinic patients (N=61) over 18 years of age. All participants were either enrolled in Medicaid or were without private health insurance and had income below the federal poverty line. Participants had screened positive for a major depressive episode and were not receiving intervention for any mental health problem or were not seeking help for depression or other emotional problems. | Quantitative  Longitudinal | Resident physicians were educated to follow the Agency for Health Care Policy and Research guidelines (from AHRQ) for diagnosis and treatment of depression in a primary care setting. In the intervention group, a screening nurse advised residents regarding a positive screen, provided a standardized protocol outline, and attempted to arrange behavioral care. The resident was asked to: explore symptoms with the patient to affirm screen results and attempt to rule out physical conditions, medications, or other primary psychiatric diagnoses that could explain the results. If the depression diagnosis seemed appropriate, the resident was to: a) educate the patient about depression; b) provide educational materials; c) encourage behavioral therapy through an appointment to the local public mental health agency; d) educate the patient about antidepressant treatment and prescribe antidepressants when appropriate and acceptable to the patient; e) reschedule an appointment in 4 weeks; f) ensure that the screening nurse see the patient and provide the nurse with pertinent information. The patients in the usual care group were provided the results of the screen by the screening nurse before their visit with the resident, and advised to seek care for their symptoms. Outcomes were measured using th Beck Depression Inventory-II (BDI) and the SF-36 quality of life measure. | 1,3,5 |
| **Results** | | | **Conclusion** | | |
| Results for the primary outcome of depression symptoms measured with the Beck Depression Inventory (BDI) demonstrated that intervention was successful in reducing symptoms relative to usual care (difference = -4.9 BDI points, p=0.05, 95% confidence interval [CI], -9.8 to -0.005 effect size = -0.41). During the 12-month follow-up, 70% of intervention patients were treated for depression (of these, 91% with antidepressants), while 15% of usual care patients were treated with antidepressants for depression. Another 18% of the usual care group had depression noted, but no treatment was identified. Depression differences between intervention and control groups were similar at the 6- and 12-month measures. Quality of life and costs were also measured, but differences between the groups were not significant in this regard. | | | This study demonstrated that indigent internal medicine outpatients who screened positive for depression, but who were not receiving or seeking care for depression, benefited from an intervention by resident physicians who were trained with AHRQ depression guidelines. The attempt to increase communication between the internal medicine clinic and local mental health agency was not successful. Although the screening nurse tried to facilitate access to the agency for the intervention group, only 8 of 33 patients made at least one visit to the agency. However, screening and treatment for depression by resident physicians was successful in reducing symptoms relative to usual care in an indigent population. Almost twice as many intervention patients as usual care controls demonstrated a substantial reduction (10 BDI points) in symptoms related to depression. | | |

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| 10. Karlson EW, Liang MH, Eaton H, et al. A randomized clinical trial of a psychoeducational intervention to improve outcomes in systemic lupus erythematosus. *Arthritis and Rheumatism.* 2004;50(6):1832-184.[10](#_ENREF_10) | To evaluate a theory-based intervention to improve patient self-efficacy and partner support to manage systemic lupus erhytehmatosus (SLE). | Adult patients (N=122) with SLE who met the American College of Rheumatology criteria and were able to identify a partner (spouse or family member) were recruited from two academic medical centers and randomized into an experimental group or a control group. | Quantitative  Longitudinal | Patients and partners in the experimental group received an intervention designed to enhance self-efficacy, couples communication about lupus, social support, and problem solving. The intervention was carried out during a 30–45-minute discussion between the nurse educator, patient, and partner, after a regular visit for medical care and was followed up by monthly telephone counseling session for 6 months. Before the session, the patient and partner independently completed efficacy questionnaires, the patient for himself or herself, and the partner for the patient, covering important lupus self-management behaviors, such as management  of pain, fatigue, depression, appointment-keeping, and adherence to medications. The counselor then met with the subjects and shared their responses, with the goals of increasing patients’ self-management abilities and problem-solving techniques. Patients and partners in the control group received an attention placebo, including a 45-minute video presentation about lupus, and monthly telephone calls. Following the video, subjects were able to ask questions about the film, were given pamphlets about lupus and its management, and were encouraged to query their doctors. Outcomes measured included the Medical Outcomes Study Short Form 36, Systemic Lupus Activity Questionnaire (SLAQ), Systemic Lupus Activity Measure (SLAM). Additional outcome measures included: self-efficacy, social support, problem solving, satisfaction with medical care, and compliance. | 3 |
| **Results** | | | **Conclusion** | | |
| In multivariate models, adjusting for baseline covariates, scores for couple communication (p=0.01) were significantly higher at 6 months, and scores for self-efficacy (p=0.004) and global mental health status (p=0.03) were significantly higher at 12 months in the experimental group compared with the control group. The mean score for global physical function was higher by 7 points, which was a clinically meaningful change (p=0.2). The mean score for fatigue was also significantly lower in the experimental group than in the control group (p=0.05). SLE disease activity was unchanged by this intervention. | | | This study of a theory-based educational intervention in SLE demonstrated significantly higher scores for couple communication, self-efficacy, and mental health status, and lower fatigue scores in the experimental group compared with the control group. Because couple communication and self-efficacy appear to be modifiable risk factors, they may also be potential targets in more disadvantaged populations. The authors concluded that this nurse-delivered intervention has the potential to reduce health problems and costs in a debilitating, management-intensive chronic disease. | | |

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| 11. Kleinpell RM. Randomized trial of an intensive care unit-based early discharge planning intervention for critically ill elderly patients. *American Journal of Critical Care.* 2004;13(4):335-345.[11](#_ENREF_11) | To pilot test an intensive care unit-based nursing screening intervention to assist in determining the discharge needs and outcomes of critically ill elderly patients. | Patients 65 years and older (N=100) who were hospitalized in one of two intensive care units (ICUs) at two Midwestern university-affiliated medical centers were recruited for the study. | Quantitative  Longitudinal  2 Group Experimental Trial | The experimental group received screening with the discharge planning questionnaire (DPQ) within 24 to 48 hours of admission to the ICU. The DPQ is a 51-item questionnaire used to assess discharge needs. For each patient, the results of the DPQ screening were communicated to the discharge-planning nurse when the patient was transferred from the ICU. This step represented a formal structured communication of the results of the ICU screening to the discharge-planning nurse and allowed initial determination of which patients might need formal discharge planning. Patients in the control group received general discharge planning (no ICU intervention screening). In addition, the Acute Physiology and Chronic Health Evaluation III (APACHE III) was used to assess illness severity. | 2 |
| **Results** | | | **Conclusion** | | |
| Patients in the experimental group were more ready than patients in the control group for discharge (p=0.06). Patients in the experimental group were also more likely to report they had adequate information, had less concern about managing their care at home, knew their medicines, and knew danger signals indicating potential complications. Patients whose discharge planners had used the DPQ information were more ready for discharge (mean score 9.2 on a 10-point scale, compared with 8.2, p=0.06) and had less concern about managing their care at home (mean score 1.8 on a 10-point scale, compared with 2.9, p=0.09). These patients also had higher DPQ environment, social support, ADL, and IADL scores (p<0.001), suggesting greater limitations. These patients were also more likely to have a shorter ICU length of stay (mean 2.3 days, compared with 3.4 days, p=0.02) and shorter hospitalization stays (mean 8.4 days, compared with 10.0 days, p=0.08), but not higher APACHE III scores (p=0.41). | | | Intensive care unit–based early discharge planning can affect elderly patients’ preparation for discharge. Elderly patients who received early discharge planning in the ICU and referral to discharge planners who used the information reported better discharge preparation than did patients for whom discharge screening information was not obtained or was not used. Patients whose discharge planners reported using the DPQ screening information were significantly more ready for discharge than were the other patients. The patients whose discharge planners used the DPQ information were also more likely to report that they were very prepared for discharge, had adequate information, had fewer concerns about managing their care at home, knew their medicines, and knew danger signals indicating potential complications. The author felt that additional research is needed on the effect of ICU-based discharge screening and home follow-up interventions for acutely ill elderly patients. | | |

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| **Randomized Controlled Trials (N=34)** | | | | | |
| **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 |
| 12. Krein SL, Klamerus ML, Vijan S, et al. Case management for patients with poorly controlled diabetes: A randomized trial. American Journal of Medicine. 2004;116(11):732-7391212 | To evaluate the effects of a collaborative case management intervention for patients with poorly controlled type 2 diabetes on glycemic control, intermediate cardiovascular outcomes, satisfaction with care, and resource utilization. | This study was conducted with veterans (N=246) with diabetes and baseline hemoglobin A1C levels 7.5% at two academically affiliated Department of Veterans Affairs (VA) Medical Centers. | Quantitative  Qualitative  Longitudinal  Prospective | Patients were identified in pairs according to site and baseline HbA1c levels. All study participants were given an A&D Medical semiautomatic blood pressure monitor, home blood pressure monitoring guidelines, a lay version of the VA Diabetes Clinical Guidelines, and a periodic study newsletter. Patients assigned randomly to the control group received usual care from their primary care provider while intervention patients were assigned to a case manager. One nurse practitioner case manager at each site, working 20 hours a week, provided care for about 60 patients (120 patients per full-time case manager). Two nurse practitioner case managers worked with patients and their PCPs monitoring and coordinating care for the intervention group for 18 months through the use of telephone contacts, collaborative goal setting, and treatment algorithms. Health status and patient satisfaction were measured using the Short form Health Survey for Veterans and the Patient Satisfaction Questionnaire Form II. Resource utilization was obtained from the VA medical information system. | 2,3,5 |
| **Results** | | | **Conclusion** | | |
| There was no significant intervention effect on glycemic, lipid, or blood pressure control. Mean exit hemoglobin A1C (HbA1C) levels for both case management and control patients were over 9%and the mean change in levels was not different between groups (p=0.61). Low-density lipoprotein (LDL) cholesterol level and diastolic blood pressure decreased while systolic blood pressure increased slightly, but all changes were similar in the intervention and control groups. Aside from the proportion of patients who received care outside the VA, there was little difference in resource utilization between study groups. However, intervention patients were substantially more satisfied with their diabetes care, with 82% rating their providers as better than average compared with 64% of patients in the control group (p=0.04). Ninety percent of patients in the intervention group indicated that they would participate in another case management program and encourage others to participate. | | | An intervention of collaborative case management did not improve key physiologic outcomes for high-risk patients with type 2 diabetes. The type of patients targeted for intervention, organizational factors, and program structure are likely critical determinants of the effectiveness of case management. The authors conclude that their study demonstrates that case management may not be a sufficient strategy for achieving long-term improvements in outcomes for some high-risk patients or in certain practice settings. They suggest that health systems understand the potential limitations involved with case management before expending substantial resources on these programs, as the expected improvements in outcomes and downstream cost savings may not always be realized. | | |

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| **Randomized Controlled Trials (N=34)** | | | | | |
| **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 |
| 13. Kreulen GJ, Braden CJ. Model test of the relationship between self-help-promoting nursing interventions and self-care and health status outcomes. *Research in Nursing and Health.* 2004;27(2):97-109.[13](#_ENREF_13) | To test nurse-delivered self-help interventions to determine impact on self-care practice and client morbidity. | A sample of women (N=307) receiving medical treatment for breast cancer provided data for the study. Participants were recruited from a regional cancer center, private practice offices, and health maintenance organization outpatient sites. | Quantitative  Longitudinal | This study involved a secondary analysis of data  drawn from a larger intervention study, the Self-  Help Intervention Project, or SHIP (Braden et al.,  1998; Braden & Mishel, 2000). The SHIP study tested the efficacy of self-help promoting interventions for women receiving treatment for breast cancer. SHIP data were collected from participants at three times: after diagnosis but prior to involvement in study interventions; immediately after the 6-week intervention period; and 3 months later. The SHIP nursing interventions consisted of six weekly 90-min self-help classes, six independent study lessons that covered class material, and a 6-week uncertainty management telephone contact. The current study focused on four cells (class, independent study, telephone, and control). The self-help classes and independent study interventions included activities designed to enhance problem solving skills, cognitive reframing, and belief in self. The telephone-delivered uncertainty intervention included strategies for reducing and managing the uncertainties relevant to cancer diagnosis and treatment. Class and telephone interventions were delivered by trained nurses using established protocols. Outcome measures included: Inventory of adult self-care, wellness promotion, management of uncertainty [General self-care practice (GSCP)]; Access to Cancer Therapy, side-effects self-care, systems management diversity index, side effects self-care subscale and diversity, system management diversity [Illness self-care practice (ICP)] and Client Morbidly (CM). | 3 |
| **Results** | | | **Conclusion** | | |
| Findings support the hypothesized model linking these nursing interventions directly to self-care outcomes and self-care to client morbidity outcomes. Client factors of age, social network size, disease stage, receipt of chemotherapy, resourcefulness, and uncertainty significantly influenced predicted relationships. Examination of specific patterns of relationships for the sample revealed delayed behavioral responses to the interventions, variability in predictors of each outcome at the three measurement times and a more strongly predictive model when patient outcomes were considered within the context of client factors. | | | Study results provide insight into the relationship between nursing interventions and client behavioral and health status outcomes. The finding that involvement in nurse-delivered self-help-promoting interventions had a direct positive impact on both general and illness self-care practice provides support for the inclusion of patient behaviors in nursing outcomes models. Documentation of the moderately strong relationships between self-care practice and client morbidity suggests that behavioral outcomes are directly linked to changes in health status. The authors conclude that the study’s results provide modest support for the hypothesized model linking nurse-delivered self-help-promoting interventions directly to patient outcomes of self-care behavior and self-care behavior to client morbidity. | | |

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| **Citation** | **Study Aim** | **Population/ Setting** | **Study Design** | **Intervention** | **Outcome Measures**  1=care processes  2=patient experience  3=patient health indices  4=quality of life  5=cost |
| 14. Lenz ER, Mundinger MO, Kane RL, et al. Primary care outcomes in patients treated by nurse practitioners or physicians: Two-year follow-up. *Medical Care Research and Review.* 2004;61(3):332-351[14](#_ENREF_14) | To compare outcomes of patients assigned to a nurse practitioner or a physician primary care practice. | This study reports on the participants (N=406) from the original study that received primary care from the practice to which they had originally been assigned. The practices were ambulatory care clinics: either a nurse practitioner (NP) clinic (N=1) or physician (MD) clinic (N=5). 84% of the sample were Spanish speaking; 92.3% of the patients were Hispanic | Quantitative  Cross-Sectional | Comparison of patient outcomes based on whether patients were assigned to a nurse practitioner or physician for primary care. Patient satisfaction data collection occurred either in the patient’s home, in a university office setting, or by phone. Research nurses took blood pressures, peak flow readings, and drew blood to measure glycosylated hemoglobin for the hypertensive, asthmatic, and diabetic patients, respectively. The medical center provided billing data about participants’ use of primary, specialist, emergency room, and hospital care for the 2-year period following the initial visit to the assigned practice and 6 months prior to baseline. Outcomes were measured using the Medical Outcomes Study Short –Form 36 (MOS SF-36) and the Primary Care Assessment Survey (PCAS) was used to measure health status. | 1,2,3,5 |
| **Results** | | | **Conclusion** | | |
| No statistically significant differences occurred between NP and MD patients in their self-reported health status at 2 years, when measured with either the Medical Outcomes Study Short–Form 36 subscales or the physical and mental health summary scores. There were no significant group-by-time interaction effects, suggesting that patterns of change were similar in the nurse practitioner and physician groups. There were no significant differences in overall satisfaction with care received from the assigned practice. In year 2, nurse practitioner and physician patients did not differ significantly on their use of specialist, emergency, or inpatient hospital services. However, physician patients had higher primary care utilization than did NP patients. | | | The results of this 2-year follow-up study are consistent with findings from the first phase of the research, which indicated that outcomes of patients assigned for their primary care to a nurse practitioner practice do not differ from those of patients assigned to a physician practice. Two years after their initial visit to the assigned practice, nurse practitioner and physician patients reported similar levels of health status and satisfaction with care, and their utilization of specialists and emergency/urgent care resources, as well as the frequency of hospitalization, were equivalent. The authors suggest that additional research is needed to examine possible differences in the way these two disciplines deliver primary care and to determine the comparability of additional outcomes that might be more sensitive to those differences. | | |

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| **Randomized Controlled Trials (N=34)** | | | | | |
| **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 |
| 15. Lesley ML, Oermann MH, Vander Wal JS. A nursing interaction approach to consumer internet training on quality health care. *Health education.* 2004;104(1):25-32.[15](#_ENREF_15) | To examine the effectiveness of using the Internet to teach consumers about quality health care, compared consumer definitions of quality health care prior to and following completion of the Internet experience, and compared ratings of learning, satisfaction and value of the Internet instruction between consumers who completed the Internet intervention alone and consumers who completed the Internet intervention and interacted with a nurse. | The sample was comprised of adult consumers (N=34) from a public library in a suburban community. | Quantitative  Qualitative  Longitudinal | This computer-based educational intervention focused on improving understanding of quality health care and how to access. The intervention employed use of five Internet documents on quality care from the Agency for Healthcare Research and Quality (AHRQ), the Consumer Reports website, the American Association of Retired Persons (AARP), and the Department of Labor website. Consumers first learned about basic concepts of quality health care and then specific topics for use in their own health care. All of the documents included guides to active involvement in personal health care or the care of family members as well as information to aid decision-making. Participants completed a pre- and post-test to answer questions about their experience using the Internet in general and to look up health-related information. Participants were asked if they wanted to learn about Medicare at the AARP website or general health plan benefits and rights at the Department of Labor website. Participants were randomized to one of two groups: an Internet-only group in which the researcher was available to assist with site navigation, but would not discuss the documents until the session was completed; or an Internet-with-interaction group which involved a discussion with the researcher. The outcomes were knowledge of quality care measured by a cognitive test given before and after the intervention, and ratings by consumers of how much they learned from the instruction. | 1 |
| **Results** | | | **Conclusion** | | |
| The intervention was effective in increasing consumer knowledge of quality care from pre- (M=20.1, SD=2.2) to post-test (M=22.0, SD =1.9) for total sample (t=5.75, df=33, p<0.001). Although there were no significant differences between the two groups in knowledge gain, consumers in the nurse interaction group had significantly higher scores on usefulness of the information in assessing the quality of care they are receiving from their health-care providers. Interaction group had more expanded knowledge of quality of care. | | | The authors conclude that the Internet can be an effective medium for teaching consumers about health care quality, especially when combined with discussion with a nurse. By interacting with participants while they read information online, the nurse was able to help them apply abstract concepts about health care quality to their own lives. | | |

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| **Randomized Controlled Trials (N=34)** | | | | | |
| **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 |
| 16. Lichtman JH, Amatruda J, Yaari S, et al. Clinical trial of an educational intervention to achieve recommended cholesterol levels in patients with coronary artery disease. *American Heart Journal.* 2004;147(3):522-528.[16](#_ENREF_16) | To determine whether a nurse-based educational intervention, designed to educate patients with confirmed coronary artery disease about personal low-density lipoprotein (LDL) cholesterol target levels and encourage partnership with physicians, could increase adherence with National Cholesterol Education Program target levels (LDL cholesterol level ‚≤100 mg/dL). | Patients hospitalized with confirmed coronary artery disease (N=756) were randomized to undergo a nurse-based educational intervention or usual care for a 12-month period after hospitalization. | Quantitative  Longitudinal | The Reinforcing Education About Cholesterol  (REACH) intervention focused on risk reduction, with an emphasis on teaching patients about targets for their LDL cholesterol level and encouraging them to partner with their physicians to achieve these goals. After completing a baseline interview, participants were randomized to undergo either the educational intervention or control groups. The control group received usual and standard care from their physician. At 3, 6, and 9 months after hospital discharge, patients in the control group received postcards to remind them to return to the medical center for the trial’s 1-year follow-up assessment. The intervention group received a 1-year nurse-based intervention. Each patient in the intervention group received a standardized telephone contact at 2 weeks, 3 months, 6 months, and 9 months after hospital discharge. The telephone contacts were approximately 7 minutes in length and provided individualized instruction about LDL cholesterol level goals and management strategies. Patients in the intervention group also received monthly educational mailings. The primary outcome of interest as the proportion of patients with LDL cholesterol target level 1 year after hospitalization and the proportion of patients with accurate knowledge of LDL cholesterol levels. | 3 |
| **Results** | | | **Conclusion** | | |
| The proportion of patients at LDL cholesterol target levels at 1 year did not differ between the intervention (70.2%) and usual care group (67.4%, p=0.46). At the conclusion of the trial, patient knowledge about LDL cholesterol target level was higher for the intervention group than the usual care group (19.6% and 6.7%, respectively, p=0.001), but this was not associated with improved cholesterol management. Approximately 70% of patients who knew their LDL cholesterol target level achieved the goal level at 1 year, compared with 69% of patients who did not know their LDL cholesterol target level. | | | This nurse-based educational intervention did not improve compliance with recommended LDL cholesterol level guidelines among patients with coronary artery disease. The study did not identify an increased advantage for patients who were more knowledgeable about cholesterol. The findings raise concerns about a focused patient education approach to improving lipid levels. The authors note that patient empowerment through educational strategies has proven effective in disease management for other chronic diseases, but suggest that it may be less effective for asymptomatic conditions such as hypercholesterolemia. | | |

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| **Randomized Controlled Trials (N=34)** | | | | | |
| **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 |
| 17. Lozano P, Finkelstein JA, Carey VJ, et al. A multisite randomized trial of the effects of physician education and organizational change in chronic-asthma care: Health outcomes of the pediatric asthma care patient outcomes research team II study. *Archives of Pediatrics and Adolescent Medicine.* 2004;158(9):875-883.[17](#_ENREF_17) | To evaluate the effectiveness of two asthma care improvement strategies in primary care (peer educator training for physician and planned care- peer educator and nurse mediated organizational changes). | The sample was comprised of children (N=638) aged 3 to 17 years with mild to moderate persistent asthma enrolled in primary care practices (N=42) affiliated with managed care organizations (N=4). | Quantitative  Longitudinal | Practices within each geographic site were randomized to three arms: two intervention arms (the peer leader education intervention and the planned care intervention) and usual care. The peer leader education intervention consisted of training one physician per practice in asthma guidelines and peer teaching methods. The intervention included two workshops, central support by an educational coordinator, and an ongoing learning network for peer leaders via national and local teleconferences. Each peer leader received a physician tool kit and each practice received a tool kit of patient education materials. Planned care combined the peer leader program with nurse-mediated organizational change through planned visits with assessments, care planning, and self-management support, in collaboration with physicians. Practices in the usual care arm received a copy of the 1997 National Asthma Education and Prevention Program guidelines and a tool kit of patient education materials 1 year into the study. Outcomes included oral steroid bursts asthma symptoms within the past 14 days. | 3 |
| **Results** | | | **Conclusion** | | |
| Children in the peer leader arm had 6.5 fewer symptom days per year (95% confidence interval [CI],−16.9 to 3.6), a non-significant difference, but had a 36% (95% CI, 11% to 54%) lower oral steroid burst rate per year compared with children receiving usual care. Children in the planned care arm had 13.3 (95% CI,−24.7 to −2.1) fewer symptom days annually (−12% from baseline; p=0.02) and a 39% (95% CI, 11% to 58%) lower oral steroid burst rate per year relative to usual care. Both interventions showed small, statistically significant effects for 2 of 5 Children’s Health Survey for Asthma scales. Planned care subjects had greater controller adherence (parent report) compared with usual care subjects (rate ratio, 1.05 [95% CI, 1.00 to 1.09]). | | | This study demonstrates that an organized approach to pediatric asthma care that includes the services of a nurse plus peer leader education (planned care intervention) can significantly reduce asthma symptom days by 12%, or an average of 13 days per year. The less-costly physician behavior change intervention may also have had a more modest effect on symptom days. Peer leader education on its own is less comprehensive and the treatment effect less pronounced than results achieved with the planned care intervention. | | |

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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 |
| 18. Mazzuca SA, Brandt KD, Katz BP, et al. Can a nurse-directed intervention reduce the exposure of patients with knee osteoarthritis to nonsteroidal antiinflammatory drugs? *Journal of Clinical Rheumatology.* 2004;10(6):315-322.[18](#_ENREF_18) | To evaluate a nurse-directed self-management intervention for managed care patients with knee osteoarthritis (OA), emphasizing nonpharmacologic (NonPharm) management of pain and functional impairments and minimization of exposure to the risks and costs of nonsteroidal antiinflammatory drugs (NSAIDs). | Subjects were patients (N=186) from a large health maintenance organization (HMO) who satisfied American College of Rheumatology clinical criteria for knee OA. | Quantitative  Longitudinal | An arthritis nurse educator, in consultation with the patient's primary care physician (PCP), followed a detailed algorithm for implementing and monitoring the response to NonPharm treatment modalities. The nurses apprised the PCP of the patient's progress and made algorithm-based recommendations, as appropriate, for reduction of dose, and eventual discontinuation, of NSAIDs in favor of acetaminophen. Following a 30- to 60-minute bolus of self-care instruction, patients were given 2 weeks to adopt these measures and evaluate their effects, at which point they were contacted by telephone by the nurse to assess their progress. Telephone contacts typically lasted 5 to 10 minutes. The control group received routine OA care. In addition, their PCP received the care algorithm as a part of the HMO’s in-service education program. Knee OA outcomes were measured by the Pain and Function scales of the Western Ontario and McMaster Universities (WOMAC) OA index. | 3 |
| **Results** | | | **Conclusion** | | |
| Medical record audits revealed that NonPharm treatments were implemented by 75% of patients in the education group but by only 18% of patients receiving routine care (p<0.00001). Various forms of lower extremity muscle strengthening exercise were the most frequent treatment recommendation to patients in both groups. The education group more often used thermal modalities and joint protection principles. Over the subsequent 12 months, 20 patients (26%) in the education group, but only 3 (5%) in the control group (p=0.002), underwent changes in drug treatment of OA pain consistent with the NSAID-sparing goals of the intervention, i.e., acetaminophen as initial drug of choice; reduction in dose, or discontinuation, of NSAID; switch from an NSAID to an analgesic. Two patients in the education group were able to discontinue all OA pain medications and 10 from that group were able to change from NSAID to analgesic therapy. Only one patient in the education group required reinstitution of NSAIDs because of an increase in knee pain. Mean scores on the Western Ontario and McMaster Universities (WOMAC) OA Index indicated no deterioration of pain control or function over 12 months in the group treated according to the algorithm. There was no statistically significant difference in the mean number of PCP visits made by the members of the education and control groups. | | | The reliance on NSAIDs can be reduced for patients with knee OA without a resultant increase in OA pain and disability by incorporating self-care education into the primary care setting and fostering collaboration between a proactive arthritis nurse and the patient’s PCP. The authors note that this study was not designed to examine the effects of different approaches to maintaining the desired changes in therapy. Therefore, they suggest that future research on OA management should examine the comparative efficacy of alternative strategies for maintaining safer, more conservative approaches to management of patients with knee OA. | | |

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| 19. McCaffrey R, Locsin R. The effect of music listening on acute confusion and delirium in elders undergoing elective hip and knee surgery. *Journal of Clinical Nursing.* 2004;13(6 B):91-96.[19](#_ENREF_19) | To determine the effect of music on elders undergoing elective hip and knee surgery who experience acute confusion and delirium postoperatively. | This study was conducted with elders (N=66) undergoing hip and knee surgery who experienced postoperative confusion and delirium and was set in a large tertiary care center. | Quantitative  Longitudinal | After surgery, participants were randomly assigned to rooms on the orthopaedic unit of the hospital. Control group participants received standard postoperative care. Participants in the experimental group received standard care and also had a bedside compact disc (CD) player that could be automatically turned on up to three times daily. Music was played and heard while the patient was awakening from anesthesia. In addition, the nurses were asked to turn on the music each time they walked into the room, and family members were instructed on how to turn on the CD player. Once awake, patients were instructed on how to use the CD player so that music could be played at any time they desired. Post discharge, the principal researcher reviewed the nurses’ notes and the scores for ambulation from the physical therapy notes made on each patient’s chart. These were used to determine if there were any episodes of confusion, disorganized thinking, altered level of consciousness or cognitive disturbance, and to retrieve the readiness-to-ambulate scores of each patient on the day of surgery. | 3 |
| **Results** | | | **Conclusion** | | |
| There was a significant decrease in the number of episodes of postoperative confusion and delirium among those in the experimental group compared with those in the non-listening control group (F=19.568, p=0.001). In addition, the experimental group had significantly higher scores on the readiness-to-ambulate profile than the control group (F=19.568, p=0.001; F=28.14, p=0.001). | | | The ability of music to decrease the confusion and delirium episodes and to increase earlier ambulation facilitates better recovery were positive findings of this study. In addition, nurses noted the effects of music on postoperative confusion and asked if they were permitted to use music for other disoriented patients if they were not part of the study. Researchers also found that experimental group participants’ family members appreciated the music, stating that it made them feel calmer and that they felt the room was a more soothing environment for healing. The authors conclude that since music is an inexpensive, noninvasive therapy, it is an effective intervention that nurses can implement for patients recovering from hip and knee surgeries. | | |

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| 20. Miaskowski C, Dodd M, West C, et al. Randomized clinical trial of the effectiveness of a self-care intervention to improve cancer pain management. *Journal of Clinical Oncology.* 2004;22(9):1713-1720.[20](#_ENREF_20) | To test the effectiveness of the PRO-SELF Pain Control Program compared with standard care in decreasing pain intensity scores, increasing appropriate analgesic prescriptions, and increasing analgesic intake in oncology outpatients with pain from bone metastasis. | Oncology outpatients (N=174) experiencing pain from bone metastasis were recruited from seven  outpatient settings in Northern California. | Quantitative  Longitudinal | Patients were randomly assigned to either the PRO-SELF or the standard care group. PRO-SELF group patients were seen by specially trained intervention nurses (during week 1) and received a psycho-educational intervention, were taught how to use a pillbox, and were given written instructions on how to communicate with their physician about unrelieved pain and the need for changes in their analgesic prescriptions. Patients were coached during two follow-up home visits (during weeks 3 and 6) and three phone calls (conducted during weeks 2, 4, and 5) on how to improve their cancer pain management. The PRO-SELF nurse coached the patients in: how to improve pain relief by altering the times and frequency of analgesic intake; how to assess pain and their response to analgesics; how to use strategies to prevent or treat analgesic side effects; and how to speak with their healthcare providers if the analgesic prescription was not adequate and needed to be changed. The primary outcome of this study was a significant reduction in pain intensity scores. The secondary outcomes were an increase in opioid analgesic intake and an increase in the percentage of patients with an appropriate analgesic prescription at the end of the study. | 1,3 |
| **Results** | | | **Conclusion** | | |
| No significant differences were found between the PRO-SELF group and the standard care group in the percentage of patients who started receiving nonsteroidal anti-inflammatory drugs (NSAIDs), corticosteroids, pamidronate, strontium, and radiation therapy after beginning the study. Pain intensity scores decreased significantly from baseline (all p<0.0001) in the PRO-SELF group (i.e., least pain, 28.4%; average pain, 32.5%; and worst pain, 27.0%) compared with the standard care group (i.e., least increased by 14.6%, average increased by 1.9%, and worst decreased by 1.2%). The percentage of patients in the PRO-SELF group with the most appropriate type of analgesic prescription increased significantly from 28.3% to 37.0% (p=0.008) compared with a change from 29.6% to 32.5% in the standard care group. This 2.9% increase was not statistically significant (p=0.51). Although not significant, patients in the PRO-SELF group had, on average, increased their total amount of opioid analgesic taken by 38.6 mg (±131.7 mg) of morphine/patient/24 hours (a 28.6% increase from baseline) compared with 18.1 mg (±56.2 mg) of morphine/patient/24 hours (a 21.9% increase from baseline) in the standard care group. | | | This study is the first to demonstrate that the use of a psychoeducational intervention that incorporates the principles of academic detailing and nurse coaching within the framework of self-care can improve the management of cancer pain. The study findings confirm the necessity of developing individual plans of care for each oncology patient who experiences cancer pain. The authors acknowledge that the PRO-SELF Pain Control Program is labor intensive and time consuming. However, they suggest that teaching patients new skills to manage other medical problems is equally challenging and urge that future research should focus on the development of less time-intensive approaches that will be equally or more effective. | | |

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| **Randomized Controlled Trials (N=34)** | | | | | |
| **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 |
| 21. Montori VM, Helgemoe PK, Guyatt GH, et al. Telecare for Patients with Type 1 Diabetes and Inadequate Glycemic Control: A randomized controlled trial and meta-analysis. *Diabetes Care.* 2004;27(5):1088-1094.[21](#_ENREF_21) | To determine the efficacy of telecare (modem transmission of glucometer data and clinician feedback) to support intensive insulin therapy in patients with type 1 diabetes (DM I) and inadequate glycemic control. | The sample included patients (N=31) with type 1 diabetes who were receiving usual diabetes care in a diabetes clinic. | Quantitative  Longitudinal | All enrolled patients were trained to connect an Acculink modem to an Accu-Chek Complete glucometer and the phone line and to transmit glucometer data to the research computer. All patients were asked to monitor their blood glucose 4 times per day, 7 days per week, and to transmit the recorded glucometer data at least every 2 weeks. Patients allocated to the telecare arm received feedback within 24 hours of transmission from a study nurse supervised by a clinical endocrinologist. Patients allocated to the control arm did not receive unsolicited feedback, but contacted the study nurse as frequently as necessary. All patients received face-to-face diabetes care at clinic visits every 3 months. The primary outcomes measure was HbA1c. The secondary outcome measures included: proportion achieving HbAic <7% at 6 months, number and severity of hypoglycemic episodes, the time the nurse spent in reviewing data nad providing patients with feedback, and the time the physicians spent supervising the study nurse. To assess the impact of the intervention on diabetes self-management, patients completed the Summary of Diabetes Self-Care Activities (SDSCA). | 1,3 |
| **Results** | | | **Conclusion** | | |
| There was a significant between-group difference in the 6-month HbA1c (telecare 7.8±1.3% vs. control 8.2 ±1.2%) after taking into account the difference in HbA1c at baseline (p=0.03). There was no significant interaction between baseline HbA1c and treatment (p=0.1). Compared with the control group, telecare patients had a greater chance of achieving 6-month HbA1c≤7% (29 vs. 7%). At 6 months, there was a median 10.7% increase from baseline in the blood glucose testing subscale of the Summary of Diabetes Self-Care Activities in the telecare intervention arm and a median 0% change in the control group. Patients in both groups reported self-monitoring their blood glucose a median of 6 days per week at baseline and 7 days per week at 6 months. Nurses spent 50 more minutes/patient giving feedback on the phone with telecare patients than with control patients. | | | Telecare (the transmission of glucometer data followed by nurse-mediated feedback and support) is associated with small effects on glycemic control in patients with type 1 diabetes on intensive insulin therapy but with inadequate glycemic control. There was an identified trend of enhanced adherence to self-monitoring (greater in the telecare group) and better glycemic control in both groups. The main difference in care delivery between the two groups was in the health professional’s time. | | |

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| 22. Naylor MD, Brooten DA, Campbell RL, et al. Transitional care of older adults hospitalized with heart failure: a randomized, controlled trial. *Journal of the American Geriatrics Society.* May 2004;52(5):675-684.[22](#_ENREF_22) | To examine the effectiveness of a transitional care intervention delivered by advanced practice nurses (APNs) to elders hospitalized with heart failure. | This study was conducted with patients (N=239) aged 65 and older who were hospitalized with heart failure. The study was conducted at six Philadelphia academic and community hospitals. | Quantitative  Longitudinal | In collaboration with patients’ physicians, three APNs implemented an intervention extending from hospital admission through 3 months after hospital discharge. The intervention included the following components: 1) an orientation and training program guided by a multidisciplinary team of heart failure experts to prepare APNs to address the needs of older adults and their caregivers throughout an acute episode of heart failure; 2) use of care management strategies foundational to the Quality-Cost Model of APN Transitional Care; and 3) APN implementation of an evidence-based protocol, guided by national heart failure guidelines and designed specifically for this patient group and their caregivers, focusing on comprehensive management of needs and therapies associated with an acute episode of heart failure complicated by multiple comorbid conditions. Control group patients received care routine for the admitting hospital, including site-specific heart failure–patient management and discharge planning critical paths and, if referred, standard home agency care consisting of comprehensive skilled home health services 7 days a week. Outcomes measures includes resource utilization, quality of life (Minnesota Living with Heart Failure Questionnaire), functional status(Enforced Social Dependency Scale), patient satisfaction, hospital readmissions, resources costs were estimates using standardized Medicare reimbursements for services used. | 2,3,4,5 |
| **Results** | | | **Conclusion** | | |
| Time to first readmission or death was longer in intervention patients. At 52 weeks, intervention group patients had fewer readmissions than did the control group (47.5% vs. 61.2%) and lower total costs. Mean 52-week total costs adjusted for unequal follow-up were $7,636 for the intervention group, compared with $12,481 for the control group. Of the rehospitalizations, 22% in the intervention group versus 31% in the control group were related to comorbidities, 38% versus 44% for heart failure and 39% versus 24% for new health problems. Hospital days were fewer in intervention patients (588 days vs. 970 days). The intervention group reported greater overall quality of life at 12 weeks and in the physical dimension at 2 weeks and 12 weeks. Satisfaction with care was greater in intervention patients at 2 and 6 weeks. | | | This intervention increased time to first readmission or death through 1 year postindex hospital discharge, reduced the total number of rehospitalizations, and decreased medical costs of elders hospitalized with both systolic and diastolic heart failure. Overall quality of life and the physical dimension of quality of life were improved at only one (12 weeks) and two (2 and 12 weeks) of the five follow-up points, respectively. Patient satisfaction, assessed only through 6 weeks, was also enhanced. These findings substantially inform the understanding of patient management strategies needed to improve clinical outcomes for a growing population of elders living longer with multiple, debilitating conditions while reducing overall costs. The authors conclude that these findings demonstrate the potential benefit of a comprehensive, multidisciplinary, individualized intervention directed by clinical nurse experts that spans the entire episode of acute illness and bridges the transition from hospital to home. | | |

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| **Randomized Controlled Trials (N=34)** | | | | | |
| **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 |
| 23. Newcomer R, Maravilla V, Faculjak P, et al. Outcomes of preventive case management among high-risk elderly in three medical groups: A randomized clinical trial. *Evaluation and the Health Professions.* 2004;27(4):323-348.[23](#_ENREF_23) | To evaluate patient outcomes (utilization, expenditures and higher health status) 12 months after implementation of an Enhanced Case Management (ECM) with the intention of complementing primary care for geriatric patients enrolled in PacifiCare's Secure Horizons Medicare plan. | The sample included patients (N=3,079) aged 80+ or 65+ with at least one qualifying condition: chronic obstructive pulmonary disease, congestive heart failure, coronary disease, diabetes. Participation was limited to a PacifiCare members who were  receiving primary care from a Sharp HealthCare–affiliated medical group. | Quantitative  Longitudinal | The ECM program was implemented with six nurse case managers, two per affiliated medical group. The program featured nurse case managers, an annual screening questionnaire and care planning, monitoring of individual status and care plan effectuation, support for the patient and caregiver, treatment adherence monitoring, and transitional care. Participants were triaged into high-, medium-, or low- priority risk categories. Active case management was initiated within 30 days among the high-risk cases and progressed through all priority groupings within 90 days of program enrollment. While in active status, clients were contacted at least monthly, but weekly or more frequent contacts were common until problem resolution was attained. After progress was made on the care plan implementation, the client moved to a monitoring status. Case manager contacts with the member then reduced to a 60- to 90-day interval. This was supplemented among all cases by monitoring ER visits, hospital and nursing home admissions, home health visits, and durable medical equipment orders from the health plan’s data systems. | 3,5 |
| **Results** | | | **Conclusion** | | |
| No statistically significant main effects were found, but persons with three or more independent activity of daily living limitations were about half as likely to have a nursing home admission if they were in case management rather than in the control group. | | | Although there were no statistically significant differences in hospital days, readmission rates, and nursing home days between ECM and usual care within Sharp HealthCare, trends suggested possible differences. The authors suggest that consideration could be given to using ECM to help link primary care with the post-hospital care for selected high-risk patients in transitional care. | | |

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| **Randomized Controlled Trials (N=34)** | | | | | |
| **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 |
| 24. Noel HC, Vogel DC, Erdos JJ, et al. Home telehealth reduces healthcare costs. *Telemedicine and e-Health.* 2004;10(2):170-183.[24](#_ENREF_24) | To determine whether home telehealth, when integrated with the health facility's electronic medical record system, reduces healthcare costs and improves quality-of-life outcomes relative to usual home healthcare services for elderly high resource users with complex co-morbidities. | Home healthcare patients (N=104) with complex heart failure, chronic lung disease, and/or diabetes mellitus participated in this study. | Quantitative  Longitudinal | The control group received usual home healthcare services and nurse case management. The intervention group received home telehealth units that used standard phone lines to communicate with the hospital plus nurse case management. Disease management surveys and education modules were deployed via the telehealth units. Quality of life was assessed with OARS Multidimensional Functional Assessment | 3,4 |
| **Results** | | | **Conclusion** | | |
| Healthcare use was collected for bed-days-of-care, urgent visits, A1C levels for the diabetic sample, and Coumadin visits for the anticoagulated sample. At 6 months in the study, bed-days-of-care decreased for the intervention group (p<0.001) and the control group (p=0.001). Urgent care visits decreased for the intervention group (p=0.023) and increased for the control group (p=0.902). The number of Coumadin visits showed broad variability. The intervention group should a strong statistically significant decrease in A1C levels (p<0.001) and the control group showed a strong significant increase in A1C levels (p=0.002). Functional levels and patient-rated health status did not show a significant difference for either group. | | | The authors conclude that combining home telehealth, nurse case management, and patient-centered care has the potential to optimize wellness and control costs for an increasingly elderly population with complex co-morbidities. The study findings demonstrated that the intervention decreased unnecessary resource use without added costs for the home telehealth units. | | |

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| **Randomized Controlled Trials (N=34)** | | | | | |
| **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 |
| 25. Oliveria SA, Dusza SW, Phelan DL, et al. Patient adherence to skin self-examination: Effect of nurse intervention with photographs. *American Journal of Preventive Medicine.* 2004;26(2):152-155.[25](#_ENREF_25) | To assess the impact of a brief nurse-delivered intervention using digital photographs on patients' adherence to performing skin self-examination (SSE). | Patients at high risk for melanoma skin cancer (N=100) were recruited from the outpatient Pigmented Lesion Clinic at Memorial Sloan–Kettering Cancer Center. | Quantitative  Longitudinal | Group A was randomized to the teaching  intervention (physician and nurse education modules) and received a photo book with personal whole-body photographs, compiled in the form of a booklet, and nurse instruction on how to use the photographs as an adjunct to SSE. Group B was randomized to receive the teaching intervention with no photo book and received a written pamphlet on how to perform SSE and how to record moles in a diary format as an adjunct to SSE. | 3 |
| **Results** | | | **Conclusion** | | |
| In Group A, 10.2% of the patients at baseline reported skin examination three or more times during the past 4 months, while 61.2% reported skin examination three or more times at the 4-month follow-up (p=0.039 for paired comparison). In Group B (teaching intervention only), nearly 20% of the patients at baseline reported skin examination three or more times during the past 4 months, while 37% reported skin examination three or more times at the 4-month follow-up (p=0.63). The increase in reported skin examination was compared between the two groups (51% vs. 17.6%, p=0.001). | | | The results suggest providing patients with photographs may encourage them to carefully watch and better detect suspicious changes in their lesions. Utilizing digital photographs as an adjunct to screening appeared to increase patient adherence to performing SSE, an important outcome since early detection and excision of lesions has the potential to reduce morbidity and mortality from melanoma. | | |

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| **Randomized Controlled Trials (N=34)** | | | | | |
| **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 |
| 26. Rudd P, Houston Miller N, Kaufman J, et al. Nurse management for hypertension: A systems approach. *American Journal of Hypertension.* 2004;17(10):921-927.[26](#_ENREF_26) | To test efficacy of a physician-directed, nurse-managed, home-based system for hypertension (HTN) management with standardized algorithms to modulate drug therapy, based on patients' reports of home blood pressure (BP). | Outpatients (N=150) requiring drug therapy for hypertension from primary care medical clinics were included in this study. | Quantitative  Longitudinal | Patients received either usual care alone (UC) or usual care supplemented by nurse management for hypertension (INT). The nurse care manager conducted baseline counseling on intervention patients’ correct use of an automated BP device, regular return of the automatically printed BP reports, tips for enhancing drug adherence, and recognition of potential drug side effects. The nurse initiated follow up phone contacts at 1 week and at 1, 2, and 4 months. At the end of each week, the BP device generated a printed report of up to 14 measurements. Patients recorded BP twice-daily at the same times each day. Every 2 weeks, patients mailed the values printed by the BP device to the nurse care manager, who used these BP data to guide drug therapy. Usual care patients in both groups continued to receive the routine care that they had received before the study. Patients in both groups returned to the clinic at 3 and 6 months for BP measurements, which were performed by study staff blinded to group assignment. Patients in both groups received instruction in the use of an electronic drug event monitor. At 3- and 6-month clinic visits, project staff downloaded the data from the electronic drug event monitor but provided no feedback on drug adherence to patients, physicians, or nurse care managers. | 3 |
| **Results** | | | **Conclusion** | | |
| Patients receiving INT achieved greater reductions in office BP values at 6 months than those receiving UC: 14.2±18.1 versus 5.7±18.7 mm Hg systolic (p<0.01) and 6.5±10.0 versus 3.4+/- 7.9 mm Hg diastolic, respectively (p<0.05). At 6 months, one or more changes in drug therapy in 97% of INT patients was observed versus 43% of UC patients, and 70% of INT patients received two or more drugs versus 46% of UC. Average daily adherence to medication was superior among INT subjects (mean±SD, 80.5%±23.0%) than among UC subjects (69.2±31.1%; t(113)=2.199, p=0.03). There were no significant adverse drug reactions in either group. | | | This study found that home-based, physician-directed, nurse-guided drug therapy proved superior in BP control to standard office-based management among eligible hypertensive patients. Telephone-mediated nurse management can successfully address many of the systems-related and patient-related issues that limit pharmacotherapeutic effectiveness for hypertension. While medical measurement devices for home use can be employed via the Internet, the authors contend that these technological innovations do not diminish the need for physicians’ active involvement in the creation, appraisal, and refinement of management protocols. | | |

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| 27. Scott LD, Setter-Kline K, Britton AS. The effects of nursing interventions to enhance mental health and quality of life among individuals with heart failure. *Applied Nursing Research.* 2004;17(4):248-256.[27](#_ENREF_27) | To examine the effects of mutual goal setting and supportive-educative nursing interventions on mental health and quality of life. | Participants (N=88) with heart failure were recruited from two nonprofit home health care agencies in the Midwest. | Quantitative  Longitudinal  Experimental Repeated Measures | All participants received routine heart failure (HF) management according to the home care agency’s protocol. In addition to this routine care, three specific nursing interventions (mutual goal setting, supportive-educative, placebo) were developed for use in this study. Participants in the mutual goal-setting intervention (MGS) interacted with nurses to examine patients’ values about HF and to determine goals for achievement and strategies to achieve those goals. The supportive-educative nursing intervention (SE) taught the client about self-care management while providing additional support, addressing issues related to general counseling, prognosis, activity and dietary recommendations, medications, and importance of adherence to the treatment/care plan. The placebo intervention consisted of health promotion topics such as adult immunizations, fall prevention, general nutrition, and general health maintenance. Each intervention group had its own nurse interventionist to prevent cross contamination. Using prepared scripts and materials, the nurse interventionists met with individual participants each week for a total of eight consecutive weeks in the participants’ own homes. Outcomes of mental health status were measured using The Mental Health Inventory-5, and the cardiac version of the Quality of life index was selected to assess quality of life. | 3,4 |
| **Results** | | | **Conclusion** | | |
| There were no significant differences in the Mental Health Inventory-5 (MHI-5) scores at baseline and 3 months. However, at 6 months, the MGS group had higher mental health scores (M=85.41, SD=15.81) than both SE (M=66.22±28.02) and placebo (M=62.61±19.03) intervention groups. There were no differences in quality-of-life (QOL) domains until the 6-month data collection period. During that assessment, the MGS group had significantly higher QOL scores (M=25.02±3.63) than the SE (M=22.95±4.75) or placebo (M=20.79±4.78) groups. | | | The findings of this study indicate that two nursing interventions designed to reduce the challenges of living with HF and minimizing its consequences have the potential for improving mental health and QOL for individuals with HF. In particular, the use of MGS as a nursing intervention was found to significantly enhance and sustain perceptions of mental health and QOL in HF participants. | | |

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| 28. Scura KW, Budin W, Garfing E. Telephone social support and education for adaptation to prostate cancer: a pilot study. *Oncology nursing forum.* 2004;31(2):335-338.[28](#_ENREF_28) | To evaluate the feasibility of an intervention of telephone social support and education to increase the physical, emotional, functional, and interpersonal adaptation of men to prostate cancer. | The sample consisted of men (N=17) diagnosed with prostate cancer within four weeks of study entry in an urban setting. | Quantitative  Qualitative  Longitudinal | The subjects were randomized to one of two study  treatment groups: an experimental group receiving 12 months of telephone social support and education via a mailed resource kit and a control group receiving education via a mailed resource kit only, with no telephone social support. The experimental protocol was implemented by the same oncology research assistant in three phases. The first phase provided weekly telephone social support for two weeks, followed by eight weeks of weekly telephone social support with the addition of a structured formal education component. The second phase began 10 weeks after study entry and continued for five months. Telephone social support and education were reduced to twice per month. The final phase began approximately seven months after study entry. Telephone social support and education decreased again to once per month. Subjects assigned to the control group received education via mailed resource kits only. The resource kit included  a prostate cancer information manual developed for this study, videotapes, and an audiotape. Control subjects did not receive social support via telephone. Physiologic, self-concept, role function and interdependence domains were measured by The Functional Assessment of Cancer Therapy Scale-General (version 3); symptoms were measured using the Symptom Experience Scale-Prostate; Erectile dysfunction was measured by the International Index of Erectile Function Scale; and changes in the quality of the subjects’ relationships with their significant other was measured by The Relationship Change Scale. | 3 |
| **Results** | | | **Conclusion** | | |
| Scores measuring physical, functional, and sexual well-being were lowest at the end of phase II, coinciding with the period of active treatment. Measures of emotional and social well-being were highest at the end of phase II and then decreased to above phase I levels in phase III. All scales demonstrated good variability at each of the four data collection points. While the results were somewhat more favorable for the experimental group on all outcome measures, differences were not statistically significant. Structured interviews with 14 of 17 subjects revealed that telephone social support and education were effective in increasing adaptation to prostate cancer. | | | Despite the lack of a significant difference between the experimental and treatment groups in this small sample of men, analysis of trends and interview feedback indicated that telephone social support, in addition to education through a mailed resource kit, has the potential to be beneficial by increasing access to supportive services. During the 12-month pilot study, the experimental group reported the importance of talking to someone with whom they could discuss their fears, indecisions, and treatment side effects. The men in the experimental group indicated that they found receiving a variety of information helpful in understanding the disease and treatment options. Telephone counseling increases access to supportive services for men, specifically for those of lower socioeconomic strata and men of color, who usually are under-represented in support groups. | | |

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| 29. Sivarajan Froelicher ES, Miller NH, Christopherson DJ, et al. High Rates of Sustained Smoking Cessation in Women Hospitalized with Cardiovascular Disease: The Women's Initiative for Nonsmoking (WINS). *Circulation.* 2004;109(5):587-593.[29](#_ENREF_29) | To test the efficacy of smoking-cessation intervention in women hospitalized for cardiovascular disease (CVD). | Women (N=277) diagnosed with CVD were randomly assigned within 1 of 12 San Francisco Bay Area hospitals to a usual-care group or intervention group. | Quantitative  Qualitative  Longitudinal | The usual care group (UG) participants brief counseling from a physician regarding the need for and benefits of smoking cessation, a copy of the pamphlet Calling It Quits from the American Heart Association (AHA), and a list of local smoking-cessation classes and programs in their communities. Intervention group (IG) participants received nurse-managed smoking-cessation and relapse-prevention intervention. The intervention provided the usual care plus a nurse-managed intervention. This intervention included a 30- to 45-minute individualized counseling session with multimedia aids that study participants were given before their discharge from the hospital. During the session, the women viewed a 17-minute videotape from the AHA, which was given to them together with an 18-minute stress and relaxation audiotape and an AHA workbook and videotape on smoking cessation and relapse prevention. After hospital discharge, each woman received up to 5 structured telephone calls of 5 to 10 minutes each to continue the intervention; the follow-up calls were placed at 2, 7, 21, 28, and 90 days after their discharge. These calls were to assess smoking status, identify problems concerning smoking cessation, reinforce the benefits of remaining a nonsmoker, and boost the women’s morale and sense of self-efficacy about remaining a nonsmoker. The Charlson Comorbidity index was used to assess current comorbidities. The Standford Dependency Index was used to measure degree of addiction to nicotine. Smokers’ beliefs and knowledge about health benefits of smoking cessation were ascertained from 3 standardized by the National Cancer Institute’s Community Intervention Trial for Smoking Cessation. | 3 |
| **Results** | | | **Conclusion** | | |
| Time smoke-free was significantly greater for the IG than the UG (p=0.038). Point prevalence for nonsmoking at the interviews was somewhat greater for the IG than the UG (p>0.15 at all times). The UG showed a high cessation rate over time. A very small proportion of the women in each group used nicotine replacement therapy (NRT). The logistic regression estimate of the effect of NRT on point prevalence of smoking at 6 months, controlled for treatment group, was significant. | | | The women assigned to the IG were significantly more likely to remain nonsmokers continuously than were those in the UG. Both groups had high nonsmoking point prevalence at 6, 12, 24, and 30 months. Although the protocol included NRT for all eligible IG participants who resumed smoking, few reported using it. Survival analysis indicated that continuous nonsmoking rates after 12 months remained relatively unchanged at 24 and 30 months, supporting the view that 12 months is an adequate follow-up period. This cognitive behavioral intervention resulted in longer average times to resumption of smoking, but long-term success rates were similar between the IG and UG. The study findings confirm that in women with CVD, a relapse to smoking continues to be a serious challenge. | | |

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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 |
| 30. Sloane PD, Hoeffer B, Mitchell CM, et al. Effect of person-centered showering and the towel bath on bathing-associated aggression, agitation, and discomfort in nursing home residents with dementia: A randomized, controlled trial. *Journal of the American Geriatrics Society.* 2004;52(11):1795-1804.[30](#_ENREF_30) | To evaluate the efficacy of two nonpharmacological techniques in reducing agitation, aggression, and discomfort in nursing home residents with dementia. The techniques evaluated were person-centered showering and the towel bath (a person-centered, in-bed bag-bath with no-rinse soap). | The study was set in 15 nursing homes and the sample included residents (N=69) with agitation during bathing and 37 certified nursing assistants (CNAs) who bathed them. | Quantitative  Longitudinal | Recruited facilities were randomly assigned to three groups of five facilities each. One treatment group received the towel bath (in-bed method in which the caregiver uses bath blankets and towels, water and a no-rinse soap, and keeps the resident covered at all times, cleansing the body using gentle massage) during the first 6-week intervention period and person-centered showering (which takes individual preferences into account, such as keeping the resident covered with towels to maintain warmth and using bath products recommended by family and staff) during the second intervention period. The other treatment group received the same interventions in the reverse order. A clinical nurse specialist or psychologist who worked alongside the CNAs 2 days a week for 4 weeks introduced the interventions. Showering (without person-centered training) was used as the control condition. Agitation and aggression were measured using the Care Recipient Behavior Assessment; discomfort was measured using a modification of the Discomfort scale for Dementia of the Alzheimer Type. Secondary measures of effect included  bath duration, bath completeness, skin condition, and skin microbial flora. | 1,3 |
| **Results** | | | **Conclusion** | | |
| All measures of agitation and aggression declined significantly in both treatment groups but not in the control group, with aggressive incidents declining 53% in the person-centered shower group (p<0.001) and 60% in the towel-bath group (p<0.001). Discomfort scores also declined significantly in both intervention groups (p<0.001) but not in the control group. The two interventions did not differ in agitation/aggression reduction, but discomfort was less with the towel bath (p=0.003). Average bath duration increased significantly (by a mean of 3.3 minutes) with person-centered showering but not with the towel bath. Neither intervention resulted in fewer body parts being bathed; both improved skin condition; and neither increased colonization with potentially pathogenic bacteria, corynebacteria, or Candida albicans. | | | This study demonstrates that person-centered showering and the towel bath can markedly reduce aggression and agitation involved with bathing without having adverse effects on the completeness or hygienic results of bathing. The study also demonstrates that person-centered approaches to bathing can result in a reduction in aggression, agitation, and discomfort. However, the fact that none of the study’s techniques completely eliminated agitation and aggression underscores the need to continue to explore additional strategies to enhance caregiving in dementia and to support the work of direct care providers. | | |

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| **Randomized Controlled Trials (N=34)** | | | | | |
| **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 |
| 31. Vallerand AH, Riley-Doucet C, Hasenau SM, et al. Improving cancer pain management by homecare nurses. *Oncology Nursing Forum.* 2004;31(4):809-816.[31](#_ENREF_31) | To demonstrate the effects of a program, directed at homecare nurses, of structured educational interventions on the management of pain and opioid-related side effects in homecare patients with cancer. | Nurses (N=202) caring for patients with cancer were recruited from homecare agencies in the Midwestern region of the U.S. | Quantitative  Longitudinal | Nurses in the intervention group attended two Power Over Pain programs that were developed and presented by the principal investigator to improve the management of pain and side effects in patients with cancer. In addition to the presentation, nurses received a packet of information containing national guidelines for pain management and resources for managing pain and opioid-related side effects. During the next four to six weeks, the nurses used the knowledge they gained from the first program in caring for patients in their caseload. The nurses then returned for the advanced Power Over Pain session which focused on the more complex concepts of dose titration while managing side effects and emphasized communication and advocacy skills used in pain management. This session used role-playing and assertiveness training to enhance the nurses’ role as patient advocates and improve their communication with physicians, patients, and caregivers. The control participants received an explanation of the study and were offered the intervention at the completion of their six months in the trial. Nurses in the control group provided measurements at baseline and one-month post baseline. Instruments used were the Nurses’ Knowledge and Attitudes Survey Regarding Pain, the Barriers Questionnaire, Perception of Control over Pain, and a demographic questionnaire. | 1 |
| **Results** | | | **Conclusion** | | |
| The intervention group had a significantly greater improvement in knowledge and attitudes than the control group (p<0.02), and the scores in the disease progression barriers increased in the intervention group (p=0.01). The basic intervention significantly improved each of the outcomes as expected (p<0.05). The advanced intervention resulted in improvement only in the barriers side-effect cluster. | | | The intervention improved homecare nurses’ knowledge and attitudes, decreased barriers to pain management, and improved their perception of control over pain. Findings from this study have important implications for nursing. Homecare nurses have a great need for pain management education. They often are their patients’ only advocates and sources of information. They must be experts in pain management options and be able to advocate for the use of these options with physicians, pharmacists, patients, and caregivers. Interventions like this one provide nurses with the tools necessary to improve pain care for patients with cancer and others with pain. Although this study was limited to patients with cancer-related pain, the authors believe that the education the nurses received can be applied to all patients and can lead to improved pain management for all patients receiving home care. | | |

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| **Randomized Controlled Trials (N=34)** | | | | | |
| **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 |
| 32. Wells K, Sherbourne C, Schoenbaum M, et al. Five-year impact of quality improvement for depression: Results of a group-level randomized controlled trial. *Archives of General Psychiatry.* 2004;61(4):378-386.[32](#_ENREF_32) | To assess how quality improvement (QI) for depression affects health outcomes, quality of care, and health outcome disparities at 57-month follow-up. | The sample included primary care patients (N=991) who screened positive for depression and who were recruited from primary care practices (N=46) within 6 managed care organizations. 73% of the sample included 451 Latinos and African Americans). | Quantitative  Longitudinal | Within organizations, practices were matched into blocks of 3 clusters based on specialty mix, patient socioeconomic and demographic factors, and having mental health specialists on-site. Practice clusters were randomized within blocks to usual care (mailing of written practice guidelines to medical directors), QI-meds, or QI-therapy by using a random-number generator. The interventions provided practices with training and resources to initiate and monitor QI programs adapted to local goals and resources. Patients and clinicians retained choice of treatment and use of intervention materials; the randomization was to resources for improved care, not mandated treatment. In QI-meds, nurse specialists were trained to support medication adherence through monthly visits or telephone contacts for 6 or 12 months, randomized at the patient level. In QI-therapy, practice therapists were trained to provide individual and group cognitive behavior therapy (CBT), available at the primary care copay for 6 months after enrollment. All patients could have other therapy at their usual copay. In all conditions, patients could have medications, therapy, both, or neither. Outcome measures included Mental Health related quality of life( mental Health Composite Score) , a global mental health scale scored from the Short-Form 12. | 2,3 |
| **Results** | | | **Conclusion** | | |
| Combined QI-meds and QI-therapy, relative to usual care, reduced the percentage of participants with probable disorder at 5 years by 6.6 percentage points (p=0.04). QI-therapy improved health outcomes and reduced unmet need for appropriate care among Latinos and African Americans combined but provided few long-term benefits among whites, reducing outcome disparities related to usual care (p=0.04 for QI-ethnicity interaction for probable depressive disorder). Use of QI-meds also reduced unmet need for appropriate care among African Americans and Latinos, but with weaker statistical significance (p=0.07). Results were qualitatively similar for Latinos versus whites and for African Americans versus whites, but intervention effects were especially strong among African Americans. The greater effect of the interventions on reducing unmet need among minorities, relative to whites, applies primarily among those with baseline disorder (t=3.25, p=0.002), not symptoms only (t=0.76, p=0.45). | | | Quality improvement programs implemented by managed care practices for depressed primary care patients can improve health outcomes and reduce health outcome disparities by markedly improving health outcomes and unmet need for appropriate care among Latinos and African Americans relative to whites. In this study, gains for minority groups led to an overall modest health improvement across participants, without noticeable long-term increases in the use of services. In the long run, QI improved equity, a major goal of medicine, after being effective and cost-effective in the short run. | | |

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| 33. Whittemore R, Melkus GD, Sullivan A, et al. A nurse-coaching intervention for women with type 2 diabetes. *Diabetes Educator.* 2004;30(5):795-804.[33](#_ENREF_33) | To determine the efficacy of a 6-month nurse-coaching intervention that was provided after diabetes education for women with type II diabetes (DMII). | A convenience sample of women (N=53) with DMII was recruited from an outpatient diabetes education center in northeastern Connecticut. | Quantitative  Longitudinal | Women were randomized to the nurse-coaching intervention group plus standard diabetes care or to a control condition of standard diabetes care. Standard care was defined as regular appointments with a primary care provider at approximately 3- to 4-month intervals. All women who were randomized to the control condition were invited to participate in the nurse-coaching intervention at the end of the study. The nurse-coaching intervention was designed to facilitate integration of diabetes self-management into the women’s daily lives, relationships, and self-concept. Nurse-coaching sessions were provided every 2 weeks for 3 sessions, every month for 2 sessions, and, lastly, after 3 months. A total of 6 nurse-coaching sessions were provided over 6 months, with 5 of the 6 sessions provided in the first 3 months. Two brief phone calls were provided between the fifth and sixth nurse coaching sessions. | 2,3 |
| **Results** | | | **Conclusion** | | |
| Women who participated in the nurse-coaching intervention demonstrated significantly better diet self-management (F=4.1, p=0.02), psychosocial adaptation (less psychosocial distress [F=7.5, p<0.01] and better integration [F=3.9, p<0.03]), with a trend toward better exercise self-management (F=2.1, p=0.13), and improved body mass index (BMI) (F=2.0, p=0.15). The A1C levels decreased in both groups at 3 months, however, the difference between groups was not significant. Participants in the nurse-coaching intervention reported significantly greater treatment satisfaction than women in the control group at 3 months (t=7.2, p<0.01) and 6 months (t=4.9, p<0.01). Attendance at nurse-coaching sessions was 96%. | | | This nurse-coaching intervention demonstrates promise as a means of improving self-management and psychosocial outcomes in women with type 2 diabetes. In terms of treatment maintenance, this intervention demonstrated treatment decay with respect to self-management and physiologic outcomes from 3 to 6 months, during which time the intervention was less intensive. Maintenance of behavior change associated with weight loss has demonstrated the need for long-term and regular follow-up for at least a1-year duration. It is likely that long-term follow-up is also indicated for the maintenance of self-management behaviors in diabetes care and the subsequent improvement in physiologic outcomes. | | |

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| 34. Wyatt GK, Donze LF, Beckrow KC. Efficacy of an in-home nursing intervention following short-stay breast cancer surgery. *Research in Nursing and Health.* 2004;27(5):322-331.[34](#_ENREF_34) | To test the efficacy of a sub-acute home nursing intervention following short-stay surgery for breast cancer. | Women (N=240) with breast cancer were recruited from 15 surgical practices in four Midwestern communities. | Quantitative  Qualitative  Longitudinal | Intervention participants (Group A) received a targeted nursing care protocol in their homes for the first 14 post-operative days. Group B participants received surgeon-ordered agency home nursing care. Group C participants received no post-surgical home nursing care. The agency home nursing care provided to Group B was not delivered by nurses with specialized training in post-operative breast surgery care and involved a more generalist approach. The intervention protocol (Group A) consisted of at least two home visits and two phone calls by a registered nurse during the 2 weeks immediately following surgery. Each patient also had 24-hour access to her nurse by pager. The nurse/patient interactions were designed to facilitate self-care and empowerment, with an effort to minimize dependence upon the nurse. All Group A patients were taught not only how to care for themselves physically, but how best to be in-tune with their emotional health, in an attempt to have the fullest recovery possible. Outcomes included were included surgical recovery/self-care knowledge,  functional status (adapted version of the Rand Health Insurance Experiment and Medical Outcomes Research), anxiety(State Trait Anxiety Inventory), quality of life (Functional Assessment of Cancer Therapy=Breast) and health service utilization(Health Service Utilization instrument). | 1,2,3,4,5 |
| **Results** | | | **Conclusion** | | |
| There were no significant group differences on postoperative functional status, anxiety, quality-of-life (QOL), further surgeries, or complications. Intervention participants (Group A) were more likely to receive instruction on surgical self-care (p<0.001) and report improved social/family QOL (p<0.05), with fewer home visits (p<0.001). There were no significant differences in reported utilization of health services. All three groups reported increased limitation in physical functioning from pre-surgery to 4 weeks post-surgery. There was also a significant decrease in anxiety among all three groups from baseline to 4 weeks after surgery. | | | Study findings suggest that a targeted nursing protocol may, at reasonable cost, improve QOL and enhance health-related knowledge. Regardless of receiving home nursing care or no home care, all women reported limited functional status at 4 weeks after surgery. These functional limitations suggest the need for post-surgical intervention to improve functioning and physical recovery. The nursing protocol depicted in this study represents a change from typical agency nursing care. It empowers women to provide self-care for physical and psychological needs, rather than encouraging dependency upon the nurse, who is reimbursed per patient visit in standard nursing care. Thus, the protocol is implemented in a cost-effective manner. The authors suggest that their research could be translated into policy for discharge planning. | | |

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| **Quasi-Experimental Studies (N=55)** | | | | | |
| **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 |
| 35. Baer CA, Williams CM, Vickers L, et al. A pilot study of specialized nursing care for home health patients. *Journal of Telemedicine and Telecare.* 2004;10(6):342-345.[35](#_ENREF_35) | To assess the feasibility of remote (Web-based) consultations for leg wounds. | The sample was comprised of patients (N=34) with leg wounds who were referred to homecare. | Quantitative  Cross-sectional | This pilot study was designed to assess the  feasibility of remote consultations for leg wounds using a Web-based communications system, the Home Telehealth Consultation System (HTCS). The study evaluated the agreement between on-site and remote wound assessment and treatment.  Patients were seen in their home by a homecare nurse. Leg wounds were photographed using digital imaging. The homecare nurse assessed the wounds and made recommendations for treatment. The photographs were sent electronically along with information about the leg wounds to an enterostomal therapy nurse (ETN) who also devised a treatment plan. Researchers compared the assessment and management plan made by the home care nurse with the assessment and management plan made remotely by the ETN. | 1 |
| **Results** | | | **Conclusion** | | |
| The overall agreement between the home care nurse and the remotely located ETN in assessing wounds was good (kappa coefficients 0.41 to 0.71). With regard to the type of ulcer, the home care nurses and the ETN agreed in 85% of the cases. There was less agreement on the stage and status of the most problematic ulcer (79% and 71%, respectively). Agreement over the treatment of wounds was variable (kappa coefficients -0.75 to 0.81). | | | The study demonstrated the feasibility of remote consultation by an ETN for home care patients with leg wounds. Overall, there was relatively good agreement between the home care nurses and the remote ETN in wound assessment. However, the home care nurses and the ETN had somewhat different opinions about treatment. The authors suggest that some of the variation in recommended wound treatment was due to differences between nurses and some, perhaps, to the effect of telemedicine. The results of the pilot study suggest that use of the HTCS can improve the quality of care for patients with leg wounds. | | |

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| 36. Berenholtz SM, Milanovich S, Faircloth A, et al. Improving care for the ventilated patient. *Joint Commission journal on quality and safety.* 2004;30(4):195-204.[36](#_ENREF_36) | To ensure that for 90% of ventilator days, patients received processes associated with improved outcomes, including semirecumbent positioning, daily interruption of sedative-drug infusions, peptic ulcer disease prophylaxis, and deep venous thrombosis prophylaxis. | The sample was comprised of patients (N=54) ventilated in the intensive care unit (ICU) and ICU nurses (N=16). | Quantitative  Qualitative  Longitudinal | The improvement model included three interventions: 1) administering a questionnaire to identify barriers to compliance with the four care processes, 2) implementing an educational intervention, and 3) implementing a checklist to be completed daily during ICU rounds to ask providers whether patients were receiving these therapies. To identify the barriers to compliance for the four care processes, a questionnaire was distributed to the full-time nursing staff designed to determine if nursing staff was aware of the evidence supporting these therapies. An educational sheet was distributed to the ICU nursing staff which provided a summary of the evidence to support each of the four care processes. An ICU attending physician and nursing educators provided in-services to educate nursing staff. A standardized checklist was developed to outline patients’ daily plans of care. The checklist was completed on all patients by the ICU resident or nurse practitioner during rounds, signed by the fellow or attending physician, and handed to the patient’s nurse before moving on to the next patient. | 3,5 |
| **Results** | | | **Conclusion** | | |
| Overall, 80% of nurses did not know there was evidence to support at least one of the four therapies. Many of the ICU nurses attending the in-service trainings identified barriers to compliance, including lack of physician order, lack of reminder system, patient refusal (for semi-recumbent positioning), and disagreement among physicians. All the ICU nurses attending agreed that the processes of care were important and should be provided to patients on mechanical ventilation. The ICU nurses indicated that they found the checklist helpful and that the plan of care for the day was clearer when the checklist was used. During the study period (March 4–April 29, 2002), the percentage of ventilator days on which patients received all four care processes increased from 30% to 96% (p<0.001). This improvement in performance was sustained. The authors estimated that the improvement in compliance may have prevented per year 27 deaths and 754 excess hospital and ICU days, yielding $825,000 in savings per year in the ICU. | | | Evidence-based therapies for mechanically ventilated patients can reduce morbidity, mortality, and costs of care. This improvement model included interventions that resulted in significant improvement in the use of evidence-based therapies for patients receiving mechanical ventilation. One notable finding was the lack of provider awareness of the evidence. The improvement model can be broadly applied to improve the quality and safety of care provided and can minimize the gap between best evidence and current practice for patients receiving mechanical ventilation. | | |

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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 |
| 37. Berg GD, Wadhwa S, Johnson AE. A matched-cohort study of health services utilization and financial outcomes for a heart failure disease-management program in elderly patients. *Journal of the American Geriatrics Society.* 2004;52(10):1655-1661.[37](#_ENREF_37) | To investigate the utilization and financial outcomes of a telephonic nursing disease-management program for elderly patients with heart failure. | This matched cohort study included Medicare+Choice recipients aged 65 and older (N=533) with heart failure matched to non-participants. | Quantitative  Longitudinal  Matched Control Analysis | This disease-management heart failure program employed a structured, evidence-based, telephonic nursing intervention designed to provide patient education, counseling, and monitoring services. A self-management intervention plan was developed for participants that included risk stratification; scheduled nurse education sessions; 24-hour access to nurse counseling and symptom advice; printed action plans, workbooks, and assessments; medication and vaccination reminders; and physician alerts about symptoms and signs of decompensation, as well as notification to physicians of gaps between patient-reported practice and guideline recommendations. Nurses conducted telephonic assessments at intake and at 6 and 12 months to assess participants’ knowledge, behavior, and health status related to their heart failure condition. The improvement in patients’ knowledge, behavior, and health status was expected to lead to changes in medical service utilization. After a period of 12 months, a matched-cohort study was conducted to evaluate group differences on selected clinical and healthcare utilization outcomes. The control group received usual care from their providers. | 3,5 |
| **Results** | | | **Conclusion** | | |
| There was a pronounced, significant difference between the groups in overall inpatient admissions (23% fewer for the intervention group), inpatient bed days (26% fewer), inpatient admissions in which heart failure (HF) was identified as the primary diagnosis (44% fewer), HF inpatient bed days (34%fewer), and the proportion of people with a readmission to the hospital within 30 days of an admission (70% fewer); the intervention group had 4.5% more physician office visits, which was non-significant. There were no significant differences between the two groups for most recommended drug classes. Influenza and pneumococcal vaccination rates increased significantly (29% and 59%, respectively). Claims costs were $1,792 per person lower in the intervention group than in the control group (inclusive of intervention costs), and the return on investment was calculated to be 2.31. | | | The authors conclude that this study of a commercial heart failure disease-management intervention in the elderly demonstrated significant reductions in medical services, resulting in 10% lower cost of care. The control group was extremely well matched on a wide set of variables, and although the study design is subject to selection bias, the approach addresses temporal bias and provides a methodology for researchers to evaluate private healthcare service innovations without a randomized trial design. | | |

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| 38. Berg J, Tichacek MJ, Theodorakis R. Evaluation of an educational program for adolescents with asthma. *The Journal of School Nursing* 2004;20(1):29-35.[38](#_ENREF_38) | To evaluate an adolescent asthma education program, the Power Breathing Program, together with individual coaching sessions in terms of general asthma knowledge and health status. | The study took place with high school students (N=13) at a school in a working-class, suburban neighborhood. Adolescent participants were predominantly female (69%) and African American (46%), | Quantitative  Qualitative  Longitudinal | One intervention in the study was the Power Breathing Program, developed in 1997 by Renee Theodorakis for the Asthma and Allergy Foundation of America. This program consisted of three 90-minute sessions during which students met as a group and were instructed on various aspects of asthma, triggering symptoms, and causes. A short video began each Power Breathing Program session, which reinforced key points of the program and used adolescent actors rather than adults or small children. Following the Power Breathing Program, each student met individually with an assigned asthma coach three times to discuss specific issues regarding the student’s ability to manage asthma. The purpose of the coaching component was to help each participant tailor the educational program to his or her own situation and needs. To assess health status for children the authors used the Children’s Health Survey for Asthma, Teen Form (CHSA). | 2,3 |
| **Results** | | | **Conclusion** | | |
| All 13 participants of the program evaluated the Power Breathing Program as helpful. Seven (54%) participants reported that knowledge gained from the program resulted in better avoidance of asthma triggers and decreased frequency of episodes. The Child Health Survey for Asthma (CHSA) yields particular domain-scale scores as well as an overall score. There were no significant differences in scores from baseline to post-program and post–coaching intervention. Items causing the most difficulty for the participants in the Physical Activity scale were strenuous activity (53.8%), sports or running outside (53.8%), and helping with housework (46.2%). In the domain of physical health, 61% of participants indicated they took asthma medication every day; 30.8% took medication as needed for symptoms; and only 25% took medication as recommended all the time. Some of the participants admitted that they never took medication as recommended (16.7%). The lowest scores on the CHSA were in the Emotional Health domain. Participants acknowledged difficulty regarding being frustrated in relying on treatment (50%), being frustrated in limiting activity (53.8%), and being upset about having asthma and needing asthma treatments (46.2%). The majority of the adolescents acknowledged feeling frustrated that others did not understand what it was like to have asthma (76.9%). | | | The Power Breathing Program and coaching sessions show promise as an asthma educational program particularly tailored to adolescents. The authors note that school nurses are in an excellent position to deliver the Power Breathing Program and to provide individual coaching sessions to students with asthma. They suggest that the Power Breathing Program and the coaching sessions need further evaluation and consideration as self-management tools for the high-risk adolescent population. | | |

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| 39. Blanzola C, Lindeman R, King ML. Nurse internship pathway to clinical comfort, confidence, and competency. *Journal for Nurses in Staff Development: JNSD* 2004; 20(1):27-37.[39](#_ENREF_39) | To report the outcomes of a nurse internship program initiated at a U.S. Navy hospital designed to increase new graduate nurses' clinical competence, confidence, and comfort. | The sample was comprised of nurses (N=18) in a single hospital. | Quantitative  Qualitative  Longitudinal | The Nursing Internship Program (NIP) is a 16-week, competency-based orientation program which uses multimedia, such as video and audio tapes, and interactive role playing to assess the knowledge and skills of nurses in three spheres: critical thinking, interpersonal, and technical. The NIP is designed to orient recent graduates and RNs with minimal clinical experience. Interns participate in roundtable discussions that are held at least bimonthly. During the program, interns typically followed an 8-hour day shift, which was in contrast to hospital staff’s 12-hour schedule. The 8-hour schedule was changed to 12-hour including weekends to provide continuity with preceptors and patient care. Pediatric and obstetrical rotations were changed from two 1-month rotations to one 30-day rotation on both units. Specialty rotations were decreased to 1 week with the interns choosing the area they wanted. The program’s goal is to provide a pathway that fosters clinical comfort and the development of confidence and competence. Control group participants attended the traditional orientation program. | 1 |
| **Results** | | | **Conclusion** | | |
| Clinical nurse leaders and peers evaluated study participants using organizational and core competencies after the completion of each 30-day rotation. Using a quasi-experimental design, the experimental group scored significantly higher on organizational core competencies than the control group. Significant differences were found between mean scores for the pilot group on self-evaluation at baseline and self-evaluation at program completion as well as post unit assignment, suggesting increased clinical comfort and confidence with their roles. Significant differences were noted between the mean scores for peer evaluations of the control group at 6 months post unit assignment and the pilot group at the end of the internship program. Significant differences were also noted when comparing the control group’s peer evaluations at 6 months post unit assignment verses the pilot group’s peer evaluations during this same interval. The control group’s mean scores were significantly lower than the pilot group’s scores for both of these intervals. | | | The authors’ hypothesis that new nurses who participated in the NIP would score higher on organizational core competencies than new nurses who did not participate in such a program was supported. The pilot group of nurse interns had significantly higher mean self and evaluators’ scores on core competencies than the control group of nurses. Qualitative data revealed that nurse interns saw themselves as integral team players ready to take on more complex assignments. Authors suggest that a program like the NIP that improves clinical competence, confidence, and comfort is likely to improve new nurses’ perceptions of their working environment. | | |

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| 40. Bogdan GM, Green JL, Swanson D, et al. Evaluating patient compliance with nurse advice line recommendations and the impact on healthcare costs. *American Journal of Managed Care.* 2004;10(8):534-542.[40](#_ENREF_40) | To explore the effect of telephone triage and advice lines in uninsured and managed care populations served by a safety net system and to document the relationship between the patient's initial plan for healthcare, the nurse recommendation, and the patient's subsequent healthcare action. | Of 1,538 calls to a nurse advice line in a 28-day period, 710 (46%) callers were selected to be surveyed. Of those, 278 (39%) were surveyed by telephone within 7 days of their call to assess patient compliance with recommendations, the patient's actual healthcare actions, and their satisfaction with the service. | Quantitative  Cross-Sectional | Within 7 days of their NurseLine calls, randomly selected callers were contacted by a trained research assistant who initiated telephone surveys using a standardized 5-item questionnaire. The questionnaire assessed the caller’s: 1) subsequent action for care, 2) satisfaction with the service, 3) satisfaction with the recommendations, 4) perception of service wait time, and 5) intention to use the service again. The relationship between caller's original plan, the NurseLine recommendations, and caller's subsequent action was examined. Plans, recommendations, and actions were categorized into 3 levels of care: home care, clinic visit, and hospital visit. This survey reveals the pattern of behavior from the caller's original plan to nurse recommendation to subsequent action. The system savings potential of the service was calculated by extending the data regarding alterations in healthcare decisions from the sample to all users. Average charges for home care ($0.00), a clinic visit ($137.08), and a hospital emergency department visit ($969.01) in our system were used to estimate cost savings associated with changes from the patient's original healthcare plan to their subsequent action as a result of nurse advice line recommendations. | 2,5 |
| **Results** | | | **Conclusion** | | |
| Patients' reported actions were classified as either: 1) home care (46%), 2) clinic visit (27%), or 3) hospital visit (27%). The NurseLine recommendation was for a lower intensity of care in 116 cases (44%) and for a higher intensity of care in 49 cases (18%). Seventy percent of patients complied with nurse advice line recommendations. Compliance with recommendations was highest for home care (86/95 = 91%), followed by hospital visit (40/53 = 75%) and clinic visit (61/118 = 52%). Most patient actions (68%) differed from their original healthcare plan, with many (46%) choosing a lower intensity of care. Changes from patients' original healthcare plans had a potential annual net savings of $322,249. The majority of respondents (89%) rated their overall satisfaction with the NurseLine service at 7 or higher. Similarly, 91% rated their overall satisfaction with the nurse recommendation at 7 or higher. Most respondents (98%) said they would use the service again. | | | The simple act of calling a nurse triage and advice line corresponds with a change in the reported actions of uninsured and managed care patients and a potential reduction in costs to the safety net system providing their healthcare. While this study supports the effectiveness of phone triage in getting a patient to the right venue of care, it does have limitations. Measuring patients' actual compliance and obtaining complete financial data for what costs are incurred in their treatment are problematic. Sound compliance measurement requires accurate patient recollections of nurse recommendations, well-defined levels of healthcare, ability to survey all service users, and ability to validate all patient self-reported actions. The latter also impacts the determination of actual-dollar savings. Nonetheless, this study suggests that nurse triage and advice services, used by populations served by a safety net institution, provide a new low-cost venue for access to care. | | |

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| 41. Bohnenkamp SK, McDonald P, Lopez AM, et al. Traditional versus telenursing outpatient management of patients with cancer with new ostomies. *Oncology Nursing Forum.* 2004;31(5):1005-1010.[41](#_ENREF_41) | To measure the impact of telenursing on patients discharged with ostomies resulting from cancer treatment. | The study focused on a convenience sample of subjects (N=28) with ostomies resulting from treatment for a cancer diagnosis who had received surgery and were discharged from a Southwestern university teaching hospital. | Quantitative  Longitudinal | After hospital discharge, patients were assigned to one of two groups: a) home health visits only or b) home health plus telenursing contact. The home health group received home health visitation by a nurse who continued evaluation and education according to current management protocols. The enterostomal therapy (ET) nurse was available for consultation as needed. The telenursing group received twice weekly contacts by an ostomy CNS until patients or family members were competent with the care of the ostomy. All patients in the telenursing management group were supplied with a home health 8" x 8" monitor and equipment for connecting to a television. Patients in the home health plus telenursing group had home health nursing visits as per routine plus twice-weekly telenursing visits. Researchers recorded the number of home health and telenursing contacts, dates when ostomy self-care needs were met, supplies used, and distance traveled. Patients completed a satisfaction survey and Maklebusts Ostomy Adjustment Scale. | 2,5 |
| **Results** | | | **Conclusion** | | |
| Ninety-three percent of patients were satisfied with the telenursing visit, whereas 81% were satisfied with the home health visit. The telenursing group was more satisfied and comfortable with the ostomy care compared to the home health group. The home health group averaged one more home health visit per patient. Overall costs for both types of visits were about equal. The home health group used an average of four more pouches per patient, with increased cost of $52 per patient. Telenursing patients believed that nurses had increased understanding of their problems, and they were more comfortable with what nurses told them about ostomy. One hundred percent of the subjects agreed that the telenursing visit made care more accessible. Eighty-seven percent said they would prefer a telenursing visit rather than waiting for a face-to-face visit. Seventy percent agreed that they would prefer a face-to-face visit even though 85% agreed that the telenursing visit was as good as a face-to-face visit. Fifteen percent of the telenursing subjects said that the camera and new technology embarrassed them. | | | The telenursing group was more satisfied with their post-discharge care. The telenursing group required fewer pouch changes, which reduced costs. The subjects in the telenursing group believed that the ostomy nurse understood their problems more than the home health nurse did. The subjects in the telenursing group were more comfortable with information provided by the ostomy nurse. The telenursing group received care from nurse specialists who were able to individualize patient care, decrease cost, and improve patient satisfaction. | | |

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| **Quasi-Experimental Studies (N=55)** | | | | | |
| **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 |
| 42. Calvert Jr JF, Goldenberg PC, Schock C. Chronic hepatitis C infection in a rural medicaid HMO. *Journal of Rural Health.* 2004;21(1):74-78.[42](#_ENREF_42) | To describe the clinical features of patients with Chronic Hepatitis C Infection (CHCI) in a rural Medicaid-covered population and to describe a method developed for treating CHCI in an underserved rural community. | Patients (N=110) with a positive hepatitis C serology were identified. Of these, 40 patients were recommended by the committee for treatment; analysis was completed on 21 patients. The setting was Cascades Comprehensive Care, a managed care company developed by physicians in Oregon, to provide care to patients enrolled in the Oregon Health Plan, the state’s Medicaid managed care program. | Quantitative  Qualitative  Cross-Sectional | A locally based multidisciplinary hepatitis committee was formed to develop a management protocol and a process for selecting patients for treatment. Day-to-day treatment was provided by a nurse under the supervision of the committee. The members of the committee were a local family physician, a local pediatrician, the only gastroenterologist in the region, the part-time medical director of CCC, a pharmacist, and a nurse case manager. The committee’s purpose was to develop protocols for evaluation and treatment of persons with CHCI, to decide which patients would be offered treatment, and to monitor treatment when this option was accepted by a patient. | 2,3,5 |
| **Results** | | | **Conclusion** | | |
| One hundred forty-three adults with CHCI were identified by their primary care physicians. The committee has recommended treatment for 40 patients to date. Treatment with pegylated interferon and ribavirin was completed on 21 persons, 11 (52%) of whom had a virologic cure. Researchers attempted to contact the 21 patients who had completed treatment to ask them about satisfaction. Completed telephone surveys were obtained from 15 (71%). All patients treated by the nurse manager indicated that they preferred that method to being treated by their physicians only. All patients indicated that they felt they were treated with respect. | | | This disease management approach has allowed the committee to select a group of patients with CHCI who are well suited to treatment and to provide optimal support to patients during treatment and consistent care that is relatively cost effective. This model may prove useful because of the high prevalence of this disease among underserved populations and the difficulty and expense of administering treatment for hepatitis C. | | |

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| **Quasi-Experimental Studies (N=55)** | | | | | |
| **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 |
| 43. DeJong SR, Veltman RH. The effectiveness of a CNS-led community-based COPD screening and intervention program. *Clinical nurse specialist CNS.* 2004;18(2):72-79.[43](#_ENREF_43) | To evaluate the effectiveness of a screening program in identifying undiagnosed individuals with chronic obstructive pulmonary disease (COPD). | Subjects (N*=*243) were recruited via letter, newspaper, and physician referral. | Quantitative  Longitudinal | The convenience sample was solicited via: 1) a direct mailing to 1500 individuals within a large primary care clinic system who were coded as being a current smoker or having a history of smoking, 2) an article in the local newspaper, and 3) posters placed in 6 physician offices and 1 hospital. The recruitment of subjects was particularly aimed at current and past smokers. Individuals aged 40 to 60 years were targeted in an attempt to identify those who had mild obstruction and were likely still asymptomatic. A clinical nurse specialist (CNS) led the screening program. It was held on 5 different days and in 4 different healthcare clinics throughout the community. The screening program consisted of 4 parts, including: 1) a written questionnaire; 2) a spirometry test performed by a trained respiratory therapist; 3) individualized smoking cessation counseling; and 4) a follow-up survey conducted either via telephone or mail. | 3,5 |
| **Results** | | | **Conclusion** | | |
| Results indicated that 209 (86%) of participants were at risk for developing COPD as evidenced by current or past smoking status. Many subjects stated they had symptoms such as cough (43%), shortness of breath (54%), and/or bronchitis symptoms (23%). A family history of COPD was present in 69 (28%) of the subjects. This screening program identified 43 individuals with COPD (18% of those who attended the screening) who had likely not previously been identified as having obstruction. Mild to moderate stage obstructive disease was found in 55 subjects (23%). Of 61 subjects contacted after the screening, 29 smokers (47%) indicated they had stopped smoking, were in the process of quitting, or were seriously considering quitting. | | | This community-based COPD screening was successful in reaching individuals who are by definition at risk for developing COPD, including smokers and individuals with symptoms of obstruction. This study was successful in identifying undiagnosed obstruction. Results support the use of a community-screening program to identify and help modify risk factors for COPD. The authors suggest that the CNS has a focus on the entire platform of care including the preventive phase, early identification of the problem, hospitalization, and the rehabilitation phase. Therefore, they assert that CNS possesses the knowledge and expertise to identify the need in the community, understand the overall problem, and identify strategies to implement a project like the COPD screening. | | |

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| **Quasi-Experimental Studies (N=55)** | | | | | |
| **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 |
| 44. Denison B. Touch the pain away: new research on therapeutic touch and persons with fibromyalgia syndrome. *Holistic nursing practice.* 2004;18(3):142-151[44](#_ENREF_44) | To pilot test the effectiveness of 6 therapeutic touch treatments on the experience of pain and quality of life for persons with fibromyalgia syndrome (FS). | A convenience sampling of people with FS (N=15) agreed to participate in the study. | Quantitative  Qualitative  Longitudinal | The control group activity consisted of quietly sitting and listening to a different information tape each week that related to complementary therapies. The intervention group received weekly touch therapy (TT) sessions. Both groups received 6 consecutive weekly treatments (intervention group) or audiotapes via headphones (control group). The TT treatments were performed with subjects in a sitting position and were provided by 2 qualified TT practitioners (QTTPs). The intention of the TT session was to reestablish a symmetrical and rhythmical flow of energy throughout the subjects’ energy field to promote comfort and relaxation. Both the intervention group and the control group rested 5 minutes in a reclining position before post measurements were completed. | 3,4 |
| **Results** | | | **Conclusion** | | |
| Subjects who received therapeutic touch had a statistically significant decrease in pain for each pre-therapeutic to post-therapeutic touch treatment, as well as significant improvement in quality of life from week one to week six. No significant differences in intervention groups. Statistically significant increases in cutaneous skin temperature within the intervention group when pre-treatment was compared to post-treatment were found in the mean front body hotspot for the first through the fourth treatments. The difference was in the same direction for the fifth and sixth treatment, the later approached significance. There were not significant changes in the total number of hotspots when pre- to post-changes within the intervention group were compared for each weekly paired data set. | | | Findings in this study partially supported that touch therapy may be an effective treatment for relieving pain and improving quality of life in this specific population of persons with FS. | | |

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| **Quasi-Experimental Studies (N=55)** | | | | | |
| **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. Drake D, Falzer P, Xistris D, et al. Physical fitness training: Outcomes for adult oncology patients. *Clinical Nursing Research.* 2004;13(3):245-264.[45](#_ENREF_45) | To determine if routine participation in exercise could improve physical fitness for adults recently completing months of cancer treatment. | Descriptive information was organized from a chart review and reported for the adult oncology hematology patients (N=45) who had completed pre- and post-fitness testing at a private fitness studio. | Quantitative  Longitudinal  Pre-Post | The 8-week program provided a safe and controlled environment for cancer patients to participate in a fitness program and was not designed as a clinical trial. To conduct the study of physical fitness outcomes, an oncology nurse scientist developed a plan to organize study variables and analyze pre and post fitness outcomes of participants. The fitness program was designed and coordinated by an advanced practice oncology nurse at a metropolitan community cancer center and an exercise physiologist at a privately owned fitness studio. | 3 |
| **Results** | | | **Conclusion** | | |
| Significant improvements in fitness outcomes were observed in this study of 45 hematology and oncology patients who completed an 8-week fitness program. Significant improvements in measures of muscular endurance, muscular strength, and flexibility were especially impressive. Measures of BMI, waist-hip ratio, resting heart rate, systolic blood pressure, and diastolic blood pressure failed to show a significant change between the pre-test and post-test. | | | Prescription of exercise for cancer patients to improve fitness was supported in this pilot study. The authors suggest that studies with larger sample size and specific groupings are needed to more clearly understand the risks and benefits of exercise programs for people diagnosed with cancer and stress the fact that the individuality of cancer survivors’ health status precludes a one-size-fits-all recommendation for fitness. Until more standardized guidelines are available, an individualized fitness program, coordinated with the guidance of cancer health care professionals, exercise physiologists, and fitness trainers, is an important option for people diagnosed with cancer. | | |

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| **Quasi-Experimental Studies (N=55)** | | | | | |
| **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 |
| 46. Dries DJ, McGonigal MD, Malian MS, et al. Protocol-driven ventilator weaning reduces use of mechanical ventilation, rate of early reintubation, and ventilator-associated pneumonia. *The Journal of trauma.* 2004;56(5):943-951; discussion 951-952.[46](#_ENREF_46) | To describe the effect of protocol-driven ventilator weaning on ventilator use, ventilator-associated pneumonia (VAP), and intensive care unit (ICU) length of stay (LOS) in a multidisciplinary surgical ICU. | Data were gathered from a surgical ICU from April to September 2000 (N=314) and from April to September 2002 (N=336) before and after introduction of nurse/therapist-driven weaning. | Quantitative  Longitudinal | The initial portion of the weaning protocol was a standard sedation assessment using a sedation scale recorded on the daily flow sheet. Patients were then evaluated for propriety of a weaning trial. Evaluation of patients for propriety of weaning took place on an ongoing basis and was driven by the nursing staff and unit-based respiratory care practitioners. Patients meeting the initial screening criteria were placed on a weaning trial, which involves placing the patient on T-tube support or, as was the case in the majority of patients, initiating continuous positive airway pressure (5 cm H2O) with a limited amount of pressure support ventilation (5 cm H2O). Patients were followed closely with specific recording of vital signs and noninvasive respiratory parameters. At the conclusion of weaning assessment, extubation assessment was carried out. Patients deemed appropriate candidates for extubation were discussed with physician staff based in the surgical intensive care unit, and decisions regarding extubation were made. | 3,5 |
| **Results** | | | **Conclusion** | | |
| One result of weaning protocol implementation was a reduction in the mean number of days of mechanical ventilation and in the use ratio for mechanical ventilation from 2000 to 2002. The use ratio (ventilator days/ICU days) fell from 0.47 to 0.33. With implementation of the weaning and extubation protocol described, the incidence of reintubation fell from 43 of 314 patients in 2000 to 25 of 336 patients in 2002 (p=0.013). From these patients, 17 cases of ventilator-associated pneumonia occurred in 2000 and 5 in 2002. ICU discharge was frequently delayed because of the need for subsequent respiratory care. | | | This study confirms the benefit of ventilator weaning strategies driven by nurses and respiratory therapists for surgical patients of various kinds to reduce use of mechanical ventilation as well as incidences of ventilator-associated pneumonia and unplanned reintubation. Patients sustaining injury and receiving general surgical procedures appear to derive the greatest benefit from protocol implementation. | | |

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| **Quasi-Experimental Studies (N=55)** | | | | | |
| **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 |
| 47. Erdek MA, Pronovost PJ. Improving assessment and treatment of pain in the critically ill. *International Journal for Quality in Health Care.* 2004;16(1):59-64.[47](#_ENREF_47) | To describe the efforts to improve pain assessment and treatment in patients in a surgical intensive care unit at an academic medical center. | Patients\* were studied in two surgical ICUs at the Johns Hopkins Hospital. One ICU was a 15-bed, general surgery/trauma ICU that cares for vascular, transplant, and trauma patients, while the second was an 11-bed oncologic surgery ICU that cares for abdominal surgery patients.  *\*The number of patients was not indicated in the study.* | Quantitative  Longitudinal  Pre-Post | This project was designed to reduce patients’ pain in the ICU. Researchers planned to improve pain documentation and then pain management. For improving pain documentation, they measured the percentage of patient-nursing intervals per week where pain was measured using a modified visual analog scale (VAS). This phase was followed by four “plan–do–study–act” (PDSA) cycles. The first of these cycles involved educating staff regarding the importance of pain and how to measure pain using a modified VAS scale. In the second cycle, modified VAS scales were provided at patients’ bedsides. During the third cycle, residents were tasked with documenting and reporting patients’ pain scores for the last 24 hours. In the final cycle, researchers sought to create an expectation that a pain score greater than 3/10 is a defect. | 1,3 |
| **Results** | | | **Conclusion** | | |
| During the first week of the study period, 71 of 171 (42%) nursing intervals were not measured on a standard 10-point modified VAS or behavioral scale, but included verbal descriptions of pain. By the end of the 5-week study period, more than 70% of patients had their pain scored using a modified VAS. Only 59% of patients were recorded to have VAS scores for pain ≤3 in the initial stages. By the end of the study period, this number had increased to well over 90%. Baseline assessment of pain was 42% and the baseline treatment was 59%. After 5 weeks, pain assessment improved to 71% and pain management improved to 97%. | | | This intervention significantly improved both pain assessment and treatment without increasing adverse events related to pain management. Patients experiencing pain can be viewed as a preventable adverse event. | | |

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| **Quasi-Experimental Studies (N=55)** | | | | | |
| **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 |
| 48. Goldberg PA, Sakharova OV, Barrett PW, et al. Improving glycemic control in the cardiothoracic intensive care unit: Clinical experience in two hospital settings. *Journal of cardiothoracic and vascular anesthesia.* 2004;18(6):690-697.[48](#_ENREF_48) | To present an experience with a safe, effective, nurse-driven intensive insulin infusion protocol (IIP), which was implemented simultaneously in 2 cardiothoracic intensive care units (CTICUs). | At the time of data analysis, the IIP had been used 137 times  in 118 patients in an academic tertiary referral center and a community teaching hospital. | Quantitative  Cross-Sectional | A standardized, intensive IIP was used for all patients admitted to both CTICUs. In designing the protocol, the authors focused on the 3 main data elements used by experienced endocrinologists to adjust intravenous (IV) insulin infusions: (1) the current blood glucose (BG) value, (2) the previous BG value, and (3) the current insulin infusion rate. The target BG range (100 to 139 mg/dL) was chosen specifically to maximize clinical benefit while minimizing risk. After a week-long series of 45-minute in-service training sessions, the IIP was initiated in the first CTICU in January 2003 and in the second CTICU 1 month later. BG levels, insulin doses, and clinical interventions were collected from the active hospital chart and CTICU nursing records. Each day, charts were reviewed for possible adverse events related to the IIP. All patients were followed until discharge from the CTICU. | 3 |
| **Results** | | | **Conclusion** | | |
| The authors’ intensive IIP was successful in improving BG levels in 2 CTICUs, with rare and clinically insignificant hypoglycemia. For the 137 total insulin infusions used, the median infusion duration was 16 hours (range, 5-111 hours). The median time required to reach target BG levels (100-139 mg/dL) was 5 hours. Once BG levels decreased below 140 mg/dL, 58% of 2,242 subsequent hourly BG values fell within the narrow target range, 73% within a "clinically desirable" range of 80 to 139 mg/dL, and 94% within a "clinically acceptable" range of 80 to 199 mg/dL. Hypoglycemia was extremely rare. Only 5 (0.2%) BG values were less than 60 mg/dL, with no associated adverse clinical events. In all 5 instances, hypoglycemia was rapidly corrected using IV dextrose. No clinically significant adverse events could be attributed to low BG levels. When the IIP was halted, BG levels rebounded to mildly hyperglycemic levels. | | | The authors have described the successful implementation of a safe, effective, nurse-implemented IIP in 2 CTICUs. The use of this protocol permits improved glycemic control in patients undergoing cardiothoracic surgery and produces no clinically significant hypoglycemia. The authors believe that the routine use of the IIP should help to improve clinical outcomes in CTICU 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 |
| 49. Goldberg PA, Siegel MD, Sherwin RS, et al. Implementation of a Safe and Effective Insulin Infusion Protocol in a Medical Intensive Care Unit. *Diabetes Care.* 2004;27(2):461-467.[49](#_ENREF_49) | To describe the early experience with a safe, effective, nurse-implemented insulin infusion protocol (IIP) that provides detailed insulin dosing instructions and requires minimal physician input. | The IIP was employed 69 times to patients (N=52) admitted to medical intensive care unit (MICU). | Quantitative  Cross-Sectional | The protocol was designed based on empirical observations regarding blood glucose control in critically ill patients. In designing the IIP, the team focused on the three main data elements used by experienced clinicians to adjust insulin infusions: 1) the current blood glucose value, 2) the previous blood glucose value, and 3) the current insulin infusion rate. To facilitate early acceptance by critical care physicians and MICU nurses, the IIP was aimed at a conservative blood glucose (BG) target of 100–139 mg/dl. Following a series of brief training sessions, the protocol was made available to clinical providers, who were ultimately responsible for the clinical decision to utilize it in their MICU patients. Employing the IIP involves a simple three-step process using the IIP table: 1) the nurse must determine the current BG value, which guides the nurse to one of the four columns in the IIP table; 2) the nurse must determine the hourly rate of BG change by subtracting the current blood glucose level from the prior value, which then drops one down to a specific cell within the column; 3) specific nursing instructions are found to the far right of the identified cell. | 3 |
| **Results** | | | **Conclusion** | | |
| For the 69 insulin infusions employed, the median duration was 61 hours, with 33 (48%) infusions still running at 72 hours. The median time to reach target blood glucose levels (100–139 mg/dl) was 9 hours. Once blood glucose levels fell below 140 mg/dl, 52% of 5,808 subsequent hourly blood glucose values fell within our narrow target range; 66% within a “clinically desirable” range of 80–139 mg/dl; and 93% within a “clinically acceptable” range of 80–199 mg/dl. Hypoglycemia was rare. Only 20 (0.3%) blood glucose values were 60 mg/dl, none of which resulted in clinically significant adverse events. Hypoglycemia was rapidly corrected using intravenous dextrose, per protocol. When the IIP was halted, BG levels rapidly rebounded to hyperglycemic levels. The IIP was equally effective in the presence or absence of diabetes. In general, the IIP was readily accepted by MICU nursing staff, most of whom rated the protocol as both clinically effective and easy to use. | | | This study describes the successful implementation of a safe, effective IIP by the nursing staff in a tertiary care MICU. The use of this IIP allows for strict glycemic control in critically ill patients. The authors suggest that future studies should be designed to determine whether such control, using protocols like the one described here, will result in improved patient outcomes for  patients admitted to an MICU. | | |

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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 |
| 50. Golombek SG, Berning F, Lagamma EF. Compliance with prophylaxis for respiratory syncytial virus infection in a home setting. *Pediatric Infectious Disease Journal.* 2004;23(4):318-322[50](#_ENREF_50) | To compare the compliance and biologic efficacy of a home health care agency dosing-compliance program to treatment provided in a physician's office setting during a single respiratory syncytial virus (RSV) season. | The sample included infants (N=1,446) who were treated for RSV with palivizumab prophylaxis either in their pediatrician’s offices or through nursing visits to the homes. | Quantitative  Longitudinal | Within 1 week before discharge from the neonatal intensive care unit (NICU), all eligible infants were screened using the American Academy of Pediatrics (AAP) guidelines for their need for RSV prophylaxis. Parents were given information about RSV before discharge and had the opportunity to discuss the material with the health care team. The purpose of the compliance program was explained to the parents, including the importance of maintaining the appropriate interval between doses of palivizumab throughout the season wherever their child received medication. All infants enrolled in the program discharged during the RSV season received their first dose of palivizumab at home within 24 hours of discharge. Palivizumab intramuscular injections were given by a nurse, who also arranged for the next administration date. Parents were asked to choose to receive the recommended RSV treatment for their child either in their pediatrician's office or through a sequence of periodic nursing visits to their home. Compliance data were calculated based on actual monthly injections given during the RSV season. | 2,3,5 |
| **Results** | | | **Conclusion** | | |
| Sixty-seven percent (969 of 1446) of the infants received their monthly injections in the home setting where 98% of the doses were given on schedule. In contrast 33% (477) of the infants received their injections in a pediatrician’s office with a compliance of 89% for completion of all recommended doses (p<0.001 vs. home setting). There were 9 RSV hospitalizations (0.93%) in the home setting group and 8 RSV hospitalizations (3.57%) in the office setting (p<0.001). More parents indicated that the in-home prophylaxis program was more convenient than was true for those receiving treatment in the physician’s office setting (p<0.01). Authors estimate that based on a national basis, for low birth weight babies alone, a lower RSV infection rate could result in a national savings in hospital costs of about $2,400 per case prevented or $221,848,740 per 92,437 avoidable hospital admissions per year. | | | The dosing compliance was greater in the home setting group. The difference observed between RSV hospitalizations in the home setting group (0.93%) versus those observed in the office setting group (3.57%) suggests that better compliance for all doses of antibody prophylaxis results in fewer cases of significant illness and therefore that sustaining antibody blood levels is critical to the success of this immune therapy. At least 320,000 low birth weight patients are born each year that fulfill the AAP criteria for prophylaxis. If these patients completed all intended doses and this study’s results are applied, the authors estimate that 8,450 infants would not have to be hospitalized for RSV. At a rate of $1,000 per day for an average length of stay of 1 week for this illness, the resulting average dollars accrued as savings would be $59 million dollars or nearly $7,000 per patient simply because of a more complete dosing schedule. | | |

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| **Quasi-Experimental Studies (N=55)** | | | | | |
| **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. Grady MA, Bloom KC. Pregnancy outcomes of adolescents enrolled in a Centering Pregnancy program. *Journal of Midwifery and Women's Health.* 2004;49(5):412-420.[51](#_ENREF_51) | To evaluate the CenteringPregnancy model of group prenatal care which provides education and support for young women in an active and developmentally appropriate environment. | Thirteen groups of adolescents (N=124) have completed the Centering program at the Teen Pregnancy Center at Barnes Jewish Hospital in St.  Louis, MO. | Quantitative  Longitudinal | The CenteringPregnancy model is a comprehensive prenatal program in which small groups of pregnant women (8-12) come together for 90-minute sessions throughout their pregnancies with one postpartum session. Centering group sessions begin between 12 and 18 weeks’ gestation and continue every 2 weeks for a total of 12 sessions. The CenteringPregnancy curriculum was modified to meet the specific needs and requests of the adolescents at the clinic. Care is provided within the group context through facilitative leadership and focuses on assessment, education, and group support directed toward self-care responsibility. Perinatal outcomes of the adolescents in the CenteringPregnancy were compared with two groups of adolescents: one consists of adolescents 17 years of age or younger who gave birth at Barnes Jewish Hospital in 2001 excluding adolescents receiving no prenatal care and teens participating in Centering groups through the Teen Pregnancy Center; the second consists of all adolescents 17 years of age and younger who gave birth at Barnes Jewish Hospital in 1998. | 2 |
| **Results** | | | **Conclusion** | | |
| Adolescents participating in Centering groups had very consistent prenatal care (mean number of prenatal visits, 11.5). Nearly 87% of adolescents in Centering groups returned for a postpartum visit within 8 weeks after delivery. The Centering group had a low rate of preterm delivery (10.5%), as well as a low rate of low birth weight (LBW) infants (8.9%). The cesarean section rate was 13.7%. Adolescents’ evaluation responses regarding the Centering program were very positive. There were statistically significant differences in the incidence of preterm birth and LBW infants for adolescents in the Centering group compared with both comparison groups. Adolescents in Centering groups had a lower incidence of preterm births (10.5%) compared to the 2001 and 1998 groups (25.7% and 23.2%, respectively). The Centering group also had fewer LBW infants (8.87%) than both the 2001 and 1998 comparison groups (22.9% and 18.3%, respectively). There were no significant differences in the number of cesarean births between groups. | | | The CenteringPregnancy model worked well in this population and appears to be valuable in terms of consistency in and satisfaction with prenatal care. The authors suggest that randomized, controlled studies are needed to validate this project’s findings in regards to the improved outcomes noted: fewer preterm births and fewer LBW infants. | | |

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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 |
| 52. Grant RW, Cagliero E, Sullivan CM, et al. A controlled trial of population management: Diabetes mellitus: Putting Evidence into Practice (DM-PEP). *Diabetes Care.*2004; 27(10):2299-2305.[52](#_ENREF_52) | To examine diabetic patient registries as a population-level strategy to organize and deliver care. | Diabetic patient registries (N=3,079) were created for four primary care clinics within a single academic health center. | Quantitative  Longitudinal | In the intervention clinic (N=898), a nurse practitioner used novel clinical software (PopMan) to identify patients on a weekly basis with outlying values for visit and testing intervals and last measured levels of HbA1c, LDL cholesterol, and blood pressure. Although individual patients were initially selected based on a single outlying result (e.g., elevated HbA1c), the population manager systematically assessed all aspects of the patient’s care by applying American Diabetes Association clinical practice recommendations for hyperglycemia, hypertension, and hyperlipidemia management. The population manager created individualized care recommendation summaries regarding testing, referral, and medication adjustment for each patient reviewed. These summaries were electronically forwarded to the patients’ primary care providers (PCPs).The intervention relied on an advanced clinical informatics platform, a clinical nurse practitioner, and weekly registry review independent of scheduled patient visits. | 1,3 |
| **Results** | | | **Conclusion** | | |
| Improvements in diabetes-related medication prescription and levels of HbA1c, LDL cholesterol, and blood pressure in the intervention clinic were balanced by similar improvements in the control sites. Specifically, when compared with changes from baseline in the control clinics, the intervention population had greater increases in proportion of patients with HbA1c and LDL cholesterol testing and a small but statistically significant decline in diastolic blood pressure. In addition, a greater overall proportion of intervention patients received urine microalbumin screening. From the end of the baseline to the end of the intervention period, the proportion of patients prescribed ACE inhibitors or angiotensin receptor blockers, statins, aspirin, insulin, and any antihypertensive medicines all increased. However, there were no significant differences comparing intervention and control populations. Risk factor levels (HbA1c, LDL cholesterol, and blood pressure) improved for all clinic cohorts from the baseline to follow- up periods, with only diastolic blood pressure significantly more improved in the intervention population (15.2 vs. 5.7%, reaching goal of <80 mmHg, p=0.001) compared with the control population. | | | This study demonstrated that population level “information triage” of a large registry of diabetic patients can effectively identify a dynamic group of patients with outlying testing dates and results over time. However, the communication of this information to PCPs via e-mail has a very modest effect on outcomes. The authors conclude that since the improvement in testing rates and risk factor control in the intervention site similar to that in the three control clinics, further research is needed regarding the true efficacy of translational research interventions such as this one. | | |

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| **Quasi-Experimental Studies (N=55)** | | | | | |
| **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. Gross PA, Aho L, Ashtyani H, et al. Extending the nurse practitioner concurrent intervention model to community-acquired pneumonia and chronic obstructive pulmonary disease. *Joint Commission journal on quality and safety.* 2004;30(7):377-386.[53](#_ENREF_53) | To examine the extension of a Nurse Practitioner (NP) Concurrent Intervention Model, which has been shown effective for controlling telemetry usage, to patients with community-acquired pneumonia (CAP) and patients with chronic obstructive pulmonary disease (COPD). | The sample included patients (N=307) with community-acquired pneumonia from one hospital. | Quantitative  Longitudinal | The NP assessed each patient with CAP five days a week. She discussed the case with the patient’s nurse. When the patient’s care was not consistent with the performance measures, the NP placed a reminder sticker in the physician’s progress notes section of the medical record. In the absence of an appropriate response, the NP placed a direct call to the patient’s physician to suggest the change necessary for compliance. The intervention was assessed for its impact on reducing the cost per case. In addition, the investigators adopted an  early-switch and early-discharge criteria for patients with CAP to patients with COPD. | 1,5 |
| **Results** | | | **Conclusion** | | |
| After the NP intervention program was instituted, compliance with the CAP performance measures dramatically improved. For example, nfluenza vaccine screening or administration increased from 3.3% to 90.0% and pneumococcal vaccine screening or administration increased from 0.0% to 87.0%. The authors calculated that in a hospital with a high bed census, the CAP intervention program could lead to a profit of $2,576 per case. In a hospital with a lower bed census, the LOS reduction would result in a cost saving rather than additional revenue. They estimated the reduction in cost per case to be $444, mostly from lower total antibiotic costs. Following the intervention, the 15- and 31-day readmission rate decreased. After reviewing charts of 37 patients with COPD for the first month of the project, antibiotics were switched in 54% of patients on a mean of 2.7 days, and corticosteroids  were switched in 71% of the patients on a mean of 3.4 days. The length of stay among patients discharged alive was reduced significantly compared with all other live patient discharges during the same periods. | | | Concurrent intervention by a nurse practitioner (NP) can help achieve excellent compliance with performance measures for CAP and be applied to other chronic respiratory diseases such as COPD. Significant reductions in length of stay and increased revenue resulted without incurring an increase in readmissions for pneumonia. The authors recommend the use of a disease-oriented NP as a case manager, suggesting that acting in a prospective manner, the NP conveniently supplements the efforts of physicians and can partner with them to achieve excellent compliance with evidence-based measures. | | |

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| **Quasi-Experimental Studies (N=55)** | | | | | |
| **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. Hutt E, Reznickova N, Morgenstern N, et al. Improving care for nursing home-acquired pneumonia in a managed care environment. *American Journal of Managed Care.* 2004;10(10):681-686.[54](#_ENREF_54) | To characterize care of nursing home residents who became ill with nursing home-acquired pneumonia (NHAP) in a group-model, nonprofit HMO, and to pilot-test a strategy to implement evidence-based NHAP care guidelines. | Nursing home medical records of patients (N=78) who developed NHAP in six nursing homes were reviewed. Twenty-five residents from one nursing home participated in the pilot study. | Quantitative  Longitudinal | Nursing home medical records of 78 patients who developed NHAP in 6 homes where the HMO contracts for Medicare services were reviewed for demographics, functional status, comorbidity, NHAP severity, care processes, and guideline compliance. The intervention, combining organizational change and education, was pilot-tested in 1 facility with 25 patients. The nursing home aligned its immunization policies with guidelines and offered all of the HMO's residents both pneumococcal and influenza vaccine. The HMO's care coordinator worked with its long-term-care pharmacy to set up on-site storage of the first dose of study drugs and a protocol for ordering refills and subsequent doses. Interactive in-services on recognition and timely notification of respiratory symptoms and the need for complete and up-to-date vital signs were delivered every 3 months to nursing home nurses and aides at the shift change between days and evenings. The HMO physician and nursing home staff were encouraged to use an evaluation and treatment algorithm that follows the care pathway to guide treatment of 25 HMO residents who acquired NHAP and consented to be in the study. | 1 |
| **Results** | | | **Conclusion** | | |
| The major difference between the HMO's residents and the general population of residents in the study facilities was in the proportion residing on the subacute unit (63% vs. 14%, respectively). Of those HMO residents who developed NHAP, 31.7% resided on the subacute unit, and preceding hospital lengths of stay averaged only 4.2 days. Among the patients with NHAP, 83% had a response from their physician in less than 8 hours, 82% were treated with an antibiotic that met spectrum recommendations, and 74% were able to swallow were treated with oral antibiotics. However, few patients had documentation of influenza and pneumococcal vaccination; less than half the direct care staff had been vaccinated; and nursing assessments were incomplete for 23%. At the pilot-test facility, improvement was seen in influenza vaccination (14% to 52%, p=0.01) and use of the most appropriate antibiotics (47% to 85%, p=0.03). The guideline adherence score improved from 52% to 63% (p=0.04). | | | This study demonstrated that care improved in specific areas when the HMO's pilot-test site implemented the NHAP guidelines. Documentation of influenza vaccine improved, but improvement in pneumococcal vaccine was less evident, because the vaccine was actually delivered to the facility a month before the end of the pilot study. Less improvement was seen in processes of care driven solely by the nursing staff, such as prompt physician notification and complete recording of vital signs at symptom onset. The authors suggest that targeting the intervention only to the HMO's residents, about one third of the facility's census, may have diluted the impact of the educational sessions, standardized orders, and posted reminders. | | |

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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 |
| 55. Jones KR, Fink R, Vojir C, et al. Translation research in long-term care: improving pain management in nursing homes. *Worldviews on evidence-based nursing.* 2004;1 Suppl):S13-20.[55](#_ENREF_55) | To develop and test a multifaceted,culturally competent intervention to improve nursing home pain practices; improve staff, resident, and physician knowledge and attitudes about pain and its management; improve actual pain practices in nursing homes; and improve nursing home policies and procedures related to pain. | The intervention was developed and tested in Colorado nursing homes (N=6), with another set (N=6) serving as control sites. | Qualitative  Quantitative  Longitudinal | A multifaceted educational and behavioral intervention was developed and tested in nursing homes. The educational component included four 30-minute, interactive sessions that were developed and delivered to nursing home staff members over a 6-month period. The main behavioral strategy was the creation of a 3-member internal pain team (IPT). These members worked with the study investigators and served as change agents in their respective nursing homes. The IPT developed a pain vital sign assessment and documentation method. A pain expert conducted rounds, consulted on difficult cases and provided make-up educational sessions. | 1 |
| **Results** | | | **Conclusion** | | |
| The intervention was only partially successful in improving staff knowledge about pain over time. However, there was a significant decline in perceived barriers to effective pain management. There was a significant (p≤0.001) decrease over the three phases of this study in the percentage of residents reporting constant pain in the treatment homes (53%, 37%, 35%, respectively), but there was no reduction in the percentage of residents reporting pain or reporting moderate/severe pain. There was no evidence that the targeting of nurses in the intervention was effective at improving pain control compared to control group. | | | Nursing home environments are unlike other health care settings and require unique strategies and approaches to improve clinical practice. Pain is a complex problem in this setting. The authors conclude that multiple factors must be considered not only in the design, but also in the implementation of interventions to reduce pain and improve pain practices in nursing homes. | | |

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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 |
| 56. Kane CF, Blank MB. NPACT: Enhancing programs of assertive community treatment for the seriously mentally ill. *Community Mental Health Journal.* 2004; 40(6):549-559.[56](#_ENREF_56) | To examine the impact on psychiatric and physical outcomes through enhancing a standard Program of Assertive Community Treatment (PACT) with Advanced Practice Psychiatric Mental Health Nurses (APNs) and stabilized consumer peer providers (NPACT). | In a two-group community comparison design, participants receiving NPACT (N=38) were compared to participants receiving traditional PACT (N=21). | Quantitative  Longitudinal | A two-group community comparison design was used to examine the differential effectiveness of NPACT compared to traditional PACT in local community mental health centers. The NPACT program adds an APN and two consumer peer providers (CPPs) to the existing PACT program. The NPACT program provided individualized, APN-managed, psychiatric care and health monitoring to individuals with serious psychiatric illness within a PACT framework. In order to address the physical morbidity and mortality risks, the APN screened for existing illnesses and emphasized positive health behavior. Interventions focused on healthy lifestyles, early illness intervention, health promotion and maintenance, medication education, psychiatric symptom management, and avoiding substance abuse. The CPPs role modeled and reinforced these concepts with clients during weekly visits. Six outcome variables were assessed: psychiatric symptoms, community adjustment, disability, physical symptoms, health promotion orientation, and consumer satisfaction. | 2,3 |
| **Results** | | | **Conclusion** | | |
| Significant improvements over time were demonstrated for both groups on all summary variables. Treatment effects for NPACT over PACT were demonstrated for psychiatric symptoms, community functioning, and consumer satisfaction. The NPACT program performed better as measured by the Positive and Negative Symptom Scale (PANSS). The PANNS showed a significant improvement for NPACT over PACT (F=5.96, df=1,2, p=0.005). The Multnomah Community Abilities Scale also demonstrated a treatment effect for NPACT (F=7.73, df=1,2, p=0.001). The Mental Health Statistics Improvement Program summary score showed significant improvement for NPACT over PACT (F=4.85, df=1,2, p=0.013). | | | Considering the diverse and serious psychiatric conditions of the participants, the significant effect for NPACT over PACT-as-usual is encouraging evidence that PACT can be enhanced to improve outcomes for this population by including APNs and peer providers. This study demonstrates the potential to address physical health problems of the seriously mentally ill more directly within a recognized treatment model. The authors conclude that further development of alternative models of integrated care and examination of their outcomes will help to inform improvements in care to this vulnerable population. | | |

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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 |
| 57. Kane RL, Flood S, Bershadsky B, et al. Effect of an Innovative Medicare Managed Care Program on the Quality of Care for Nursing Home Residents. *Gerontologist.* 2004; 44(1):95-103.[57](#_ENREF_57) | To assess the quality of care provided by an innovative Medicare+Choice HMO targeted specifically at nursing home residents and employing nurse practitioners to provide additional primary care beyond that provided by physicians. | A nurse practitioner was added to the medical care team to provide primary care for residents in long term care facilities (N=44). An equal number served as the control group. | Quantitative  Longitudinal | The underlying premise of the Evercare approach is that the additional primary care will reduce the rate of untoward events and reduce the use of hospitals. The NP Evercare employees monitored the enrolled clientele regularly and worked with their physicians to intervene quickly if issues arose. The care provided by Evercare was compared with that for two control groups: 1) other residents in the same homes not enrolled in Evercare (control-in group) and 2) residents in homes in the same geographic area that did not participate in Evercare (control-out group). To investigate possible effects on quality, researchers used four approaches:1) they examined mortality rates between the study groups; 2) they examined the rate of preventable hospitalizations among Evercare and control enrollees; 3) they used data derived from the mandated Minimum Data Set (MDS) to examine quality indicators (QIs) designed to capture quality issues germane to nursing home residents; 4) they traced the course of activities of daily living (ADL) changes over time as measured by the MDS to compare Evercare and control samples. Outcomes included monthly mortality rates, preventable hospitalizations, quality indicators, and change in activity of daily living levels. | 1,3,5 |
| **Results** | | | **Conclusion** | | |
| In the adjusted model to estimate the risk of death, the control-in sample has a hazard ratio (HR) of 1.09 compared with that of Evercare (higher mortality rate), and the control-out sample has an HR of 0.92, slightly smaller than that of Evercare (p=0.013). The Evercare rate was significantly less than that for the control-in group, but the difference with the control-out group was not. When the hospital admission and Intensive Service Days (ISDs) rates are combined, the rates of preventable admissions for the Evercare sample are lower than that for either control group. The difference between Evercare and the control-in group is not significant, but the difference with the control-out group is significant. The rates of quality indicators and functional change were equivalent. | | | Evercare, with its use of nurse practitioners, represents a model that can provide more efficient care that is of at least comparable quality. However, while the decreases in preventable hospitalizations or equivalent events suggest a positive effect from more intensive primary care, there were no significant changes in overall functioning and a fairly even record with regard to the QIs. | | |

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| **Quasi-Experimental Studies (N=55)** | | | | | |
| **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 |
| 58. Kim S, Koniak-Griffin D, Flaskerud JH, et al. The impact of lay health advisors on cardiovascular health promotion: using a community-based participatory approach. *The Journal of cardiovascular nursing.* 2004; 19(3):192-199.[58](#_ENREF_58) | To evaluate an outreach program that addresses behavioral risk factors (overweight and obesity, lack of exercise and exposure to tobacco smoke) for cardiovascular disease designed through a collaborative partnership between UCLA School of Nursing, Los Angeles County Department of Health Services, and members of the target Latina community. | Latina lay health advisors (LHAs, N=12) from the community were recruited and trained. Residents (N=272) enrolled in classes at baseline, of which 256 completed follow-up questionnaires. | Quantitative  Qualitative  Longitudinal | The study consisted of 3 phases: 1) a community needs assessment; 2) recruitment and training of LHAs; and 3) educational outreach activities by the LHAs within their own communities. Twelve Latina lay health advisors (LHAs) from the community were recruited and trained to teach three classes on healthy nutrition, physical activity, and maintaining smoke-free environments. Each class was 2 hours long with at least a 1-week interval between classes. Classes were offered in Spanish to adult Latinos recruited through the LHAs’ social networks. Each outreach participant was given bilingual educational materials on the topics discussed in class. The research team developed a lifestyle behaviors  questionnaire to identify current health practices in  the areas of healthy nutrition, physical activity, and  smoke-free living environments. | 2,3 |
| **Results** | | | **Conclusion** | | |
| Analyses with paired t-tests (N=256) showed significant increases in scores from baseline to follow-up in participants’ health behaviors. Overall lifestyle behaviors (t=–13.40, p<0.001), and the 3 subsets of nutrition behavior (t=–10.97, p<0.001), physical activity behavior (t=–12.46, p<0.001), and smoke-free behavior (t=–2.61, p<0.05) improved from baseline to follow-up. Themes from the qualitative data on successes and challenges related to awareness and motivation issues, incorporating and maintaining specific practices into daily life, and cooperation or resistance from family members. Participants reported eliminating unhealthy foods from the family diet and incorporating healthier ways of food preparation as main successes. Challenges were expressed related to maintaining family interest in eating healthier foods and eliciting cooperation of family members. Participants expressed positive statements about feeling well and losing weight. Challenges expressed included family resistance to exercise and time limitations. Participants reported success in regards to maintaining a smoke-free environment at home. | | | The study’s findings support the use of LHAs as a feasible and effective healthcare delivery strategy for community health promotion. This study highlights the need for larger scale investigations examining using LHAs as an alternative healthcare delivery strategy within communities, particularly those with large immigrant populations. | | |

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| 59. Krantz MJ, Havranek EP, Mehler PS, et al. Impact of a cardiac risk reduction program in vulnerable patients hospitalized with coronary artery disease. *Pharmacotherapy.* 2004;24(6):768-775.[59](#_ENREF_59) | To evaluate a nurse-based quality-improvement program, designed to increase the use of guideline-based pharmacotherapy in vulnerable patients (ethnic minorities and the poor) with coronary artery disease (CAD). | The sample consisted of consecutive patients hospitalized in an inner-city hospital with a  CAD-related diagnosis (N=151) compared with historic control patients (N=125) who were hospitalized before the program was initiated. | Quantitative  Longitudinal | A nurse-management program was initiated for patients with CAD. Rates of guideline-based care were compared with rates for historic controls. The intervention consisted of two key elements: patient counseling with language-appropriate education materials and direct physician education regarding the importance of cardioprotective drugs. A nurse manager participated in daily coronary care unit teaching rounds with cardiology attending staff and resident physicians and briefed new residents at the beginning of each month. The nurse manager emphasized the need to prescribe evidence-based drugs—aspirin, Beta-blockers, statins, and ACE inhibitors—to all patients with CAD and no contraindication to therapy with these drugs. The nurse manager provided education materials and individual counseling to eligible patients. Counseling focused on four key areas: drug therapy education, smoking cessation, physical activity recommendations, and diet suggestions that focused on minimizing fat and cholesterol intake. | 1 |
| **Results** | | | **Conclusion** | | |
| At hospital discharge, patients in the intervention group were more likely to receive statins (71% vs. 52%, p=0.001) and angiotensin-converting enzyme inhibitors (79% vs. 51%, p<0.001) compared with controls. There was also a trend toward higher use of aspirin and beta-blocker therapy in the intervention group. When assessed prescription rates in ideal candidates were assessed, this trend was strengthened (93% vs. 87%, p=0.08, and 83% vs. 74%, p=0.06, respectively, for aspirin and beta-blockers). Smoking cessation counseling was provided to significantly more patients in the intervention group. Overall length of hospital stay was similar for both the intervention and control groups (4.2 ± 4.7 and 4.2 ± 3.3 days, respectively, p=0.93). | | | The study’s results indicate that a nurse-management program enhances guideline compliance in  vulnerable patients with angiographically established CAD. Improvements in care occurred irrespective of ethnicity, education level, and insurance status. The authors believe that this program format may hold promise for other safety-net hospitals focused on improving care for sociodemographically disadvantaged patients. | | |

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| 60. Krishnan JA, Moore D, Robeson C, et al. A prospective, controlled trial of a protocol-based strategy to discontinue mechanical ventilation. *American Journal of Respiratory and Critical Care Medicine.* 2004;169(6):673-678.[60](#_ENREF_60) | To compare a protocol-based weaning from mechanical ventilation to usual, physician-directed weaning in a closed medical intensive care unit (ICU) with high physician staffing levels and structured, system-based rounds. | Adult patients requiring mechanical ventilation in a medical ICU for more than 24 hours (N=259) were assigned to either usual care or the intervention group. | Quantitative  Longitudinal | Patients were assigned to a study group by their hospital numbers. Patients assigned to the intervention group (N=154) underwent daily screening and a spontaneous breathing trial by respiratory and nursing staff without physician intervention. The protocol wean (PW) was based on one previously shown to reduce duration of ventilation and consisted of a daily screen for readiness, followed by measurement of the ratio of respiratory frequency to mean Vt (f/Vt) in patients passing the screen. Patients assigned to UC (N=145) were managed at their physicians' discretion. Data on weaning methods were not collected contemporaneously on patients in the UC arm. After completion of the study, a random sample of 50 patient charts in this group was reviewed to extract data on weaning methods. | 3,5 |
| **Results** | | | **Conclusion** | | |
| In the intention-to-treat analyses, there was no difference between groups (intervention vs. UC) in the number of patients who successfully discontinued mechanical ventilation before ICU discharge (74.7% vs. 75.2%, p=0.92) or their duration of mechanical ventilation (median [interquartile range]: 60.4 hours [28.6–167.0 hours] vs. 68.0 hours [27.1–169.3 hours], p=0.61). There was no significant advantage to the protocol-based strategy in reducing the time to discontinuing mechanical ventilation even after adjusting for differences in the source of admission and reason for initiating mechanical ventilation at baseline. The duration of the SBT preceding successful discontinuation of mechanical ventilation was longer among patients assigned to the intervention group compared with UC (median, 3.0 vs. 1.6 hours, p<0.01). There were no significant differences in the number of patients requiring reinstitution of mechanical ventilation (either within or after 48 hours), ICU length of stay, location after ICU discharge, and hospital mortality. | | | The study does not document any improvement in clinical outcomes with the use of a nursing/respiratory therapy-driven protocol for discontinuing mechanical ventilation. The authors conclude that protocol-directed weaning may be unnecessary in a closed ICU with generous physician staffing and structured rounds. | | |

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| 61. Lombardi DG, Istwan NB, Rhea DJ, et al. Measuring outpatient outcomes of emesis and nausea management in pregnant women. *Managed care* 2004;13(11):48-5.[61](#_ENREF_61) | To describe the clinical and economic outcomes of patients diagnosed with nausea and vomiting during pregnancy (NVP) utilizing an outpatient program of nursing support and pharmacologic treatment with subcutaneous metoclopramide (SMT). | The sample was comprised of women with singleton gestations (N=428) who were experiencing NVP and whose physicians prescribed an outpatient program with SMT. | Quantitative  Longitudinal | Patients received individualized instruction in their homes by skilled perinatal nurses on diet modification, device operation, infusion site selection, and emergency procedures. SMT was initiated using a protocol that included a 10mg loading dose administered intramuscularly or intravenously followed by continuous subcutaneous administration using a portable, programmable microinfusion pump. As the patient’s ability to take oral food and fluids increased, the continuous infusion rate was decreased. During a nursing assessment, the patient’s Pregnancy-Unique Quantification of Emesis and Nausea (PUQE) score was calculated. The PUQE score was defined using the length of nausea per day and the number of retching and vomiting episodes each day. A PUQE score between 4 and 6 is considered mild NVP, a score between 7 and 12 is considered moderate NVP, and a score that exceeds 13 represents severe NVP. Emotional support and counseling were provided, as were additional home visits. | 3,5 |
| **Results** | | | **Conclusion** | | |
| Improvement in NVP symptoms was achieved in 382 women with SMT (89.3%), while 46 (10.7%) required alteration of antiemetic therapy to subcutaneous ondansetron. The PUQE score at the start of SMT was 7.8±2.9, decreasing to 3.9±1.7 by therapy completion (p<0.001). At treatment initiation, a PUQE score greater than or equal to 7 was reported by 63.1% of women versus 9.1% at the program’s end (p<0.001). Patients with ketonuria that was more than or equal to 1+ decreased from 36.2% to 1.4% (p<0.001). The portion of patients with hospital/ER visits decreased from 65.4% to 3.3% during treatment (p<0.001). Oral dietary improvement was noted in 78.7% of patients during treatment. The average program cost per patient was approximately $4,432. If these extremely ill women were hospitalized in lieu of outpatient management, hospital charges would be approximately $40,050 per patient. | | | Outpatient management was effective in controlling NVP and was associated with a reduced need for hospital or emergency room treatment. | | |

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| 62. Lucke KT, Lucke JF, Martinez H. Evaluation of a professional + peer telephone intervention with spinal cord injured individuals following rehabilitation in South Texas. *Journal of Multicultural Nursing & Health (JMCNH).* 2004;10(2):68-74.[62](#_ENREF_62) | To evaluate the feasibility of a cognitive-behavioral intervention designed to provide post-rehabilitation informational, decisional, and interpersonal support by a rehabilitation nurse and an expert peer for six months, in Hispanics and non-Hispanics with a new spinal cord injury (SCI). | The sample was comprised of SCI patients (N=15), of which six were Hispanic and four were non-Hispanic. Participants were recruited from rehabilitation centers (N=3). | Qualitative  Quantitative  Longitudinal | The Professional + Peer Intervention was an intensive, individualized intervention, designed to facilitate knowledge acquisition and problem solving while providing interpersonal interaction. An experienced SCI rehabilitation nurse provided the professional intervention every 2 weeks by telephone for 6 weeks. Discussions included patient progress, goals, and milestones reached. Complications, hospitalizations, or problems were documented. Together, the patient and nurse set new goals and developed problem-solving strategies. The peer intervention was delivered by an individual who had sustained a SCI injury at least 2 years prior and who had made a positive adjustment to the injury. Peer experts provided social interaction and shared experiences related to role changes, equipment, transportation, activities, recreation, sexuality, and more. At the conclusion of each call, the nurse and peer assisted the study participants in identifying one new goal to be accomplished in the next 2 weeks. The group of Hispanic patients was compared to the Caucasian patients. | 4 |
| **Results** | | | **Conclusion** | | |
| Overall, a positive trend in hope, adjustment and quality of life occurred during the six months. Regression analysis revealed significant changes over 6 months in hope as measured by the Herth Hope Scale (p=0.024) and social functioning (p=0.036). Despite having somewhat higher scores for physical functioning and less reported pain, role function due to physical and mental health were markedly lower for Latinos across all time periods. There was a marked increase in hope and mental health at 6 weeks for Hispanics and then a decline. Other participants’ hope scores remained stable. Bodily pain improved at 6 weeks and then increased above baseline for Hispanics, who reported a dramatic drop in general health scores at 6 weeks and 6 months. | | | This study demonstrates that the recovery experience following SCI is different for Hispanics and that access to appropriate knowledge and decision making supports in a population with limited mobility, potential social isolation, and a sudden and urgent need for new, complex information and skills, has promise in preventing costly complications. | | |

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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 |
| 63. Lunney M, Parker L, Fiore L, et al. Feasibility of studying the effects of using NANDA, NIC, and NOC on nurses' power and children's outcomes. *CIN - Computers Informatics Nursing.* 2004;22(6):316-325.[63](#_ENREF_63) | To pilot test the feasibility of conducting large-scale studies of the effects of using computer-based terms from NANDA, NIC, and NOC on nurses' power to help children and children's health outcomes. | The sample included public health nurses (N=12) in school  settings and schoolchildren (N=220). | Quantitative  Longitudinal Pilot Study Pre-Post | This was a pilot field study to test the feasibility of large-scale studies of the effects of using computer-based terms from the North American Nursing Diagnosis Association (NANDA) International, the Nursing Interventions Classification (NIC), and the Nursing Outcomes Classification (NOC), known collectively as NNN, in electronic health records on nurses’ power and children’s health outcomes. Computerized systems were used for all health visits with participating children. Nurses were in two different groups. One group of six nurses used SNAP Health Center (SNAP 98) software with vendor-developed standard terms to record visits with 117 children (Group A); the other group of six nurses used SNAP 98 software with both the vendor-developed standard terms and NNN with 103 children (Group B). | 3 |
| **Results** | | | **Conclusion** | | |
| In regards to examining the effects of using the standardized terms in electronic health records, the hypothesis related to nurses was supported and the hypothesis related to children was partially supported. For the 12 nurses, the power scores increased significantly (m change = 15.2±21.6, p=0.03). For the total group of children, the number of coping strategies used by the children increased significantly (m change =0.98±3.7(193), p=0.0003) but there were no significant changes in health self-concept, coping frequency and effectiveness, or health behaviors. Regarding the examination of whether the group of nurses who used NNN had greater improvements in power than the nurses who used vendor terms and whether the children served by nurses who used NNN had greater improvements in health outcomes than children served by nurses who used vendor terms, neither hypothesis was supported. The study revealed positive and negative elements for implementation of a large-scale study. Positive elements included: children and parents were enthusiastic and cooperative throughout the 9-month period of involvement and both groups of nurses were able to successfully use the SNAP 98 software. Negative elements were that nurses were not able to use computer- and paper-based documentation of health visits by any other children except those enrolled in the study and it was difficult to find acceptable times that the nurses could meet with participating children to provide nursing services. | | | The authors conclude that one- and two-group designs are too weak to draw conclusions about the effects of using standardized languages in electronic records on health outcomes. They suggest that to achieve consistency among nurses in the use of standardized languages, agencies should incorporate ongoing evaluation of documentation patterns in relation to practice patterns and provide educational sessions for the nurses. Further, they believe that consideration of the positive and negative elements identified through this pilot study will facilitate the design of large-scale studies. | | |

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| **Quasi-Experimental Studies (N=55)** | | | | | |
| **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 |
| 64. Martinen M, Freundl M. Managing congestive heart failure in long-term care: development of an interdisciplinary protocol. *Journal of gerontological nursing.* 2004;30(12):5-12.[64](#_ENREF_64) | To describes the efforts of one facility to implement an interdisciplinary protocol to improve heart failure (HF) care. | Residents (N=20) in assisted living and nursing homes. | Quantitative  Longitudinal | The protocol for monitoring congestive HF in the long-term care setting targeted two groups: nursing home and assisted living residents. The protocol is initiated at admission or readmission from acute care for those with a HF diagnosis. Admissions personnel play a key role in early recognition of potential cases by requesting supportive diagnostic information from discharging hospitals and admitting physicians. Recent weight information is requested along with immunization history. Once the diagnosis is confirmed, residents are placed on a weight regimen by the nursing staff. After the HF protocol was implemented, vaccines were administered automatically when indicated unless refused by residents or the family. A HF education booklet was developed for use across the care continuum. These indicators were tracked over time: 1) inclusion of a current echocardiogram report or ejection fraction in residents’ clinical record; 2) use of ACE inhibitors in appropriate residents with HF; 3) use of a standardized nursing assessment; 4) effective treatment for congestive HF symptoms; 5) attainment of a 90% immunization rate for influenza and pneumococcal vaccines; 6) HF education for residents and their families. | 1,5 |
| **Results** | | | **Conclusion** | | |
| Following implementation of the guideline, quality indicators were monitored and process improvements addressed. Diagnostic information, use of ACE inhibitors, nursing assessment, and symptom management improved. Echocardiogram use improved to 67% 5 months following the initial 3 assessment period. At that time point, ACE inhibitor use improved to 83% in the skilled nursing residents. The assisted living section achieved 100% compliance with the pneumonia vaccinations, while the nursing home compliance was 30%. While episodes of clinical deterioration occurred, most cases were able to be managed in the long term care setting. | | | This protocol has strengthened the continuum of care between inpatient and post-acute settings and provided a tool for monitoring a specific outcome over time so that deficits are detected and improvements are achieved. | | |

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| **Quasi-Experimental Studies (N=55)** | | | | | |
| **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 |
| 65. Melkus GDE, Spollett G, Jefferson V, et al. A culturally competent intervention of education and care for black women with type 2 diabetes. *Applied Nursing Research.* 2004;17(1):10-20.[65](#_ENREF_65) | To report on the development and pilot feasibility testing of a culturally competent intervention of education and care for black women with type 2 diabetes mellitus (T2DM). | The intervention was tested with a convenience sample of community black women with T2DM (N=25). | Quantitative  Longitudinal | The 6-week, cognitive-behavioral, culturally competent diabetes (DM) intervention program was developed and led by advanced practice registered nurses (APRNs) trained in DM care and certified as DM educators. All APRNs were trained to implement the education intervention program in standardized manner using the developed curriculum. Two of the four APRNs and the lay health assistant were black American women. A registered dietitian served as consultant to the development and implementation of the intervention. In an attempt to provide a comprehensive approach to self-management, monthly nurse practitioner (NP) DM care visits were incorporated into the intervention. These monthly care visits reinforced the content and process of the group program through individualized instruction as it pertained to glycemic control, dietary intake, physical activity, and medications. The physical examination provided opportunities for education on complications prevention and screening particularly related to eye and foot care. | 3 |
| **Results** | | | **Conclusion** | | |
| Significant improvements from baseline to 3 months were observed in measures of glycemic control, weight, body mass index, and diabetes-related emotional distress. Analysis of baseline and 3-month measures of glycemic control showed mean fasting blood glucose to be significantly improved from a baseline value of 184 mg/dL to 161mg/dL (SD=13.5, t=2.0, p=0.05) at 3 months. There was a significant change in mean BMI from a baseline value of 32.1 kg/m2 (SD=7.5) to 31.7 kg/m (SD= 7.8, t=3.1, p=0.005). Consistent with the change in body mass index (BMI), mean weight was also significantly decreased from baseline to 3 months, 193.2 lbs. (SD= 10.3) to 191.0 lbs. (SD= 10.5, t =2.3, p=0 .03). A significant difference in level of diabetes-related emotional distress (PAID) was observed. Baseline mean PAID scores decreased from 49.3 (SD=26) to 40.3 (SD=22) at 3 months (t =2.7, p=0.01). | | | This study provides important data on how black women with T2DM respond to a culturally competent intervention of DM education and care designed to empower them with the knowledge and skills necessary to assume DM self-management that in turn results in improved glycemic control and psychosocial outcomes. The authors believe that the potential translation of these findings, into nursing and primary care practice, will benefit the health outcomes of black American women, who for the most part are cared for by nurses and other primary care providers, in various health care settings across the lifespan and throughout the trajectory of T2DM. | | |

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| **Quasi-Experimental Studies (N=55)** | | | | | |
| **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 |
| 66. Miller D, Zantop V, Hammer H, et al. Group medical visits for low-income women with chronic disease: A feasibility study. *Journal of Women's Health.* 2004;13(2):217-225.[66](#_ENREF_66) | To study the feasibility of implementing group medical visits (GMVs) with low-income women with a chronic disease in an inner city clinic setting. | Participants included women (N=28) with at least one chronic disease diagnosis. The study was set in an inner-city clinic setting. 71% were Latina. | Qualitative  Quantitative  Longitudinal | The intervention consisted of six GMV sessions cofacilitated by a physician/nurse practitioner team. The intervention consisted of six 90-minute group clinics spread over a 9-month period. These clinic sessions were facilitated by a physician and nurse practitioner team and were intended to replace the patient’s visits to her previous primary care provider. The GMV format included: a check-in during which women received feedback on the goals they had previously set, a didactic period with an opportunity for questions, and a brief one-on-one encounter with the health provider. Optional private examinations were offered in the 30 minutes following each session. Thematic analysis of open-ended interviews assessed participants' experiences in the GMV. Patient charts and provider logs provided information on health service utilization patterns and provider productivity. | 2,5 |
| **Results** | | | **Conclusion** | | |
| The participants’ responses to the open-ended interview questions helped to describe the acceptability of the GMV model. Although the majority of these responses were positive, 5 women mentioned two or more areas of dissatisfaction with the GMV experience, and 14 participants had one negative comment. The most commonly mentioned positive aspects of the GMV were personalized attention (77%), self-care education (69%), access to medication refills and examinations (69%), and advice from peers (62%). Negative aspects included insufficient personal attention (23%), logistical barriers (8%), and loss of confidentiality (4%). On average, patients required 20 minutes of physician time plus 21 minutes of nurse practitioner time per session. Medical record reviews revealed a significant decrease in urgent care visits (p<0.05) during the 9 months of the intervention compared with a prior 9-month period. There was a corresponding increase in scheduled visits to the primary provider. The increase in primary provider visits was largely attributable to the six GMV visits required for participation in the intervention (p<0.05). | | | The GMV model was well tolerated by patients in this inner-city clinic setting and did not alter provider productivity. The authors submit that the model may have encouraged participants to avoid more expensive urgent care services. Study findings suggest that GMVs represent a cost-effective ambulatory care alternative that is acceptable to low-income women with chronic disease. The authors suggest that further research is required to clarify the costs and clinical outcomes of GMVs relative to usual primary care practice and to identify the most effective GMV format. | | |

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| **Quasi-Experimental Studies (N=55)** | | | | | |
| **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 |
| 67. Miller J, Campbell J, Moore K, et al. Elder care supportive interventions protocol: reducing discomfort in confused, hospitalized older adults. *Journal of Gerontological Nursing.* 2004; 30(8):10-18.[67](#_ENREF_67) | To test the Elder Care Supportive Interventions Protocol (ECSIP), which consists of nursing and family support interventions designed to reduce discomfort and the associated consequences of delirium, impaired physical function, and need for post-hospital care in hospitalized older adults experiencing confusion from delirium or dementia. | The sample was comprised of elder patients (N=81) in a tertiary care hospital as well as nursing students (N=12) who served as elder care assistants (ECAs). | Quantitative  Longitudinal  Pre-Post | Adults older than age 74 or older than age 64 who were from a nursing home who were admitted to the medical and surgical units of a tertiary care hospital were screened for diagnoses of dementia, dependence on functional activities, or delirium. The intervention for nursing staff included four components: 1) a 2-hour educational program; 2) an implementation team; 3) the ECAs; and 4) environmental props. ECSIP’s protocol included the following elements: 1) a client profile which was generated with information gathered from the patients’ primary caregivers within 24 hours of admission; 2) an individualized care protocol which included two groups of interventions (prevention and control of discomfort using data from the client profiles and a second group which involved pain management, toileting programs and more); and 3) an elder guide which was used to increase family comfort. Measures included a modified Discomfort Screen-Dementia Alzheimer’s Type (DS-DAT), severity of delirium using the NEECHAM Confusion Scale, physical function using the Katz Index of Activities of Daily Living and Functional Activities Questionnaire. | 3 |
| **Results** | | | **Conclusion** | | |
| Patients problems with delirium and impaired physical function improved over hospitalization but were still pronounced at discharge. With the exception of reduced discomfort (the intervention group had significantly less discomfort at the second time point [mean, 6.38] versus the control group [mean, 8.25]), there were no significant treatment effects for patients, which is attributed, in part, to inadequate implementation of the ECSIP protocol by nursing staff. Among the ECAs, there was significant improvement in attitudes toward elderly patients from the beginning of the study to the end of the study as measured by a paired t-test (mean T1=86, mean T2=90, t[11]=3.48, p=0.005). | | | While the study findings demonstrated that the nurses had low implementation rates for many of the interventions, the authors also note that nursing students (in their role as ECAs) and patients’ family members are interested and can be important resources in providing comfort to confused elderly individuals during 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 |
| 68. Monteleoni C, Clark E. Using rapid-cycle quality improvement methodology to reduce feeding tubes in patients with advanced dementia: before and after study. *BMJ.* Aug 28 2004;329(7464):491-494.[68](#_ENREF_68) | To describe a quality improvement methodology used to address use of enteral feeding tubes for patients with dementia. | The core team conducted an in-depth review of the available charts (N=58) of the patients who received tubes (N=71) in a 652-bed urban acute care hospital. | Quantitative  Longitudinal | Medical and allied health staff received educational programs on end of life care and on feeding management of patients with dementia. A palliative care consulting team was established. Researchers conducted a retrospective chart review of all patients receiving percutaneous endoscopic gastrostomy or jejunostomy tubes between March and September 2002. Researchers measured the number of feeding tubes placed in patients with dementia, the number of feeding tubes placed in patients with dementia capable of taking food by mouth, and the number of feeding tubes placed in patients with dementia with an advance directive stating the wish to forgo artificial nutrition and hydration. Quality improvement interventions including a palliative care consulting service and educational programs were instituted. Researchers conducted a second chart review for all patients receiving feeding tubes between March and September 2003. | 1,3 |
| **Results** | | | **Conclusion** | | |
| After the interventions, the number of feeding tubes placed in all patients was greatly reduced (71 [0.37%] vs. 27 [1.3%]) as it was in patients with dementia (40 [69%] vs. 8 [30%]). However, the proportion of tubes placed in patients with an advance directive refusing artificial nutrition was not significantly reduced (8 [14%] vs. 4 [15%]). | | | The intensive educational initiative, coupled with implementation of a palliative care consulting service, brought the issue of tube placement in patients with dementia into focus for the hospital community. The finding that the percentage of tubes placed in patients with an advance directive refusing artificial nutrition was not significantly reduced highlights a possible resistance by some doctors and surrogate decision makers to withhold treatment even when the patient’s wishes to withhold treatment were clear. | | |

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| **Quasi-Experimental Studies (N=55)** | | | | | |
| **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. Newshan G. Development and evaluation of an inpatient holistic nursing care services department. *Complement Ther Nurs Midwifery.* 2004;10(3):168-174.[69](#_ENREF_69) | To describe the development and evaluation of a holistic nursing department at a 261-bed conventional, community hospital. | The sample was comprised of patients (N=2,804) who were referred to the holistic nursing department. | Qualitative  Quantitative  Cross-Sectional | Through the holistic nursing department, a nurse visited hospitalized inpatients. Visits included complementary and alternative modalities (CAM) therapies, such as relaxation techniques, therapeutic touch, aromatherapy, and therapeutic suggestion. During a visit, the holistic nurse (HN) may educate, simply listen, or provide counsel without using a CAM. It is suggested that within the holistic framework, anything that produces a physiologic change, such as CAM therapies, causes a corresponding psychosocial-spiritual alteration. | 2,3 |
| **Results** | | | **Conclusion** | | |
| Discomfort and distress was decreased and patient satisfaction high when CAM therapies were used in conjunction with traditional inpatient medical and nursing care. Out of 1570 treatments, adverse responses occurred less than 1% of the time and include: new onset of headache (two cases), restlessness (five cases), and agitation (two cases), and were resolved when the intervention was changed. Some staff members expressed concern that aromatherapy might cause skin irritation or wheezing; however, no cases of skin irritation, rash, or respiratory problems were recorded whilst using aromatherapy (N=753). Nearly all respondents found the holistic nursing visits helpful (96%). The visits were reported to be helpful in improving feelings of relaxation (70%), reducing anxiety (40%), reducing pain (34%), improving sleep (34%), and learning new ways to cope with illness (31%). | | | The author concludes that subjective and objective client outcomes, such as pain, anxiety, and satisfaction, are positively affected when independent holistic nursing therapies are used. These CAM therapies can be integrated with conventional medical and nursing care. | | |

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| **Quasi-Experimental Studies (N=55)** | | | | | |
| **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. Nishimura RA, Linderbaum JA, Naessens JM, et al. A Nonresident Cardiovascular Inpatient Service Improves Residents' Experiences in an Academic Medical Center: A New Model to Meet the Challenges of the New Millennium. *Academic Medicine.* 2004; 79(5):426-431.[70](#_ENREF_70) | To report on a new model for care of inpatients with cardiovascular diseases. | The sample was comprised of physicians (N=52) and residents (N=45) in a hospital. | Quantitative  Longitudinal | In 1998, a new nonresident cardiovascular patient care (Cardiology IV) service was implemented that used a team approach of staff attending cardiologists, cardiovascular fellows, midlevel practitioners (nurse practitioners and physician’s assistants), and nurses to evaluate and treat patients. The major purposes were to redistribute workload from the resident teaching services, enhance the educational experience of the other services, and allow the other services to meet requirements of the Residency Review Committee. A new service role was created, a registered nurse liaison, to streamline daily operations and information flow. Standard dismissal information was collected for all patients dismissed in 1998 to compare diagnosis-related group, length of stay, in-hospital mortality, and 30-day readmission rates for Cardiology IV. These characteristics were compared with those for the remaining resident teaching services. To evaluate the impact of the new cardiovascular patient care service, researchers measured patients’ satisfaction and outcomes and physicians’ satisfaction. | 2,5 |
| **Results** | | | **Conclusion** | | |
| Patients’ satisfaction was no different when patients on Cardiology IV were compared with those on traditional services. Both cardiovascular attending physicians (total N=52) and internal medicine residents (total N=45) were more satisfied with the hospital rotations after the institution of the Cardiology IV service. Univariate assessment demonstrated no significant differences in hospital mortality (p>0.10) or rate of 30-day readmissions between groups (p>0.10). Patients on Cardiology IV had significantly shorter lengths of stay compared with patients on the resident teaching services (2.9 days versus 3.8 days; p<0.01). Overall, the cost per case was 19% lower on Cardiology IV than on the resident teaching services. The severity of cardiovascular problems did not appear to be different between patients on Cardiology IV and those on the resident teaching services. The patients on the resident teaching services had a higher prevalence of comorbid conditions, including stage 3 comorbidities, resulting in higher overall expected mortality and complexity scales. | | | Cardiology IV has provided an alternative to patient care without the need for residents and protects education on the conventional teaching services. This model maintains optimal patient care and has resulted in enhanced satisfaction of attending staff and residents. Reallocating  residents’ hours has allowed them more outpatient contact time and more experience on general medicine services. Cardiology IV also capped the number of new admissions a resident in cardiology would be responsible for each day. The reduction of the large number of patients admitted and cared for by the residents and the coverage of urgent admissions in the morning hours have improved residents’ education on these services, with time for bedside teaching and didactic sessions during the morning rounds. Also, the patient mix has been enhanced for the resident teaching services. | | |

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| **Quasi-Experimental Studies (N=55)** | | | | | |
| **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. Palfrey JS, Sofis LA, Davidson EJ, et al. The Pediatric Alliance for Coordinated Care: Evaluation of a Medical Home Model. *Pediatrics.* 2004;113(5 II):1507-1516.[71](#_ENREF_71) | The objectives of the study were to: 1) characterize a medical home for children with special health care needs (CSHCN) in the Pediatric Alliance for Coordinated Care (PACC); 2) assess parental satisfaction with the PACC intervention; 3) assess the impact on hospitalizations and emergency department episodes; and 4) assess the impact on parental workdays lost and children's school days lost for CSHCN before and during the PACC intervention. | Children with specialized health care needs (N=150) from 6 pediatric primary care practices in Massachusetts. | Quantitative  Longitudinal | Participants were recruited by their pediatricians on the basis of medical/developmental complexity. Physicians completed enrollment information about each child’s diagnosis and severity of condition. Families completed surveys at baseline and follow-up (at 2 years), assessing their experience with health care for their children. The intervention consisted of a designated pediatric nurse practitioner (PNP) acting as case manager, a local parent consultant (LPC) for each practice, the development of an individualized health plan (IHP) for each patient, and continuing medical education for health care professionals. The PNP visited each PACC child at home to get a fuller understanding of the context of the child’s life. The PNP also conducted sick visits, streamlined the ordering of medications and worked with parents in use of the IHPs. The LPCs provided peer support to the parents of other PACC children and assisted with information regarding community resources. | 1,2,3,5 |
| **Results** | | | **Conclusion** | | |
| A total of 60% of the children had >5 conditions, 41% were dependent on medical technology, and 47% were rated by their physician as having a “severe” condition. A total of 117 (78%) families provided data after the intervention. The PACC made care delivery easier, including having the same nurse to talk to (68.4%), getting letters of medical necessity (66.9%), getting early medical care when the child is sick (61.4%), getting telephone calls returned (61.2%), getting appointments (60.9%), communicating with the child’s doctor (60.9%), getting referrals to specialists (60.5%), getting resources for the child (59.7%), forming a relationship with the child’s doctor (58.3%), understanding the child’s medical condition (56.3%), getting prescriptions filled (56.0%), and setting goals for the child (51.8%). There was a statistically significant decrease in parents missing >20 days of work (26% at baseline; 14.1% after PACC) and in hospitalizations (58% at baseline; 43.2% after PACC). The approximate cost per child per year of the intervention was $400. The 12-month hospitalization rate for children whose conditions were considered “severe” dropped from 67.4% to 53.1% (p=0.09). Comparable figures for children with less severe conditions were 50% and 35.5% (p=0 .05). | | | The PACC medical home intervention increases parent satisfaction with pediatric primary care. Those whose needs are most severe seem to benefit most from the intervention. There are some indications of improved health as well as decreased burden of disease with the intervention in place. The PACC model allows a practice to meet many of the goals of serving as a medical home with a relatively small financial investment. | | |

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| **Quasi-Experimental Studies (N=55)** | | | | | |
| **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. Pantalon MV, Fiellin DA, O'Connor PG, et al. Counseling requirements for buprenorphine maintenance in primary care: Lessons learned from a preliminary study in a methadone maintenance program. *Addictive Disorders and their Treatment.* 2004; 3(2):71-76.[72](#_ENREF_72) | To establish the minimal counseling requirements for buprenorphine maintenance in primary care settings. | Opioid dependent patients (N=14) seeking opioid agonist maintenance treatment at an academically affiliated provider of drug treatment in New Haven, CT. | Quantitative  Longitudinal | Patients were treated for 12 weeks with thrice-weekly buprenorphine (BUP) plus either MM provided thrice weekly (5–10 minutes) by a nurse (RN), or MM plus individual Drug Counseling (MM+DC). DC was provided weekly (45 minutes) by a PhD-level psychologist or a Certified Alcohol and Drug Counselor. During MM counseling, RNs: 1) established a therapeutic alliance; 2) educated patients about opioid dependence and BUP maintenance treatment, including complications of opioid and other illicit drug use; 3) monitored drug use and urine toxicology results; 4) encouraged participation in self-help groups; and 5) gave brief advice for achieving abstinence. DC is a treatment in which patients are taught about the spiritual, physical, psychological, emotional, and interpersonal factors that play a role in the development of and recovery from substance dependence. Sessions focus on encouraging lifestyle changes and teaching coping skills. DC also strongly encourages active participation in 12-step groups. | 3 |
| **Results** | | | **Conclusion** | | |
| All 7 of the MM and 6 of the 7 MM+DC patients completed all 12 weeks of the study. Rates of opioid-positive urine toxicology tests averaged 72% for MM and 54% for MM+DC. Two of the 7 MM and 4 of the 7 MM+DC patients achieved ≥3 consecutive weeks of opioid-negative urine toxicology tests. None of these differences reached statistical significance. | | | These preliminary findings demonstrate the feasibility and efficacy of MM and suggest, as with methadone, that DC may be a necessary component of buprenorphine treatment of opioid dependence. Therefore, providers of office- or primary care-based buprenorphine maintenance may need to incorporate aspects of drug counseling. | | |

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| **Quasi-Experimental Studies (N=55)** | | | | | |
| **Citation** | **Study Aim** | **Population/ Setting** | **Study Design** | **Intervention** | **Outcome Measures**  1=care processes  2=patient experience  3=patient health indices  4=quality of life  5=cost |
| 73. Parry MF, Stewart J, Wright P, et al. Collaborative management of HIV infection in the community: An effort to improve the quality of HIV care. *AIDS Care - Psychological and Socio-Medical Aspects of AIDS/HIV.* 2004; 16(6):692-699.[73](#_ENREF_73) | To improve the quality of care delivered to HIV-infected clients utilizing a disease management approach in a U.S. metropolitan community of 150,000 people. | The study focused on a community sample of HIV-infected patients from multiple settings (N=unknown). | Quantitative Longitudinal | A community needs assessment revealed a need to more comprehensively evaluate the community’s standards of prevention, access to client services, and quality of clinical practice. Two follow-up studies were undertaken to further define the need. The first was a chart review of consecutive HIV admissions at Stamford Hospital in 1996-1997. Data collection revealed that fully one-third of HIV-related admissions were preventable. The second was a survey of providers, clients and physicians, which revealed a lack of awareness in both the provider and client community regarding available resources and that infected individuals were failing to seek follow-up after being informed of the HIV test results. In response to the community’s needs, a team of physicians, nurses, community providers, and clients was assembled to define and address the issues. The team focused on the following outcome measurement efforts: 1) adequacy of prophylaxis; 2) success in patient management indicators; 3) adherence indicators; 4) quality of life indicators; 5) overall management indicators. Patient care flowcharting and the creation of an electronic patient database facilitated patient tracking across the entire community. Clinical guidelines and a consultation and referral immunology clinic standardized care practices. | 1,3,4,5 |
| **Results** | | | **Conclusion** | | |
| Clinic ‘no-show’ rates were relatively constant, averaging about 23% of scheduled appointments, comparing favorably to general medical clinic no-show rates. Medication adherence assessment rose from 82% to 100%. Guidelines recommend vaccination against hepatitis A and B for clients who are co-infected with hepatitis C and HIV. Between 1994-1998 these measures were poor and inconsistent until after the improvement project was begun. Immunization rates rose from a mean of 72% to a mean of 87%; tuberculosis screening rose from a low of 35% to a high of 87%. The rate of transmission of HIV to the infants exposed dropped below national averages. In 1999, there was a single case of transmission (4% transmission rate, down from 31%). | | | This HIV program has become an example of successful for disease management within a health system. Key components of the implementation plan were the establishment of a full-time leadership position for the effort in the form of a clinical nurse practitioner and the creation of clinical pathways utilizing flowcharts for standardization of care delivery. These two items were central to achieving the goal of improving the direct delivery of care to HIV-infected clients. | | |

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| **Quasi-Experimental Studies (N=55)** | | | | | |
| **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. Philis-Tsimikas A, Walker C, Rivard L, et al. Improvement in diabetes care of underinsured patients enrolled in Project Dulce: A community-based, culturally appropriate, nurse case management and peer education diabetes care model. *Diabetes Care.* 2004; 27(1):110-115.[74](#_ENREF_74) | To improve clinical diabetes care, patient knowledge, and treatment satisfaction and to reduce health-adverse culture-based beliefs in underserved and underinsured populations with diabetes. | High-risk patients (N=153) with diabetes were recruited from six community clinic sitesin San Diego County, California. | Quantitative  Longitudinal | Project Dulce included nurse case management (NCM) and group education delivered by specially trained peer educators (PEER). The NCM component consisted of a nurse-led team with a registered nurse/certified diabetes educator (RN/CDE), bilingual/bicultural medical assistant, and bilingual/bicultural dietitian who traveled to a different clinic site each day to see patients. The RN/CDE reviewed self-monitored blood glucose results, self-management, and guidelines and goals; provided recommendations for changes in medications; and ordered follow-up laboratory studies and return visits. Prescriptions were approved and signed by the primary care physician. The PEER program consisted of 12 2-hour sessions once a week. Classes included interactive sessions, discussing diabetes and its complications, the role of diet, exercise, and medication, and the importance of self-monitoring of blood glucose. The intervention group was compared with 76 individuals in a matched control group (CG) derived from patients referred but not enrolled in Project Dulce. | 2,3 |
| **Results** | | | **Conclusion** | | |
| After 1 year in Project Dulce, the intervention group had significant improvements in HbA1c (12.0–8.3%, p<0.0001), total cholesterol (5.82– 4.86 mmol/l, p<0.0001), LDL cholesterol (3.39 –2.79 mmol/l, p<0.0001), and diastolic blood pressure (80–76 mmHg, p<0.009), which were significantly better than in the CG, in which no significant changes were noted. Adherence to American Diabetes Association standards of care for the Project Dulce participants was noted to be 100% for the following areas: HbA1c twice per year, lipid panel, urinary microalbumin-to-creatinine ratio, foot examination, monofilament examination (all at least yearly), but adherence was only 28%, 46%, 31%, 33%, and 14%, respectively, in the CG (N=312). Knowledge of diabetes (p=0.024), treatment satisfaction (p=0.001), and culture-based beliefs (p=0.001) were also improved. | | | Project Dulce and similar programs can be used as models to administer diabetes care to underserved populations and can potentially be adapted to the needs of underserved communities throughout the U.S. The authors suggest that the development and funding of such programs may result in significant health and quality of life improvements for the nation’s most vulnerable populations. | | |

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| **Quasi-Experimental Studies (N=55)** | | | | | |
| **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. Price V, Murphy SO, Cureton VY. Increasing self-efficacy and knowledge through a seizure education program for special education teachers. *The Journal of School Nursing.* 2004;20(1):43-49.[75](#_ENREF_75) | The purpose of this study was to measure the effectiveness of a seizure education program designed to increase educators’ knowledge of seizures and seizure management and to measure the effect of the education program on the educators’ self-efficacy to cope with seizure activity. | Early start program and preschool educators (N=28) comprised this sample. | Quantitative  Longitudinal | The PNP discussed types of seizures, definitions, causes, treatments and treatment goals, medications, resources, and case studies. The PHP presenter worked closely with families to provide education, support, and community resources. School nurses presented the school district’s Generalized Seizure Protocol, which outlines the steps that should be taken in the event of a child experiencing a generalized seizure. Each step was reviewed and discussed with participants. Describing the appropriate actions in incremental steps enhanced expectations of success in accomplishing the task. | 1 |
| **Results** | | | **Conclusion** | | |
| Results indicate that there was a significant difference (p<0.001) between pretest and posttest knowledge and self-efficacy scores. Prior to the intervention, 12 (41%) of the educators reported they had experienced a child having a seizure in their classroom. Only five (18%) felt “very confident” that they could recognize a seizure emergency versus 22 (79%) post intervention. When asked to indicate to how confident they felt in their ability to administer first aid, only four (14%) indicated “very confident” prior to the intervention as opposed to 18 (64%) who responded the same way after the intervention. Pre-intervention, 14 (50%) educators indicated they “somewhat lacked confidence,” 12 (43%) were “somewhat confident” and 2 (7%) felt “very confident” they had the knowledge necessary related to seizures when working with families. However, after the intervention, 26 (93%) indicated that they were “somewhat confident” to “very confident” they had the knowledge necessary related to seizures when working with families. | | | Educators need to feel confident in their ability to manage seizure activity and support the needs of the families they serve. In-service education programs such as this one can increase educators’ ability and confidence to handle seizure conditions. The intervention resulted in increased knowledge, skills, and self-efficacy related to seizure management and their ability to interact supportively with families. | | |

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| **Quasi-Experimental Studies (N=55)** | | | | | |
| **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. Pun JC, Burgel BJ, Chan J, et al. Education of garment workers: prevention of work related musculoskeletal disorders. *AAOHN Journal.* 2004; 52(8):338-343.[76](#_ENREF_76) | To reduce musculoskeletal symptoms in a monolingual Cantonese-speaking population as part of a garment worker occupational health and safety initiative. | The sample was comprised of immigrant women (N=21) with a musculoskeletal diagnosis, most of whom worked in the garment industry. | Quantitative  Longitudinal | This educational program was provided within a culturally relevant, risk communication/ empowerment framework, with the goal to promote individual and workplace change. The Healthy Worker Class helped participants to define risk factors for musculoskeletal injuries, understand the use of anti-inflammatory medications and ice therapy, correctly demonstrate stretching exercises, understand the benefit from stretching exercises by having “stronger energy” or less pain, and implement stretching exercises into their daily routine. Women received foam to pad her seat pan and create lumbar supports. In addition, each woman was given a handout describing stretching exercises that was translated into Chinese. Before and after each class, results for participants completed a Likert scale questionnaire about energy levels. | 3 |
| **Results** | | | **Conclusion** | | |
| For the six classes, mean energy levels at the beginning of each class ranged from 2.00 to 2.75. Mean energy levels at the end of each class ranged from 2.57 to 3.36. On average, participants perceived they had an increased energy level at the end of each class. At the end of the first class, each participant was asked to complete a personal commitment contract form to make two changes – one stretch exercise and one ergonomic change. At the beginning of the second class, a short discussion was held about whether each participant was able to make the changes, barriers they faced, and any other questions they might have had. Although these data were not formally collected, it was observed that stretch exercises were easier to accomplish. Reported barriers to institute ergonomic changes included intimidation at drawing attention to themselves and fear of supervisor retaliation for reporting symptoms. | | | A total of 21 women completed the Healthy Work Classes, with an increase in perceived levels of energy measured after each class. Future goals for this program are to train garment workers as leaders who would then use this prevention based curriculum to teach small groups of additional garment workers. | | |

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| **Quasi-Experimental Studies (N=55)** | | | | | |
| **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. Saxena S, Ramer L, Shulman IA. A comprehensive assessment program to improve blood-administering practices using the FOCUS-PDCA model. *Transfusion.* 2004; 44(9):1350-1356.[77](#_ENREF_77) | To describe how a comprehensive blood-administering assessment program and the FOCUS-PDCA approach improved overall blood-administering practices. | Transfusion assessments (N=982) were conducted by nurses at the Los Angeles County/University of Southern California Medical Center. | Quantitative  Longitudinal | Nurses were trained to observe blood issuance, blood administering, and patient monitoring steps, and to audit patient’s charts to measure compliance with blood-ordering procedures. The completeness of physician’s written order for transfusion and the accuracy of the “Call Card” submitted to the blood bank were also monitored, as were transfusions. Each day, the nurse assigned to perform assessments waited at the blood bank until a ward employee presented a “Call Card” to the blood bank. At that time, the assessment began. The observations were recorded on a standardized scannable form, which allowed automatic entry of recorded data directly into a computer database. Progress reports on assessment activities are presented at the quarterly Blood Utilization Committee meetings. The actual results of the assessments are analyzed and discussed annually at the Blood Utilization Committee and Nursing Clinical Council meetings. | 1 |
| **Results** | | | **Conclusion** | | |
| A total of 982 assessments were completed during the 51-month study period. Documentation of informed consent improved from 80 percent to 100 percent. Compliance with a California law that requires patients to receive information on the risks, benefits, and alternatives to transfusion rose from 30% to 100%. Physicians’ compliance in specifying the rate of blood administration improved from 30% to 100%, and verification of information on the patient’s identification band with the patient’s self-identification rose from 50% to 100%. For all other blood administering steps, compliance remained high throughout the study period. For nine months following the study, 100% compliance was maintained for all transfusion processes, and during this period no mistransfusions or blood administration near-misses were reported. | | | The blood-administering assessment program described has improved transfusion practice, reduced the number of near-miss events, and may have prevented mistransfusions. Continuous observational audits may be an important way to improve compliance with standard procedure and reduce the risk of mistransfusionerror. | | |

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| **Quasi-Experimental Studies (N=55)** | | | | | |
| **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. Simmons SF, Schnelle JF. Individualized feeding assistance care for nursing home residents: Staffing requirements to implement two interventions. *Journals of Gerontology - Series A Biological Sciences and Medical Sciences.* 2004;59(9):966-973.[78](#_ENREF_78) | To evaluate the effects and staffing requirements of two individualized feeding assistance interventions to improve oral food and fluid intake in nursing home (NH) residents. | Participants (N=196) were recruited from three nursing homes. | Quantitative  Longitudinal | Research staff conducted direct observations during 3 consecutive days for each participant to identify residents with low oral intake. A total of 150 (77%) of the 196 participants were identified as having low intake. One hundred thirty-four (89%) of the 150 participants with low oral intake completed the intervention phase of this study. Direct observations were conducted by trained research staff according to a standardized protocol for all 134 participants during the following time periods for 2 days to capture NH staff delivery of any food or fluid items, including oral nutritional supplements, between meals. All 134 participants received a 2-day trial of feeding assistance implemented by trained research staff. Participants who did not increase their oral food and fluid intake by at least 15% in response to the one-on-one mealtime feeding assistance intervention received a 2-day trial of the between-meal snack intervention. | 3,5 |
| **Results** | | | **Conclusion** | | |
| In response to one-on-one mealtime feeding assistance, 46% significantly increased their oral intake. The staff time required to implement this intervention was 35 (±8) minutes/meal per resident compared with usual NH care, which averaged 6 (± 9) minutes. Forty percent showed at least a 15% gain (mean gain =29%±11%) in oral intake in response to one-on-one mealtime feeding assistance. Forty-four percent of the participants significantly increased their oral intake in response to the between-meal snack intervention, which required 12 (±6) minutes of staff time per snack/resident compared with usual NH care (1±4 minutes). | | | Most participants (90%) significantly increased their daily oral food and fluid intake in response to one of two individualized interventions. The staff time necessary to implement each intervention was significantly greater than the staff time currently being spent on feeding assistance care delivery. The authors suggest that to make most efficient use of limited staff resources, the residents should be identified who are most in need of the intervention due to low intake, low BMI or recent weight loss. Care should be individualized to each of those residents based on which intervention approach is most appropriate. | | |

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| **Quasi-Experimental Studies (N=55)** | | | | | |
| **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. Stevens-Roseman ES, Leung P. Enhancing attitudes, knowledge and skills of paraprofessional service providers in elder care settings. *Gerontology & Geriatrics Education.* 2004; 25(1):73-88.[79](#_ENREF_79) | To implement and evaluate a training program to enhance the gerontological attitudes, knowledge and skills of paraprofessional service providers working in elder care settings. | The sample consisted of paraprofessional service providers (N=74) from four gerontological service organizations–an Alzheimer’s disease service agency, an adult day center, a managed care clinic, and a social service agency for frail elders. | Quantitative  Longitudinal  Pre-Post | Training curricula were based on assessment of the paraprofessional service providers’ need and included six modules focusing on 1) relationship-building, trust, and helpful approaches with older adults; 2) communication with elders with memory loss; 3) the effects of chronic pain on attitude in older adults; 4) recognizing depression in the elderly; 5) working with older clients and family members; 6) self-care of the paraprofessional service provider. Sessions were experiential as well as didactic, drawing upon trainees’ experiences and challenges; this set the tone for interactive skills which “role modeled” communication skills for interaction with clients and families. The value of the paraprofessional was conveyed through “effective listening” to their concerns, empathizing with difficult situations, and acknowledging that the paraprofessional has the most client contact. | 1,2 |
| **Results** | | | **Conclusion** | | |
| The data revealed that depression knowledge score at post-test one was significantly higher than the score at pretest (p=0.013). The communication knowledge score at post-test one was significantly lower than the score at pretest (p=0.001), but the score significantly improved from post-test one to post-test two (p=0.001). The self-care knowledge score at post-test one was significantly lower than the score at pretest (p=0.001), and significantly improved from post-test one to post-test two (p=0.042). The self-care knowledge score at post-test two was significantly lower than at pre-test (p=0.007). Results revealed that communication skills decreased from post-test one to post-test two (p=0.005); however, there was no significant reduction in communication skills from pre-test through post-test two. Results revealed that significant improvement was found in recognizing depression (p=0.031) and in “effects of chronic pain on attitude” (p=0.013). Progress in both areas was noted from pre-test through post-test two, with progress also occurring from post-test one through post-test two for “effects of chronic pain on attitude” (p=0.008). This improvement in skills in “recognizing depression” and “effects of chronic pain on attitude,” through post-test two, is in support of re-training. | | | Findings of this study are both empirical and “affective.” Empirically, attitudes toward elderly people, as well as gerontological knowledge and skills, improved in part, with additional improvement after reinforcement training. Affectively, trainees felt recognized and valued, suggesting that training can be a form of recognition. The authors conclude that by bringing respect and participation into the training experience, trainees were empowered in their own learning. Ultimately, this empowerment of front line service providers can enhance the lives of increasing numbers of older people, living ever longer, in a society that entrusts its elders to paraprofessionals. | | |

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| **Quasi-Experimental Studies (N=55)** | | | | | |
| **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. Strasser F, Sweeney C, Willey J, et al. Impact of a half-day multidisciplinary symptom control and palliative care outpatient clinic in a comprehensive cancer center on recommendations, symptom intensity, and patient satisfaction: A retrospective descriptive study. *Journal of Pain and Symptom Management.* 2004; 27(6):481-491.[80](#_ENREF_80) | To characterize the symptoms of the first 138 patients referred to the MD clinic, the recommendations issued by the team, and the effect of the MD clinic's overall intervention on symptom expression and on overall satisfaction of the patients and their families with the clinic's services. | Patients with advanced cancer (N=138) referred to a MD clinic and patients (N=77) referred to a traditional pain and symptom management (PSM) clinic. | Quantitative Longitudinal  Retrospective | The two groups were similar in tumor type, demographics, and symptom distress. The MD clinic team (physicians; nurses; pharmacists; physical, speech, and occupational therapists; social workers; chaplains; nutritionists; psychiatric nurse practitioner) delivered 1,066 non-physician recommendations (median 4 per patient, range 0–37). The PSM clinic team made no non-physician recommendations, but referred 14 patients to other medical specialists. | 1,2,3,5 |
| **Results** | | | **Conclusion** | | |
| In 80 (58%) MD-clinic patients with follow-up 9 days (median) after assessment, significant improvement was observed in pain, nausea, depression, anxiety, sleep, dyspnea, and well-being, but not in fatigue, anorexia, or drowsiness. In 83 patients interviewed after the MD clinic, satisfaction was rated as excellent (5 out of 5) in 86–97% of seven areas. | | | Assessment at an MD clinic results in a high number of patient care recommendations, improved symptoms, and high levels of patient satisfaction. | | |

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| **Quasi-Experimental Studies (N=55)** | | | | | |
| **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 |
| 81. Thomas K, Burton D, Withrow L, et al. Impact of a preoperative education program via interactive telehealth network for rural patients having total joint replacement. *Orthopaedic Nursing* 2004; 23(1):39-44.[81](#_ENREF_81) | To evaluate a multidisciplinary continuous quality improvement pilot project designed to provide preoperative education programs for their total joint patients via an interactive telehealth network. | Patients attending a total joint replacement class (N=46) in Kentucky. | Quantitative  Longitudinal | The telehealth classes provided information to patients and families to assist them in developing realistic expectations of total joint surgery, decrease anxiety, and enhance early discharge planning to decrease prolonged length of stay. Patient education materials were mailed to the telehealth patients’ home before class. Patients were asked to bring the materials to the telehealth site. On the day of the class, staff connected with all the telehealth sites 30 minutes before the program to address any audiovisual problems and set-up the PowerPoint presentation for the instructor from the CD containing class content. The staff remained in the room to manipulate equipment/cameras and for technical support during the class. At each telehealth site, the site coordinator escorted patients and families to the telemedicine room. They were made comfortable and given instructions on how to ask a question or make comments to the presenter at the main medical center through the telehealth system equipment. | 2,5 |
| **Results** | | | **Conclusion** | | |
| Patients attending the class at telehealth sites had a poor evaluation return rate. Of the 20 (out of a total of 46) surveys returned by patients who attended class at telehealth sites, 100% of these patients believed that the use of the telehealth network was an acceptable way to obtain the information. Respondents liked having the choice of attending class at the medical center or closer to home. One patient who attended at a telehealth site indicated that he or she did not feel free to ask questions; otherwise, responses to all of the questions from patients who attended locally and those who attended at remote sites were positive. One patient, who had previously attended a face-to-face class, commented that the telehealth site was as acceptable as attending in person. The average length of stay for total joint replacement patients decreased since incorporating use of telehealth for preoperative education, but the authors suggest that other factors contributed to the change. | | | This pilot project was developed to increase attendance at orthopaedic total joint preoperative education classes by improving access to the classes for patients from distant locations through use of the interactive telehealth network. Patients who may not have been able to attend face-to-face classes did attend when they were able to do so closer to home. Patients who attended classes at telehealth sites reported satisfaction with this method of education, and there were no differences between their evaluations of class content and recommendations when compared to other patients scheduled for the same operation who attended the face-to-face class. | | |

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| **Quasi-Experimental Studies (N=55)** | | | | | |
| **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 |
| 82. Tinkelman D, Schwartz A. School-based asthma disease management. *Journal of Asthma.* 2004;41(4):455-462.[82](#_ENREF_82) | To determine whether a comprehensive, school-based asthma management program, in addition to a conventional disease management program, can reduce measures of asthma control, student absenteeism, and caregiver lost workdays. | School nurses recruited parents/caregivers of (N= 41) from three urban elementary schools and middle schools. | Quantitative  Longitudinal | Each child participating in the program received two peak flow-meters (one for school and one for home) and training in their use. Children were asked to record peak flow readings, symptoms, asthma-related activity, and rescue medication use daily into a confidential, Internet-based diary on the school’s computer, assisted by the respiratory nurse care manager or respiratory therapist. The children received 15 minutes of instruction on an asthma-related topic once a month from the study nurse or respiratory therapist and had access to the online Asthma Wizard which provides over 20 interactive sessions for children. Parents/caregivers also received asthma education, additional asthma education materials, and an asthma action plan that was derived from the primary care physician’s plan for the child. Phone calls to discuss symptoms, action plans and other information were made to the parents/caregivers of children with moderate asthma at 1, 6, and 12 months following enrollment and to parents/caregivers of those with severe asthma at 1, 3, 6, 9, and 12 months. | 3 |
| **Results** | | | **Conclusion** | | |
| At 6 months, the numbers of missed school days (67.1%) and unscheduled doctor visits (60%) decreased by approximately two thirds (p<0.01; p<0.01, respectively). The number of caregiver days, emergency room visits, hospitalizations, and oral steroid bursts also declined, but the reductions were not statistically significant at the p=0.05 level. The 12-month data showed similar trends but did not achieve statistical significance. Caregivers' perception of children's activity level increased by 11% (p=0.037). Daytime and nighttime frequency of symptoms dropped by 62% and 34%, respectively (p<0.007 and p<0.03 for each). These trends continued at 12 months, although only reduction in frequency of symptoms attained statistical significance. Of the 35 students with moderate or severe persistent asthma who were available for assessment of long-term controller medication use at 6 months, 26 were on long-term controller medications, compared to 20 at baseline (30% increase). At 6 months, an average of 29 (of 41 total) students used the interactive asthma diary at least 3 times/week, and more than 90% of the students entered peak flow data into the diary at least once/week in school. | | | The 6- and 12-month outcomes from the School-Based Asthma Disease Management Program demonstrated that the program reduced students’ medical service utilization and missed days from school, decreased the number of caregiver days missed from work, and improved caregivers’ quality of life. | | |

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| **Quasi-Experimental Studies (N=55)** | | | | | |
| **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 |
| 83. Tobacman JK, Kissinger P, Wells M, et al. Implementation of personal health records by case managers in a VAMC general medicine clinic. *Patient Education and Counseling.* 2004;54(1):27-33.[83](#_ENREF_83) | To determine the feasibility of implementation of personal health records (PHRs) by case managers (CMs) in a Veterans Affairs Medical Center (VAMC) Continuity of Care (COC) Clinic, to ascertain the impact of PHRs on patient access to vital health information, and to assess the effect on provider-patient communication. | Patients (N=150) and nurse case managers (N=8) in the general medicine COC Clinic at the Iowa City VAMC participated in this study. | Quantitative  Longitudinal | The intervention, implementation of PHRs, was performed in one half of the patients (cohort 1), selected at random by their case manager nurses. The CMs demonstrated how to use a PHR and encouraged the patients to utilize the PHRs on return visits. The PHR used is a small notebook that fits into a plastic checkbook registry case. All participants responded to questions about their personal possession of documentation of vital health information. The distribution of responses between cohorts before and after implementation of the personal health records was analyzed. Researchers determined changes in status (from having documentation to no documentation and vice versa) between the two cohorts, grouped by case manager. In addition, the following items were assessed: a) documentation at onset and at follow-up; b) documentation at onset and no documentation at follow-up; c) no documentation at onset with documentation at follow-up; and d) no documentation at either onset or follow-up, following stratification by case manager. Cohort 2 served as the control group and did not receive PHRs. | 1 |
| **Results** | | | **Conclusion** | | |
| At follow-up, cohort 1 had marked increase in access to documentation of medical information in multiple categories. Statistically significant differences were noted with regard to access to documentation about immunizations (p=0.0021), allergies (p=0.0068), medications (p=0.0069), and operations (p=0.014) between the cohorts with or with no PHR. These changes reflected patient utilization of the PHR. Of follow-up respondents, 45% brought the PHR to a return appointment, and 60% indicated that they had made updates to the record. In contrast, no significant improvement occurred for cohort 2 in personal possession of documentation of any of the above information. Significant differences occurred between the cohorts in change from no documentation to have documentation (n/y; p=0.018, GEE) and for the control group versus the case group in have documentation to no documentation (y/n; p=0.0085, GEE). | | | Utilization of personal health records may help to relieve the asymmetry in information between patients and providers, by providing patients with a resource to maintain a summary of vital health information. The practical implications of this study include the need for health care providers to recognize the limited possession of documentation of vital medical information by patients. Use of PHRs can alter this situation and may enable patients to participate more effectively in their health care. | | |

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| **Quasi-Experimental Studies (N=55)** | | | | | |
| **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 |
| 84. Warms CA, Belza BL, Whitney JD, et al. Lifestyle physical activity for individuals with spinal cord injury: A pilot study. *American Journal of Health Promotion.* 2004; 18(4):288-291.[84](#_ENREF_84) | To evaluate the acceptability and feasibility of a lifestyle physical activity program for people with spinal cord injury (SCI). | Non-exercising adult volunteers (N=16) with SCI participated in a single group pre-post-test of the "Be Active in Life Program." | Quantitative  Longitudinal | The "Be Active in Life Program" featured stage-matched educational materials, a home visit by a nurse, construction of a personal plan to increase activity, and four follow-up phone calls. The scripted home visit lasted 90 minutes and included a motivational interview, goal setting and development of a personal action plan. Program acceptability, stage of change, barriers to health-promoting activities, abilities for health practices, health, depression, and muscle strength were rated. Physical activity was monitored using actigraphy and a self-report record. | 2,3 |
| **Results** | | | **Conclusion** | | |
| Participants rated the program positively, although some preferred a structured exercise approach. Eighty-one percent of participants progressed in stage of change and 60% increased physical activity counts per day and 69% increased self-reported activity. There were significant changes in motivational barriers, exercise self-efficacy, self-rated health, and muscle strength. | | | The positive evaluation of the program provides evidence that health promotion efforts using approaches known to be effective in the general population might be useful and effective for people with disabilities. Further, study findings suggest that people with SCI might make activity behavior changes because of education and counseling provided by a health care provider. | | |

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| **Quasi-Experimental Studies (N=55)** | | | | | |
| **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 |
| 85. Wilbright WA, Birke JA, Patout CA, et al. The use of telemedicine in the management of diabetes-related foot ulceration: a pilot study. *Advances in Skin & Wound Care.* 2004;17(5 Pt 1):232-238.[85](#_ENREF_85) | To determine if the management of forefoot ulcerations through telemedicine is medically equivalent to ulcer care at a diabetes foot program. | Patients with diabetes treated via telemedicine consultation (N=20) were compared with patients with diabetes who were treated in person (N=120). | Quantitative  Longitudinal | Healing rates in twenty consecutive patients with diabetes treated for neuropathic forefoot ulcerations via telemedicine consultation were compared with those of 120 consecutive patients with diabetes who were treated face-to-face at a diabetes foot program (DFP). The management of forefoot ulcers by a certified wound care nurse trained in the use of a staged management approach algorithm and alternative off-loading methods was supported by real-time interactive telemedicine consultation. In the telemedicine group, the nurse specialist used a simple healing shoe with or without an accommodative dressing. More extensive offloading methods were used on-site at the diabetes foot program, including a contact cast, walking splint, and an accommodative dressing with a healing shoe. The accommodative dressing and healing shoe have been previously shown to be effective. With the support of the DFP team via telemedicine, the nurse specialist delivered the majority of ulcer care. Ten patients in the telemedicine group required a single visit to the DFP for services beyond the capabilities of the nurse specialist. | 3 |
| **Results** | | | **Conclusion** | | |
| No differences were found between the telemedicine and diabetes foot program groups in the average forefoot ulcer healing time (43.2 + 29.3 vs. and 45.5 + 43.4 days, p=0.828), the percent of forefoot ulcers healed in 12 weeks (75 % vs. 81%, p=0.546) and the adjusted healing time ratio (1.40 vs. 1.00, p=0.104). Three of 20 (15%) telemedicine patients and 7 of 120 (5.8%) face-to-face patients either did not heal or were lost to follow-up. | | | Study findings appear to support the effectiveness of real-time interactive telemedicine consultation in the management of diabetes-related forefoot ulceration. Since only a limited number of patients with diabetes-related foot problems are able to overcome the distance and economic barriers to visit the DFP in person, this is an important finding. Study results suggest that telemedicine may help overcome barriers to accessing care by leveraging and extending the health care delivery infrastructure available in metropolitan centers to patients and caregivers in rural locations. | | |

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| **Quasi-Experimental Studies (N=55)** | | | | | |
| **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 |
| 86. Yeung A, Kung WW, Chung H, et al. Integrating psychiatry and primary care improves acceptability to mental health services among Chinese Americans. *General Hospital Psychiatry.* 2004; 26(4):256-260.[86](#_ENREF_86) | To investigate whether integrating psychiatry and primary healthcare improves referral to and treatment acceptability of mental health services among Chinese Americans. | The subjects included in this study were PCPs/nurses (N=6) and the population of Chinese Americans who attended the Adult Medicine Clinic at the South Cove Community Health Center in Boston’s Chinatown during the 12-month period project. | Quantitative  Longitudinal | The South Cove Bridge Project has four main components: Training of PCPs on established treatment guidelines, Training of the PCPs/nurse on cultural sensitivity, Primary care nurse as the “bridge” or care manager, and Liaison psychiatrist provided on-site services. The rate of mental health service referrals and successful treatment engagement before and during the project were compared. | 1 |
| **Results** | | | **Conclusion** | | |
| During the 12-month project period, the PCPs referred 64 patients (1.05% of patients served during that year by that department) for mental health services. There was a wide range of psychiatric diagnoses among the referred patients, major depressive disorder (36%) being the most common. In the 12-month period before the project, the Adult Medicine Department referred 38 patients (0.66% of patients served during that year by that department) for mental health services. There was a 60% increase in the percentage of patients referred for mental health services. Fifty-six patients (88%) referred during the project showed up for initial evaluation, compared to 53% in the 12-month period before the project. | | | Study findings suggest that integrating psychiatry and primary care is effective in improving access to mental health services and in increasing treatment engagement among low-income immigrant Chinese Americans. The Bridge Project has been successfully replicated at the South Cove Community Health Center. The authors suggest that this model may prove effective outside the Chinese American community and be beneficial to other less acculturated ethnic groups that tend to use primary care as the de facto site for treatment of mental illnesses. | | |

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| **Quasi-Experimental Studies (N=55)** | | | | | |
| **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 |
| 87. Zgibor JC, Rao H, Wesche-Thobaben J, et al. Improving the quality of diabetes care in primary care practice. *Journal for Healthcare Quality.* 2004; 26(4):14-21.[87](#_ENREF_87) | To examine the effect of a quality improvement project, Diabetes Disease Management Program (DDMP), on compliance with recommended process measures of care in primary care practice settings. | The sample was comprised of people with diabetes (N=208) from primary care practices (PCPs) and the Center for Diabetes and Endocrinology (CDE). | Quantitative  Longitudinal | A quality improvement program for the primary care practices was designed based on established American Diabetes Association guidelines to enhance utilization of process measures, including HbA1c, urine albumin, lipid profiles, and performance of eye and foot examinations. Certified diabetes nurse educators visited five participating primary care practices biweekly for 1 year providing education to physicians and office staff on standards for diabetes management and to patients regarding self-management. Participating patients were followed for 12 months according routine patient care practices in each office. | 1,3 |
| **Results** | | | **Conclusion** | | |
| The number of patients returning for follow-up visits differed and those with complete follow-up had better glycemic control at baseline (8.0 vs. 8.7, p<0.01), were more likely to attend the CDE, and were more likely to have a diabetes-related complication. Among 208 participants, 85.5% had >2 HbA1cs, 93.6% had lipid profiles, and 100% had foot examinations. Improvements in HbA1c (9.0% to 7.7%) were observed. | | | A DDMP modeled after a specialty diabetes clinic and initiated as part of a quality improvement initiative provides a practical approach to improving the quality of diabetes care. It is not clear which aspect of the program (provider or patient education) influenced these findings, but this straightforward approach yielded positive outcomes, with important implications for clinical practice. | | |

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| **Quasi-Experimental Studies (N=55)** | | | | | |
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| 88. Zimmerman CR, Mlynarek ME, Jordan JA, et al. An insulin infusion protocol in critically ill cardiothoracic surgery patients. *Annals of Pharmacotherapy.* 2004;38(7-8):1123-1129.[88](#_ENREF_88) | To examine and report on the performance of a nurse-driven insulin infusion protocol to maintain tight glycemic control (TGC), defined as a blood glucose level of 80-150 mg/dL, in critically ill cardiothoracic surgical patients. | The sample included critically ill cardiothoracic surgical patients (N=42); the study was set in one surgical intensive care unit (SICU). | Quantitative  Cross-Sectional | A nurse-driven insulin infusion protocol was developed and initiated in postoperative cardiothoracic surgical intensive care patients with or without diabetes. In this before-after cohort study, two periods of measurements were performed: a 6-month baseline period prior to the initiation of the insulin infusion protocol (control group), followed by a 6-month intervention period in which the protocol was used (TGC group). This group was comprised of patients with or without diabetes who had undergone cardiothoracic surgery. These patients were placed on the protocol for 6 months. On admission to the SICU, patients received hourly blood glucose monitoring using a bedside monitor. In the control group, postoperative cardiothoracic surgery patients received blood glucose management via a standard sliding-scale per the discretion of the physician. None of these patients had received an insulin infusion. Other than the change in glycemic control methods and other performance measures specified by the surgical infection prevention (SIP) project previously launched by the hospital, both groups received identical interventions in terms of perioperative and SICU care. | 3 |
| **Results** | | | **Conclusion** | | |
| Findings showed percent and time of blood glucose measurements within the TGC range (control 47% vs. TGC 61%; p=0.001), AUC of glucose exposure >150 mg/dL versus time for the first 24 hours of the insulin infusion (control 28.4 vs. TGC 14.8; p<0.001), median time to blood glucose <150 mg/dL (control 9.4 vs. TGC 2.1 hours; p<0.001), and percent blood glucose <65 mg/dL as a marker for hypoglycemia (control 9.8% vs. TGC 16.7%; NS). In the TGC group, the mean duration of the insulin drip was significantly longer for patients with diabetes compared with those without (33.7±19.2 vs. 20.9 ± 10.7 hours; p=0.001). Similarly, in the first 24 hours, patients with diabetes in the TGC group required more insulin (65.4±53.7 units) than did patients without diabetes (47.0 ± 63.8 units); this finding was not significant. | | | The insulin infusion protocol efficiently and significantly improved glycemic control in critically ill patients who underwent cardiothoracic surgery without significantly increasing the incidence of hypoglycemia. The authors suggest that further study be conducted to determine the optimal glycemic range in which maximal reductions in surgical site infection rates and other morbidity and mortality parameters can be observed and to ascertain the optimal glycemic/insulin infusion protocol for obtaining this goal without causing excessive episodes of hypoglycemia. | | |

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| 89. Zuckerman B, Parker S, Kaplan-Sanoff M, et al. Healthy steps: A case study of innovation in pediatric practice. *Pediatrics.* 2004;  114(3):820-826.[89](#_ENREF_89) | To evaluate Healthy Steps, a program which enhances and expands traditional pediatric care by including a child development specialist as part of the pediatric practice team. | The original Health Steps cohort consisted of pediatric practices (N=15) and families (N=3,737). | Qualitative  Quantitative  Longitudinal | Healthy Steps (HS) was designed to enhance the ability of pediatric practices to address the promotion of child development and family relationships more effectively. An HS practice expands on traditional services offered in a pediatric and family practice to include a child development specialist or Healthy Steps specialist (HSS). Well-child visits are enhanced to emphasize promotion of children’s development, including strategies to improve the fit between parent and child, closer attention to parental questions and concerns, and use of teachable moments to support better parental understanding of children’s behavior. The model includes home visits with the HSS and a dedicated child-development telephone information line. Child-development and “family health” check-ups are included in developmental screening. Written materials for parents that emphasize prevention and health promotion within the context of their relationships with family, pediatric, and community resources are provided, as are parent support groups. | 1,2,5 |
| **Results** | | | **Conclusion** | | |
| Findings show that HS families received significantly more preventive and developmental services compared with families in the control group. HS families were 20 times more likely for receiving ≥4 of the HS services and 16 times more likely to receive a home visit. HS had a positive impact on parenting in many areas including adherence to vaccine schedules (70% more likely to bring child in for age-appropriate vaccines by or before 3 years and 60% more likely to be sure child is up-to-date on vaccines by age 2), using appropriate discipline techniques (27% less likely to report using severe physical discipline), and correct sleep positioning (24% less likely to place newborns on their stomachs to sleep). Other outcome measures (such as initiation or duration of breastfeeding, child development knowledge, sense of competence, and reports of child language development at 2 years of age) did not differ between intervention and comparison group. Compared to other early childhood intervention efforts, HS offers a comparable positive impact on parenting at a relatively inexpensive cost: an estimated $400 per family per year (compared to $4500 from Early Head Start). | | | Approximately 3 years after the evaluation of HS ended, 10 of the original 24 sites were still in operation, and an additional 24 sites were initiated. Although funding and reimbursement remain an important barrier, the authors believe that continued growth of HS suggests an abiding interest in this approach to expand and enhance preventive and developmental care in pediatric primary care. | | |

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| **Non-Experimental Studies (N=72)** | | | | | |
| **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 |
| 90. Aigner MJ, Drew S, Phipps J. A comparative study of nursing home resident outcomes between care provided by nurse practitioners/ physicians versus physicians only. *Journal of the American Medical Directors Association.* 2004;5(1):16-23.[90](#_ENREF_90) | To determine if outcomes of care for nursing home residents differ between two groups of providers: nurse practitioners/ physicians and physicians only. | The sample included residents (N=203) in central Texas nursing homes (N=8). | Quantitative Longitudinal | A retrospective nursing home chart review covering a 12-month period was conducted. The following major outcomes were selected for study in an attempt to determine the basic quality of care given by the two groups as well as the cost-effectiveness of using nurse practitioners in a team approach: 1) number of visits to the emergency department (ED), average cost of visit(s), and major diagnoses; 2) number of hospital admissions and average cost of admission(s); 3) completion of mandated progress visits and histories and physicals; 4) number of acute visits and diagnoses for that visit. In addition, data were collected on the average number of medications used by each subject and the number of beeps and telephone messages relayed to the nurse practitioners during the time period. | 1,5 |
| **Results** | | | **Conclusion** | | |
| Acute visits were significantly higher for the nurse practitioner/physician team (3.0±2.4) versus the physician-only group (1.2±1.5). In the nurse practitioner/physician group, this broke down to an average number of nurse practitioner acute visits per year at 2.2 (±2.1) with an average number of physician acute visits per year at 0.9 (±1.5). The nurse practitioner/physician group treated significantly more cardiac (17, 17% vs. 2, 4%); eye, ear, nose, and throat (28, 27% vs. 2, 4%); and dermatologic (35, 34% vs. 5, 11%) diagnoses than the physician-only group. Emergency department visits, emergency department costs, hospitalizations, length of stay, hospital costs, performance of mandated progress visits, and performance of annual history and physicals did not show significant differences between the two groups. | | | The level of care provided for patients by the two groups of providers was basically the same and of similar quality; however, the nurse practitioner/physician group patients were seen more often. Increased visits by nurse practitioners are assumed to result in time and cost savings for physicians and improved access to care for patients. The authors conclude that the use of nurse practitioners in caring for long-term care patients is cost effective. Proving cost-effectiveness of care provided by one provider type versus another is difficult to do without complete information about all costs incurred and reimbursements received. Therefore, the authors suggest that planning for a future study on cost-effectiveness and utilization should include first developing a method or formula to use in the final analysis. | | |

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| 91. Alexander IM. Characteristics of and problems with primary care interactions experienced by an ethnically diverse group of women. *Journal of the American Academy of Nurse Practitioners.* 2004;16(7):300-310.[91](#_ENREF_91) | To reflect women's voices as they discussed characteristics of health care interactions and spontaneously identified problems in primary care interactions. | The sample was comprised of ethnically-diverse woman (N=8) who had seen a nurse practitioner in a primary care center. | Qualitative Longitudinal | The study used focus groups. Discussion at each meeting evolved as the participants developed an understanding of and clarified the problems that they had encountered in primary care interactions. Participants were asked to describe their interactions with health care providers and to describe an interaction with a nurse practitioner (NP). Each participant was individually encouraged to share opinions, comments, and observations. At the end of each meeting, the participants determined the next meeting’s specific discussion topic, keeping within the overall thread of analyzing primary care interactions. Field notes, seating charts, participant interaction notations, session transcripts, and audiotapes were repeatedly reviewed to identify significant statements. At each subsequent meeting, the previous results were discussed to verify that the essential meanings identified were aligned with the participants’ intent. | 2 |
| **Results** | | | **Conclusion** | | |
| The women identified problems with how they were currently experiencing some interactions. They spontaneously identified differences in interactions with NPs and physicians and differences in positive and negative interactions in general. At first, the women noticed when others were not treated well, and over time they began to see poor treatment in their own interactions. Gradually, the participants began to recognize problems that had previously been unrecognized. The overarching issue noted was a lack of caring, a pervasive attitude demonstrated when clinicians failed to show concern, did not listen, were not trustworthy, or treated the women with disrespect or prejudice. | | | The women in this study clearly identified problems in interactions pertaining to both system delivery issues and one-to-one interactions. They clearly articulated a desire to be treated in a way that retains dignity, recognizes individuality, and establishes equality. Clinicians can create interactions that incorporate these traits to better meet women’s needs and to improve primary care services. | | |

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| 92. Andresen EM, Seecharan GA, Toce SS. Provider perceptions of child deaths. *Archives of Pediatrics and Adolescent Medicine.* 2004;158(5):430-435.[92](#_ENREF_92) | To compare nurse and physician perceptions of the quality of care and events of death of the same children. | The sample was comprised of matched sets of physicians and nurses (N=71) who had treated the same children in an academic, tertiary care, faith-based children’s hospital. | Qualitative  Quantitative  Cross-Sectional | Records were reviewed to identify the primary physician and nurse who were responsible for ongoing care of the child during the hospitalization and were present at the time of death. Once providers were identified, surveys were sent which focused on aspects of the child’s quality of care around the time of death, as well as the provider’s thoughts about his or her involvement and perception. Sixty-two variables were constructed from survey questions. Because of the diversity of children dying in the hospital, some questions, such as those seeking the providers’ perceptions of the child’s opinion or emotional symptoms were not relevant to all children because of age or cognitive development. Some questions were not relevant for children dying suddenly. Items were dropped from analysis when 5 or fewer physicians or nurses answered those items. | 2 |
| **Results** | | | **Conclusion** | | |
| Physicians and nurses usually agreed on what had happened for events surrounding the child’s care. There was a high degree of agreement concerning the amount of ventilatory support, use of hospice, and place of death. The respondents believed overwhelmingly that pain and physical symptoms were well managed and that there was discussion about the possibility of death and treatment options. In general, physicians tended to answer questions more positive views of the quality of care and with more assurance that the care had been appropriate and consistent with the child’s and family’s preferences. For example, 91% of physicians said they were comfortable guiding the care of the child compared with 87% of nurses, and 94% of physicians said the child was “at peace” during his or her last days compared with only 72% of nurses. There were several aspects of the child’s care in which nurses were more involved or gave more positive responses about the care and death of the child. Nurses were much more likely than physicians to talk to parents about informing siblings about the possibility of the patient’s death (86% vs. 49%). They also reported that they talked more to families about religious or spiritual beliefs (83% vs. 59%). Agreement was high (>75%) for the matched sets with a few exceptions, including questions that asked for a provider’s own behavior or expectation (e.g., expecting further contact with a patient’s family). | | | Most health care providers in this study reported that they were comfortable in guiding the care of children at the end of life, including providing anticipatory guidance. They also had positive reports of the adequate pain and physical symptoms management in the hospital. There were differences in perception explained by roles (physicians vs. nurses). The authors suggest that future research should examine differences by provider experience and in other care settings. | | |

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| 93. Ash M, Seago JA. The effect of registered nurses' unions on heart-attack mortality. *Industrial and Labor Relations Review.* 2004;57(3):422-442.[93](#_ENREF_93) | To examine the relationship between registered nurse (RN) unionization and the mortality rate for acute myocardial infarction (AMI), or heart attack, in acute-care hospitals in California. | The sample consisted of acute care hospitals (N=344) in California. | Quantitative  Cross-Sectional | This study compared the heart attack mortality rate of hospitals with unionized RNs to that of with non-unionized RNs. Because hospital mortality can be a function of many factors other than whether hospital nurses are unionized, researchers estimated multivariate regression models to control for these other characteristics. After they explored descriptive statistics stratified by union status, they used a multivariate regression model to test the statistical significance of the variable of interest in the presence of covariates. | 3 |
| **Results** | | | **Conclusion** | | |
| After controlling for patient and hospital characteristics, the authors found that hospitals with unionized RNs have 5.5% lower heart attack mortality than do non-union hospitals. This result remains substantively unchanged when the analysis accounts for possible selection bias, specifically, the possibility that unionized hospitals have certain important but unobservable characteristics, independent of unionization that affect patient care. | | | Findings from the study do not rule out the nonrandom selection hypothesis regarding the presence of unions, and this limits the causal interpretation of these results. The authors suggest that a bias may exist based on the types of hospitals that have RN unions. They note that unions may be easier to establish in high-quality hospitals, perhaps because these hospitals have the capacity to pay premium wages or otherwise to offer more attractive working conditions. In this case, unions do not cause good outcomes but rather select hospitals with good outcomes. Conversely, unions may thrive in hospitals that have poor outcomes, possibly because morale is low. In the latter case, a correlative analysis would associate unions with bad outcomes, although again the relationship is not causal. | | |

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| 94. Bates-Jensen BM, Schnelle JF, Alessi CA, et al. The effects of staffing on in-bed times of nursing home residents. *Journal of the American Geriatrics Society.* 2004;52(6):931-938.[94](#_ENREF_94) | To examine the effect of staffing level on time observed in bed during the daytime in nursing home (NH) residents. | The sample included residents (N=882) from nursing homes in Southern California (N=34). | Quantitative  Cross-Sectional | The purpose of this study was to describe the effects of two different NH staffing levels, one that meets or exceeds and the other that is below reported staffing recommendations, on the amount of time residents were observed in bed during the day. The hypothesis was that a higher proportion of residents residing in lower-staffed NHs would be observed in bed more frequently because fewer staff would be available to assist residents out of bed. Implications of excessive time in bed, in terms of selected quality-of-life measures (e.g., social engagement, daytime sleeping, and food/fluid intake), were also evaluated. Based on other studies, the hypothesis was that residents who were observed in bed for excessive amounts of time would receive less social engagement, consume less food and fluids, and exhibit more daytime sleeping than residents observed in bed for less time. Cross-sectional data was collected from participants at each NH site including direct observations (hourly and mealtime), resident interviews, medical record review, and physical performance tests. | 2,3 |
| **Results** | | | **Conclusion** | | |
| In multivariate analyses, staffing level remained the strongest predictor of time observed in bed after controlling for resident functional measures (odds ratio=4.89; p=0.042). Residents observed in bed during the daytime in more than 50% of hourly observations were observed also to experience increased daytime sleeping (p<0.001) and less social engagement (p=0.026) and consumed less food and fluids during mealtimes than those observed in bed in less than 50% of observations, after adjusting for resident function (p<0.001). | | | The strongest predictor of observations in bed was NH staffing, with residents residing in lower-staffed homes being nearly six times more likely to have more than 50% observations in bed than residents residing in high-staffed homes. That staffing remained a predictor of observations in bed even when resident functional level was controlled in multivariate analyses emphasizes the importance of staffing. The authors maintain that staff care practices relevant to encouraging residents to be out of bed and resident preferences for being in bed should be examined and improved. Practice recommendations regarding in-bed time should be considered, and further research should seek to inform the development of such recommendations. | | |

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| 95. Benkert R, Pohl JM, Coleman-Burns P. Creating cross-racial primary care relationships in a nurse-managed center. *Journal of Cultural Diversity.* 2004;11(3):88-99.[95](#_ENREF_95) | To describe how nurse practitioners (NPs) and patients in cross-racial relationships developed primary care relationships in one nurse managed center (NMC). | The sample consisted of 20 cross-racial, NP-patient dyads (N=20) in one primary care NMC. | Qualitative  Cross-Sectional | Twenty cross-racial NP-patient dyads participated in individual audiotaped interviews regarding their ongoing relationships and the impact of the NMC. Since the primary researcher was a white colleague of the NPs, the research team chose to use four NP graduate students as interviewers for the study. Two of the students were African American; two were white. All interviews were race-concordant and were 45 minutes to 3-hours in length. Each NP was interviewed five times, once for each nurse practitioner-nurse patient relationships (NP-NPRs), and each patient was interviewed once. The interview guide consisted of five primary areas: general background, the NP-NPR process, comparison to other primary care relationships, skills used in the NP-NPR, and the effect of the NMC on the NP-NPR. | 2 |
| **Results** | | | **Conclusion** | | |
| One difference which occurred in early visits was the perceptions regarding who was in control of the dyad's progression. The NPs described patients' “caution” as reflective of African American women's poor treatment in health care; all NPs thought the NP-NPR would progress if the NP used the "right skills." Eighteen patients described their own life history, values and beliefs as the major determinants of their willingness to return. The provider's "attitude" would influence them, but half of the patients believed that the patients' "own attitude" and their perceived "read" of the provider was more influential than the provider's behavior. The recognition of skin color differences was a distinct difference in perspective between the dyadic partners. Initially, most patients and NPs described skin color as an unimportant factor. Yet, upon further discussions with interviewers, patients described, "reading the attitude" of the provider. The NP's "attitude" was a code word for the patient's interpretation of the NP's racial views. Four patients stated that they were "cautious" with the white NP based on previous experiences but they did not describe a distinct assessment based on skin color. The NPs talked about class issues as more important than skin color. During discussions of what kept the dyad together, all of the NPs and patients described the themes of time, trust and relationship. Time was the most critical element that promoted an ongoing connection. The two other themes, trust and relationship, were dependent on time. | | | Primary care within this nurse-managed center provided an opportunity to better understand a sustained connection between white female nurse practitioners and black female patients through a more informed and reconstructed account of twenty cross-racial relationship trajectories. Even with racial and socioeconomic differences, most dyadic partners worked to achieve sustained NP-NPRs. Yet, significant relationship work was needed by both partners to overcome communication misunderstandings, contextual aspects of cross-racial interactions and other overt and covert perceptions. | | |

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| 96. Binkley C, Furr LA, Carrico R, et al. Survey of oral care practices in US intensive care units. *American Journal of Infection Control.* May 2004;32(3):161-169.[96](#_ENREF_96) | To determine the type and frequency of oral care in intensive care units (ICUs) in the U.S. and the attitudes, beliefs, and knowledge of health care workers. | A randomly selected survey of ICUs (N=102) within the continental U.S. participated with health care workers (N=556) as respondents. | Quantitative  Cross-Sectional | The 27-item questionnaire, the Survey of Oral Care Practices in Intensive Care Units, was designed to gather information related to current oral care practices, training, and attitudes among nurses in ICUs across the U.S. A 5-point Likert scale of Strongly Agree, Somewhat Agree, Neither Agree nor Disagree, Somewhat Disagree, or Strongly Disagree was used to assess respondents’ attitudes and beliefs about oral care. Respondents were asked how often, if ever, they use the following supplies: foam swabs, manual toothbrushes, electric toothbrushes, moisture agents, toothpaste, and mouthwash. If mouthwash was used, respondents were asked to identify the type. Two items addressed previous oral care training, and 3 queried respondents’ attitudes regarding additional oral care training. To assess the support and emphasis provided by the institution, respondents were asked to respond on a Likert scale to the questions regarding supplies, equipment, and time. | 1 |
| **Results** | | | **Conclusion** | | |
| Oral care was perceived as a very high priority for mechanically ventilated patients by over 91% of nurses. Although 63% (N=346) of respondents found cleaning the oral cavity to be difficult, only 43% (N=236) found it to be unpleasant. More than 60% (N=334) of the nurses found that no matter what they did, the mouths of their mechanically ventilated patients seemed to get worse the longer they were on the ventilator. No significant differences in oral care attitudes were found by type of hospital except that nurses in nonprofit hospitals reported oral care to be a higher priority than nurses working in for-profit hospitals (t=2.34, p=0.02). Early in the survey, nurses were asked to respond to the statement ‘‘I have been given adequate training in providing oral care.’’ Using a Likert scale with 5 representing Strongly Agree, the mean response was 4.48, with approximately 88% (N=488) of respondents agreeing that they had received adequate training. Foam swabs, mouthwashes, and moisture agents were the primary materials used. Manual toothbrushes and toothpaste were used once a day or less by 40% (N=210) of respondents, and approximately 38% (N=200) never used manual toothbrushes. The majority of nurses indicated a need for research-proven oral care standards and desired to learn more. | | | Effective oral care that includes toothbrushing and antimicrobial solutions has been shown to improve patient oral health and may significantly reduce respiratory infections in mechanically ventilated patients. In this random sample of ICUs, oral care methods were not consistent with current research and oral care protocols. The care delivered may be ineffective in removing dental plaque and respiratory pathogens from the oropharynx of ventilated patients. The authors suggest that large, multiple-site clinical trials, changes in nursing curricula, national guidelines, and multifaceted interventions may be required to change oral care practice in ICUs. | | |

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| 97. Bostick JE. Relationship of nursing personnel and nursing home care quality. *Journal of Nursing Care Quality.* 2004;19(2):130-136.[97](#_ENREF_97) | To examine the associations between nurse staffing hours and 6 quality indicators: physical restraints, weight loss, incontinence, late loss activities of daily living decline, stages 1 to 4 pressure ulcers, and problem behaviors toward others. | The sample consisted of long-term care facilities (N=413). | Quantitative  Cross-Sectional | The minimum data set (MDS) is a federally mandated comprehensive nursing home data set generated by the Resident Assessment Instrument, consisting of more than 400 clinical items. This system provides an assessment of each long-term care facility resident’s functional capabilities. The Online Survey Certification and Reporting (OSCAR) is a national database evolving from the Medicare/ Medicaid Automated Certification System. OSCAR is composed of information entered by state surveyors during periodic inspections and/or certification of Medicare and Medicaid healthcare facilities. For this study, the data from OSCAR were successfully matched to 485 facilities in the MDS database. Logistic regression methods were used to examine the association between the dependent variables (quality) and the independent variables (staffing), after adjusting for facility characteristics including case mix, chain ownership, size, location, and type of control. Six dependent variables were calculated for each nursing home: prevalence of weight loss, bladder or bowel incontinence, stages 1 to 4 pressure ulcers, problem behaviors toward others, late loss activities of daily living (ADL) decline, and daily physical restraint use. | 3 |
| **Results** | | | **Conclusion** | | |
| No significant associations between professional nurse (RN), licensed practice nurse (LPN), or nursing aide (NA) staffing hours and the prevalence of 3 of the 6 quality indicators: physical restraints, weight loss, and problem behavioral symptoms toward others. A statistically significant association was found between RN hours and the prevalence of pressure ulcers (p=0.03). A 6-minute increase in RN time was associated with a 3% reduction in the chance of one resident developing a pressure ulcer. There were significant associations between LPN hours and the prevalence of late loss ADL decline (p=0.03) and stages 1 to 4 pressure ulcers (p=0.02). Significant associations were found between NA hours and stages 1 to 4 pressure ulcers (p=0.05) and incontinence (p=0.09). | | | In summary, a greater RN presence is needed to address the complex healthcare needs of older adults. Increasing the number of LPN and NA staff does not automatically improve the quality of nursing care, nor does increasing the number of RN staff alone improve the quality of nursing care. The author believes it would be inappropriate to make specific recommendations for staff mix to resident ratios without further investigation. | | |

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| **Non-Experimental Studies (N=72)** | | | | | |
| **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. Bowden JM, Shaul MP, Bennett JA. The process of changing health risk behaviors: an Oregon rural clinic experience. *Journal of the American Academy of Nurse Practitioners.* 2004;16(9):411-417.[98](#_ENREF_98) | To understand the barriers to changing health behaviors and to identify resources that rural individuals needed to succeed in behavior change by conducting focus groups from a counseling intervention, conducted by nurse practitioners (NP) at a rural clinic in Oregon. | Patients in a rural eastern Oregon county clinic were enrolled in this study (N=74). | Qualitative  Quantitative  Longitudinal | Quantitative data were collected using appraisal forms  that were specific to five behaviors. Qualitative data were from written comments submitted by focus group participants in answer to questions sent prior to each meeting and from written summaries of focus group meetings submitted by the focus group leader. Persons interested in participating filled out an 11-item Health Status Profile (HSP) which asked the person to choose which of these health behaviors he or she wanted to change: a) tobacco use, b) poor diet, c) physical inactivity, d) emotional stress, or e) lack of knowledge about how to manage chronic illness. Participants completed a behavior-specific appraisal form which the NP used to guide a brief counseling session with the participant, including a discussion of barriers to change. Participants received appropriate written educational materials about their chosen behaviors or information about community resources. Each participant returned for 6-month and 12-month visits where the NP asked about progress in changing the selected behavior(s) and offered counseling. At each visit, participants again completed the behavior-specific appraisal form(s). To elicit participants’ perceptions of barriers to change or what resources would have helped them make changes, three focus group meetings were held. | 3 |
| **Results** | | | **Conclusion** | | |
| Of the 11 participants who wanted to change their tobacco use, 1 quit within 6 months and was still not smoking at 12 months, 4 decreased use, and 2 increased use. Of the 43 who wanted to change their diet, the number of people reporting a healthy diet increased from 3 to 13 at 6 months, dropping to 9 at 12 months. Of the 26 who wanted to change physical inactivity, the number reporting moderate activity on a typical day increased from 7 to 10 at 6 months, and was consistent at 12 months. The number of people reporting inactivity on a typical day decreased from 10 to 1 at 6 months, increasing to 4 at 12 months. Of the 16 who wanted to change their emotional stress, the number of people reporting severe distress decreased from 11 to 8 at 6 months and was consistent at 12 months. The number reporting positive well-being increased from 5 to 7 at 6 months, dropping to 3 at 12 months. The 2 participants who wanted to change their lack of knowledge about how to manage chronic illness both reported no change. Issues raised in the focus group discussions provide an overview of the perceived barriers to health behavior change. Both individual lack of will and the rural community environment were identified barriers. | | | Most participants were not successful in changing their health behaviors. The issues raised in the focus group discussions provide an overview of the barriers to health behavior change as perceived by a group of adults in a rural environment. Both individual lack of will and the rural community environment were barriers to adopting new health behaviors. NPs in rural health care clinics could provide important support for individuals attempting to adopt new health behaviors. Specific suggestions from focus group participants included discussing risky behaviors more often, forming support groups that do not charge a fee, and developing a peer-mentoring program. | | |

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| 99. Boyle SM. Nursing unit characteristics and patient outcomes. *Nursing Economics.* 2004;22(3):111-119, 123, 107.[99](#_ENREF_99) | To explore nursing unit organizational characteristics and how they influenced patient outcomes in the form of nurse-sensitive adverse events and failure to rescue were examined. | The sample was comprised of registered nurses (N=390) and 6 months of patient discharges (N=11,496). A 944-bed teaching hospital in the Northeast was the study site while the medical and surgical nursing units in the organization (N=21) served as the unit of analysis. | Quantitative  Cross-Sectional | Researchers examined the relationship between specific organizational unit characteristics and adverse events. Exploration of unit characteristics and particular patient outcomes was also performed. Patient outcomes defined as nurse-sensitive adverse events included falls, nosocomial pressure ulcers, urinary tract infections (UTIs), pneumonia, cardiac arrest, mortality, length of stay (LOS), and failure to rescue (defined as death following any of the listed adverse events). The Nursing Work Index-Revised (NWI-R) survey was administered to the nurses from the 21 units. After testing, a four factor version of the survey was developed: NWI-R(B) which included practice control, nurse/physician collaboration and autonomy, nurse manager support, and continuity/ specialization. NWI-R(B) factor scores were computer for every nurse on each factor and aggregated to unit-level data. | 2 |
| **Results** | | | **Conclusion** | | |
| The correlation matrix revealed a number of significant associations between NWI-R(B) factors and adverse events. Three statistically significant relationships and a number of associations between unit characteristics and adverse events were found. Autonomy/collaboration had an inverse association with failure to rescue and UTIs (r=-0.29) and a positive association with pressure ulcer prevalence. Practice control had a positive association with UTIs (r=0.40). Nurse manager support was correlated inversely with pressure ulcer prevalence (r=-0.31) and death (r=-0.30), but a positive one with failure to rescue (r=0.28). Continuity/specialization had inverse associations with pneumonia (r=-0.33), cardiac arrest (r=-0.31) and LOS (r=-0.30). | | | Study findings suggest a relationship exists between some NWI-R(B) characteristics and certain patient adverse events at the nursing unit level. The influence of staff nurses on adverse events can be measured and quantified in patient outcomes at the nursing unit level. | | |

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| 100. Brannam L, Blaivas M, Lyon M, et al. Emergency nurses' utilization of ultrasound guidance for placement of peripheral intravenous lines in difficult-access patients. *Academic Emergency Medicine.* 2004;11(12):1361-1363.[100](#_ENREF_100) | To describe the patient population for which ultrasound (US)-guided peripheral intravenous lines (IVs) are used and evaluate the success rates for such lines by Emergency Nurses (ENs). | Study was conducted with at convenience sampling of emergency nurses (N=321) in a Level 1 trauma center. | Quantitative  Cross-Sectional | Nurses were asked to fill out a 1-page survey after attempting an US-guided line placement on a patient. Nurses were asked the reason that US-guided access was required. The survey form also asked for the number of blind placement attempts made prior to US use. Nurses were asked to select what they thought was the one main reason contributing to difficulty with blind access and they chose among obesity, intravenous (IV) drug abuse, renal failure, sickle cell anemia, or ‘‘other.’’ Lines that failed rapidly were counted as failures. IV lines that failed during the patient’s stay in the emergency department (ED), but after successful infusion of IV medication or IV fluid boluses were not counted as failures. Outcome measures were EN documentation of patient characteristics creating the need to use US-guided IV placement, and their subsequent success rate. | 1 |
| **Results** | | | **Conclusion** | | |
| A total of 321 survey forms were collected in a five-month period. There were 280 (87%) successful IV attempts using US. Twelve (29%) of the 41 failure patients required central lines, 9 (22%) received external jugular IVs, and 20 (49%) had peripheral IV access placed under US guidance by another nurse or physician. The mean number of attempted blind IV sticks prior to US use was 2.2 per patient (95% confidence interval [CI] = 1.9 to 2.4). There were 79 (26%) patients in whom a blind attempt at IV placement was not made before US because of their history and lack of palpable veins. Excluding patients who had no blind IV attempts, the average number of attempts was 2.9 (95% CI = 2.7 to 3.2). Most patients, 168 (52%), had between one and three blind attempts prior to US utilization. There were four (1.2%) complications, all arterial punctures, noted in the ED. | | | ENs had a high success rate (87%) and few complications with use of US guidance for vascular access in a variety of difficult-access patients. An important advantage of the successful use of US by nursing staff is that they are usually the first to attempt line placement, and will be more likely to successfully complete their task if aided by US. | | |

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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 |
| 101. Brown EL, Bruce ML, McAvay GJ, et al. Recognition of late-life depression in home care: Accuracy of the outcome and assessment information set. *Journal of the American Geriatrics Society.* 2004;52(6):995-999.[101](#_ENREF_101) | To evaluate the accuracy of home care nurses' ratings of the Outcome and Assessment Information Set (OASIS) depression items | Home care nurses (N=64) assessed 220 patients aged 65 and older (N=220) with the OASIS upon admission to a nonprofit, Medicare-certified, voluntary home healthcare agency. | Quantitative  Cross-Sectional | Data on patients came from the start-of-care OASIS, the patient’s home care medical record, and the in-home interviews. Research associates administered patient interviews. The study psychologist monitored interviewer ratings throughout the study. The research associates assessed depressive symptoms that had occurred in the preceding month using the Structured Clinical Interview for Axis I DSM-IV (SCID). The study psychologist reviewed all patient interviews and assigned a diagnosis of major or minor depression. Although informant data were available for many patients, in this study only patient reports of depressive symptoms, which more closely correspond to nurse OASIS ratings at the start of care, were used. A symptom was rated present if the patient reported the symptom occurring most of the day nearly every day for at least a 2-week period in the past month. | 1 |
| **Results** | | | **Conclusion** | | |
| Based on the SCID interview, 36 of 220 (16.4%) patients exhibited depressed mood. Nurses rated 12 of these 36 patients as having a depressed mood, yielding a sensitivity of 33%. Of the 184 patients who did not exhibit depressed mood at the SCID interview, home care nurses agreed in 173 cases (specificity=94%). From a clinical utility perspective, the positive predictive value of nurse ratings of depressed mood on the OASIS (i.e., the percentage of patients rated as having depressed mood on the OASIS who were positive for depressed mood on the SCID) was 52% (12/23). Of the 22 patients exhibiting anhedonia on the SCID, the nurses indicated anhedonia (diminished interest in most activities) on the OASIS in only one case, yielding a sensitivity of 4.5%. In the 198 patients without anhedonia, the home care nurses agreed in 192 cases (specificity=97%). The positive predictive value (PPV) for anhedonia was 14% (1/7). The prevalence of DSM-IV major or minor depression in the 220 patients was 15.9% (N=35). Of the 35 cases of major or minor depression, home care nurses accurately recorded the presence of depression in 13 of 35 cases (sensitivity=37.1%), indicating that the nurses missed almost two-thirds of the depressed patients. | | | Depression is prevalent but undertreated in older home healthcare patients. Given the effect of depression on health and functional outcomes in other medically ill patient populations, finding an effective, efficient method for depression screening in this setting is imperative. Study findings indicate that home care nurses often do not accurately rate OASIS depression items for older adult patients. | | |

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| 102. Burgio LD, Fisher SE, Fairchild JK, et al. Quality of care in the nursing home: Effects of staff assignment and work shift. *Gerontologist.* 2004;44(3):368-377.[102](#_ENREF_102) | To compare a variety of resident and staff outcomes across two types of staffing patterns, permanent (PA) and rotating assignment (RA) and work shift. | The sample included nursing home residents (N=192) who were 60 years of age or older. | Quantitative  Cross-Sectional | A between-groups comparison design was used to  compare residents and certified nursing assistants  (CNAs) from four nursing homes; two self-identified as using permanent assignment (PA) staffing and two as using rotating assignment (RA) staffing. Measures yielded data on verbal interaction among residents and staff, resident disruptive behavior, and specific aspects of resident-staff behavior during care routines.  Other assessments included resident personal  appearance and hygiene, expressed affect, and  CNAs’ job satisfaction, burnout, absenteeism, and  turnover rates. Data were collected within each randomly scheduled nursing home on cohorts of eight residents during a 10-day period. A cohort consisted of a group of residents who resided on the same floor or unit and for whom data were collected concurrently. Researchers collected resident data during both the morning and evening shifts. | 3,5 |
| **Results** | | | **Conclusion** | | |
| Results showed that staffing permanency was significantly different between PA and RA nursing homes across both morning and evening shifts, F=594.30, p<0.0001 and F=185.76, p<0.0001, respectively. Residents in PA homes received significantly higher ratings for personal appearance and hygiene (morning shift=87.4±7.9; evening shift=86.8±7.4) than residents in RA homes (morning shift = 87.1±7.1; evening shift = 84.8±7.7), F(1, 186)=3.94, p=0.048. There was a significant Staff assignment x Shift interaction for expressed sadness, F(1, 185) = 6.31, p=0.0129, and for expressed interest, F(1, 185)=8.19, p=0.0047. There was a significant main effect for staff assignment on job satisfaction, F(1, 173)=6.38, p=0.0124. CNAs working in PA homes scored higher on the measure of job satisfaction (morning shift, X=3.5±0.5; evening shift, X = 3.6±0.6) than CNAs working in RA homes (morning shift, X = 3.3±0.6; evening shift, X = 3.4±0.6). In the activity time-sampling system, there was a main effect for shift for resident disruptive behavior, F(1, 186)=10.83, p=0.0012. There was a significant main effect for shift on personal appearance ratings, F(1, 186)=5.70, p=0.0180; in amount of interest expressed by residents, F(1, 186)=15.71, p<0.0001; on amount of burnout reported, F(1, 173)=5.67, p=0.0183; for turnover rates, X2= 9.435, p=0.0022; and for absenteeism, X2= 9.40, p=0.0022. | | | Results show work-shift differences in resident behaviors (more disruptive behavior and less interest observed on the evening shift) and CNA behaviors (more burnout and absenteeism in the morning, and more turnover in the evening). Surprisingly, RA and PA resulted in few differences in quality-of-care outcome indicators, precluding a clear conclusion about which type of staffing assignment should be recommended to nursing home management. However, staff permanency rates in PA nursing homes was nearly twice that of RA nursing homes. | | |

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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 |
| 103. Cabana MD, Slish KK, Brown R, et al. Pediatrician attitudes and practices regarding collaborative asthma education. *Clinical Pediatrics.* 2004;43(3):269-274.[103](#_ENREF_103) | To determine pediatric physician attitudes and practices regarding approaches to asthma education. | The sample includedpediatricians (N=105) from practices in multiple regions (N=10) of the country. | Quantitative  Cross-Sectional | Baseline data from 10 regions of the country was collected to examine physician attitudes, practice characteristics and setting in relationship to which healthcare professionals provide asthma education in pediatric primary care offices. As part of the baseline evaluation, participating pediatricians were asked to complete a mailed 108-item questionnaire. The variable of interest was pediatric practice use of a multidisciplinary or collaborative approach for asthma education. Respondents were asked, “Who provides asthma education and counseling in your practice?” The categories include physician, nurse or nurse educator, nurse practitioner, medical assistant, respiratory technician, and other. Respondents were asked to indicate their agreement or disagreement with 3 statements about asthma education focused on the frequency, source, and effectiveness of nurses in asthma education. Respondents were asked to describe their practice characteristics including the number and type of physicians and allied professionals at their office, their primary employer, and practice setting. | 1 |
| **Results** | | | **Conclusion** | | |
| Physicians generally agreed (98%) that asthma education should be provided frequently. Most disagreed (81%) with the statement that such education should be provided exclusively by a physician and agreed (78%) that nurses were just as effective. In almost all practices a physician was involved in outpatient asthma education; in two thirds of practices, an allied health professional; and in almost half of practices (48%), a registered nurse was involved. In 64% of the practices, a “collaborative approach” is used. In 36% of the practices, a “physician only approach” is used. The type of healthcare professional involved in education was not associated with percentage of patients with Medicaid insurance, practice ownership, or setting. | | | Physician attitudes toward asthma education were not associated with using a collaborative approach to education. Practices with larger numbers of nurses were more likely to employ a collaborative approach. The authors suggest that quality improvement initiatives, such as professional education, that involves the entire healthcare team may have a greater impact on asthma patient outcomes compared to those efforts that focus solely on physicians. | | |

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| 104. Clark EH. Quality of life: A basis for clinical decision-making in community psychiatric care. *Journal of Psychiatric and Mental Health Nursing.* 2004;11(6):725-730.[104](#_ENREF_104) | To illuminate how the concept of quality of life influences the practice of community psychiatric nurses caring for individuals with serious mental illnesses. | Psychiatric nurses (N=19) in multiple community settings. | Qualitative  Cross-Sectional | This descriptive study used grounded theory methodology to illuminate how the concept of quality of life influences the practice of community psychiatric nurses caring for individuals with serious mental illnesses. Nurses were identified who had considerable experience caring for individuals with serious mental illness and were selected by their peers as experts who could best inform the study. Nineteen informants were interviewed individually using a standard serious of broad, open ended questions. Interviews continued until redundancy was achieved. Data were verified through focus groups, member checks and peer debriefing. The constant comparative method was used to categorize data and identify key themes and concepts. During the process of data analysis, peer debriefing was performed in collaboration with an expert psychiatric nurse, and this demonstrated consistency between the independent coding decisions. | 4 |
| **Results** | | | **Conclusion** | | |
| Informants regarded the concept of quality of life as central to nursing practice. Data analysis revealed three ways in which quality of life guided psychiatric practice: it made their role clearer, brought a focus to care and guided their relationships with clients. Quality of life is assessed in light of the individual’s hopes, dreams and values, and within the context of his or her whole life. None of the informants in the study used a formal scale to rate life quality. Informants offered case examples of how the concept of life quality had guided their clinical decision-making. Analysis of these responses suggests that almost any nursing intervention can promote quality of life, depending on individual circumstances. Treating clients with dignity, respect and empowerment is the first step. Meeting basic needs, symptom management, patient education and promoting access to resources are also important actions. Other interventions are more specific to quality of life. These include minimizing barriers to life quality and helping individuals to determine their own quality of life goals. | | | Nurses can promote quality of life by basing their relationships on respect and empowerment, hearing the hopes and dreams of their clients, advocating for and educating clients, and helping individuals develop a broader vision of what their lives could be. Because of the subjective nature of quality of life, nurses must temper their own values with a respect for the individual’s right to self-determination. | | |

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| 105. Colon-Emeric CS, Casebeer L, Saag K, et al. Barriers to providing osteoporosis care in skilled nursing facilities: perceptions of medical directors and directors of nursing. *Journal of American Medical Director Association.* 2004;5(6):361-366.[105](#_ENREF_105) | To identify the barriers to osteoporosis clinical practice guideline use perceived by Medical Directors (MED DIR) and Directors of Nursing (DON) in skilled nursing facilities; and to describe differences in the perceptions of MED DIRs and DONs. | This study consisted of a random national  sample of MED DIRs (N=1,300) and DONs (N=1,300) belonging to the American Medical Directors Association  or the National Association of Directors of Nursing Administration in Long-term Care. | Quantitative  Cross-Sectional | A 24-item survey using a five-point Likert scale was developed. The survey reflected the nursing  home environment and covered four domains: provider beliefs and characteristics, guideline characteristics, patient- and family-related barriers, and environmental barriers. Related questions were grouped a priori into 10 “content areas” thought to represent a single construct or theme: problem acknowledgment, patient/family concern, patient/family compliance, testing availability, safety, reimbursement, regulatory oversight, staff knowledge/time/ability, belief in guidelines, and malpractice liability. The survey instrument was pilot-tested and refined in a convenience sample of 30 nursing facility practitioners in North Carolina before administration to the study population. Response distributions to each item were plotted and differences between MED DIRs and DONs were tested. | 1 |
| **Results** | | | **Conclusion** | | |
| Respondents strongly agreed that fractures are a problem in their facilities and that osteoporosis guidelines are useful and cost-beneficial (mean responses ≥4.0). A large proportion of respondents (at least 40% of the sample) identified multiple patient comorbidities, reimbursement issues, length of stay, and regulatory oversight as barriers to providing osteoporosis care. Respondents were generally positive about statements that patients and families were concerned about fracture prevention, that patients were likely to comply with testing and medications, that bisphosphonates are safe, that staff was knowledgeable about and able to implement osteoporosis guidelines, and that guidelines were cost-effective (mean responses 3.0 –3.9). Responses were neutral but tended to disagree with statements that patients would comply with hip protectors, that staff lacked time to implement osteoporosis guidelines, or that malpractice liability was a concern (mean responses 2.1–2.9). DONs were more likely than MED DIRs to believe that patients and families are concerned about fractures, whereas MED DIRs were more likely to endorse length of stay, staffing issues, and regulatory oversight as influencing treatment decisions. Years of practice and facility size, but not formal geriatrics training, significantly influenced responses. | | | The authors conclude that a number of diverse barriers to osteoporosis care are perceived by nursing home Medical Directors and Directors of Nursing and that many of these can be overcome through education and local care delivery system modifications. The authors suggest that further fracture prevention research and quality improvement initiatives are needed to reduce the high rate of fractures in this frail population. | | |

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| 106. Davis TC, Fredrickson DD, Kennen EM, et al. Childhood vaccine risk/benefit communication among public health clinics: A time-motion study. *Public Health Nursing.* 2004;21(3):228-236.[106](#_ENREF_106) | To investigate whether immunization providers use Center for Disease Control Vaccine Information Statements (VISs) and inform parents about vaccine risks and benefits prior to childhood immunization in public health clinics. | Childhood vaccination visits (N=246) were observed in urban public health clinics (N=2). | Quantitative  Cross-Sectional | Research assistants shadowed 246 childhood immunization visits of children aged 4 and under, in two urban public health clinics (PHCs). Vaccine communication variables were recorded using a 41-item checklist, which included parent demographic questions, information about VIS distribution, what risk/benefit communication took place, who initiated discussion, and how long it lasted. After the visit, parents were asked six questions to determine their satisfaction with the public health nurses’ (PHNs’) discussion of three specific aspects of the vaccine communication (side effects, risks, and benefits), their confidence in handling possible side effects and risks, and their trust in the PHN. These were written on a 10-point scale, with “0” being the worst and “10” being the best. | 1,2 |
| **Results** | | | **Conclusion** | | |
| Distribution of all pertinent VISs was observed in 89% of visits. The VIS sheets were given exclusively by the clerks in both clinics. VIS distribution was significantly lower in one of the sites (74% vs. 99%), where one clerk asked parents of previously immunized children if they wanted the VISs. Public health nurses (PHNs) frequently discussed potential vaccine side effects (91%), treatment of side effects (91%), and the vaccine schedule (93%). Contraindications were screened in 71% of visits. Benefits were discussed in 48% of visits and severe risks in 29%. The national Vaccine Injury Compensation Program (VICP) was never discussed. The clinic visits took an average of 20 minutes. The PHNs’ message concerning side effects, risks, benefits, screening for contraindications, and discussion of the next immunization visit took an average of 16 seconds, and a median of 11 seconds [with a range of 0–120 seconds (with 0 being no education given)] and a standard deviation of 15.6 seconds]. This was less than 3% of total exam room time. The 16 seconds did not include time taken to list vaccines that were to be given that day, discuss the long-term immunization schedule, or administer the vaccines. Parents asked questions about vaccines in 27% of visits at each site. Parental satisfaction with the vaccine information the PHNs gave was high. On a 10-point scale, on averages, parents gave high ratings to discussion of side effects (M=9.1 and SD=2.0), benefits (M=8.9 and SD=2.1), and risks (M=8.1 and SD=3.0). Parents reported a high level of trust in the PHN (M=9.4). | | | Although compliance with mandated VIS distribution and practical vaccine communication was high, the authors note that there is room for improvement in the discussion of benefits, serious risks, and the VICP. They suggest that PHNs may not be communicating to parents about these factors because state/clinic policy does not require such discussion. They recommend that standardized child immunization policies require discussion of vaccine risks/benefits and the VICP, which may require training for nurses. | | |

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| 107. Ehrlich PF, Seidman PS, Atallah O, et al. Endotracheal intubations in rural pediatric trauma patients. *Journal of Pediatric Surgery.* 2004;39(9):1376-1380.[107](#_ENREF_107) | To determine the effectiveness of field endotracheal intubations (ETI) in rural pediatric trauma patients. | The sample was comprised of trauma patients aged 18 and younger requiring ETI (N=105) at a single urban pediatric level 1 trauma care center. | Quantitative  Cross-Sectional | This study was a 10-year retrospective review from 1991 through 2000. All pediatric trauma patients 18 years old and younger in whom ETI was attempted were identified from the trauma registry and were included. Data from pre-hospital provider reports, transferring hospital, trauma registry, and hospital chart were reviewed. Data collected included patient demographics, mechanism of injury, indication and location of ETI, the person attempting the intubation, number of attempts, complications from ETI, patient Glascow Coma Scale (GCS), and outcome. In accordance with the American College of Surgeons requirements, pediatric trauma complications are reviewed concurrently at monthly performance improvement audits. The ETI was performed by paramedics or trauma flight nurse specialists’, Emergency Department physicians, or anesthesiologists (transferring hospital or trauma center). Elective intubations and children with incomplete data were excluded from the study analysis. | 3 |
| **Results** | | | **Conclusion** | | |
| One hundred fifty-five ETIs (1 to 6 per patient) were attempted in 105 children. Fifty-seven percent of the ETIs were attempted in the field, 22% in transferring hospital, and 21% at the trauma center (TC). Successful intubation on first attempt was 67% (field), 69% (referring hospital), and 95% (TC). Subsequent ETI attempts had failure rates of 50% (field) and 0% (referring hospital, TC). Indication for ETI included fear of losing airway control (37%), closed head injury (36.1%), respiratory rate less than 10 or greater than 40 (11.2%), cardiopulmonary arrest (6.5%), respiratory arrest (4.6%), and airway obstruction 4.6%. Only 9.3% of children could not be oxygenated or ventilated by bag valve mask (BVM) before ETI. Twenty-three percent had complications directly related to ETI. The relative risk of an airway complication was 2.5x higher with more than one ETI attempt (p<0.05). Four percent of the airway complications occurred in TC, 29% (transferring hospital) and 66% (field, p<0.05), respectively. Airway complications and multiple ETIs were associated with transport delay, lower GCS, longer hospital stay, and lower discharge GCS (p<0.001) but independent of injury severity score, sex, age, and survival (p>0.05). | | | This retrospective study highlights a number of novel and important issues pertaining to pediatric rural trauma and airway management. Field intubation success rates are poor. Successful pediatric intubations relate to the skill of the person performing the intubation. Failed ETI attempts appear to produce a spiral effect resulting in multiple failed attempts—regardless of whether BVM adequately maintains the airway—and this delays transfer to definitive care. This study underscores the problems of ETI in children in rural trauma and presents some important clinical implications. Resources need to focus on novel and creative methods of educating and maintaining both pediatric BVM and ETI skills for trauma care providers. Airway protocols clearly need to emphasize BVM in children until transfer to a trauma center, especially if the provider adequately establishes oxygenation and ventilation. The role of education cannot be underestimated. | | |

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| **Non-Experimental Studies (N=72)** | | | | | |
| **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. Elder R, Neal C, Davis BA, et al. Patient satisfaction with triage nursing in a rural hospital emergency department. *Journal of Nursing Care Quality.* 2004;19(3):263-268.[108](#_ENREF_108) | To examine what relationships or differences exist between patient and nurse characteristics, satisfaction with triage nurse caring behaviors, general satisfaction with the triage nurse, and intent to return to a rural hospital emergency department (ED). | The sample was comprised of ED nurses (N=11) and ED patients (N=65). | Quantitative  Cross-Sectional | This descriptive study was conducted in a 401-bed teaching hospital in a small, rural southern city having a level-3 trauma center. According to admission department records, the ED averages 28,000 annual ED visits. All ED staff nurses who chose to participate were included in the study. Researchers asked the nurses to participate either in person or by telephone. An identifier was assigned to each nurse and matched with the patient she/he triaged. The ED patient sample was stratified into 2 triage classifications: delayed and urgent. The classification of delayed consists of patients with minor illness/injury who are able to safely wait an extended period before treatment and patients who would recover satisfactorily without treatment. The classification of urgent consists of patients with illness/injury who require evaluation and treatment but may wait 1 or 2 hours without any undue risk. The ED patient sample was obtained from the ED patient logs, which were reviewed every 24 hours. Nurses and patients were asked to respond to demographic forms and the Consumer Emergency Care Satisfaction Scale (CECSS) Adapted. | 2 |
| **Results** | | | **Conclusion** | | |
| No significant differences in triage patient characteristics and triage nurse characteristics with regard to patient satisfaction, caring satisfaction, and intent to return were demonstrated. Patients who perceived themselves as seriously injured were determined to be less likely to return (p<0.05), less likely to be satisfied with the triage nurse (p<0.01), and less likely to view the triage nurse as caring (p<0.01). A strong positive relationship was found (p<0.01) between the nurse’s acuity rating and the patient’s perception of condition. Patients and nurses in the study agreed on the patient’s acuity level at the time of triage. There was a strong positive relationship between patient satisfaction with triage nurse caring behaviors, general satisfaction with the triage nurse, and intent to return to that ED. The more satisfied the patient was with triage nurse caring behaviors and generally with the triage nurse, the more likely the patient was to return to that ED. | | | Although this study demonstrated no significance between the patient or nurse characteristics and patient satisfaction, or triage nurse caring behaviors and intent to return, the authors suggest that replication studies be undertaken to validate these findings. New studies should evaluate strategies for improving patient satisfaction and increasing quality care in the ED. There is a significant gap in knowledge about patient satisfaction with ED triage. The authors conclude that additional study is needed of how the triage nurse affects the overall outcomes of care for patients and their satisfaction with care. Patient satisfaction is an area that needs further exploration because of its effect on quality care. | | |

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| 109. Epstein AE, Swarens A, Skadsen A, et al. Comparison of perception of health status by physicians, nurses, and patients in the Dual-chamber and VVI Implantable Defibrillator (DAVID) trial. *American Journal of Cardiology.* 2004;93(1):120-121[109](#_ENREF_109) | To determine the correlation between health and assessments of quality of life assessments by patients, physicians and nurses using the Dual-chamber And VVI Implantable Defibrillator (DAVID) clinical trial setting. | The sample was comprised of patients in a DAVID trial (N=488). | Quantitative  Longitudinal | The DAVID study was designed to determine whether the use of dual-chamber pacing at a base rate of 70 beats/minute with rate responsiveness would lead to superior outcomes compared with base-rate pacing at a rate of 40 beats/minute in patients receiving an implantable cardioverter-defibrillator for standard indications. Physicians (MDs), nurses (RNs), and patients were asked to independently assess the perceived health status of the patient on a visual analog scale (VAS). The VAS measures the intensity or magnitude of subjective feelings. The VAS is administered and scored as follows: a straight line of a specified length is labeled at each end with dimensions of worst or best feelings, and marked at the point that most closely matches the intensity of the responder’s feelings. The mark is then scored on a scale of 1 to 100 by measuring the distance from the low end of the scale to the responder’s mark (in millimeters). Changes in individual scores and concordance between responders were compared over time. | 2 |
| **Results** | | | **Conclusion** | | |
| VAS data were available for 488 patients at baseline, for 383 patients at 3-month follow-up, and for 298 patients at 6-month follow-up. At baseline, the patient, MD, and RN VAS scores were (mean ± SD) 55 ± 25, 55 ± 20, and 55 ± 18, respectively. MD and RN scores were statistically concordant with patient scores at each time point. At 3 months, the patient, MD, and RN VAS scores were 64 ± 21, 64 ± 19, and 63 ± 19, respectively. Concordance between all scores improved over time. Among patients surviving until 6 months after baseline, all scores improved over time, with the strongest improvement occurring between baseline and 3 months. Concordance between groups also improved over time, especially between the patient and MD VAS scores. | | | MDs, RNs, and patients had concordant assessments of patients’ perceptions of health status in the DAVID study. Furthermore, the assessments of RN coordinators were more strongly correlated with patients’ self-assessments than those of study MDs. All scores improved with time. | | |

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| 110. Fields SK, Hojat M, Gonnella JS, et al. Comparisons of nurses and physicians on an operational measure of empathy. *Evaluation and the Health Professions.* 2004;27(1):80-94.[110](#_ENREF_110) | To compare nurses and physicians on their responses to the Jefferson Scale of Physician Empathy (JSPE). | The study samples consisted female nurses (N=56) and female physicians (N=42) in an internal medicine residency program. | Quantitative  Cross-Sectional | The JSPE empathy scale was distributed to the nurses and physicians who were asked to anonymously complete and return the scale. The reliability coefficients were calculated for the two samples. Total empathy scores for the two study groups were compared, and their scores on each item of the empathy scale were also compared by using multivariate analysis of variance (MANOVA), followed by univariate analysis of variance (ANOVA) for comparisons on the items. The Duncan post hoc mean comparison test was also used for examining the direction of the statistically significant differences between the two groups on each individual item of the JSPE. Also, effect-size estimates were calculated to examine the clinical significance of the statistically significant findings. | 1 |
| **Results** | | | **Conclusion** | | |
| Although the mean for nurses (M=117.2, SD=14.05) was less than 2 points higher than that for physicians (M=115.7, SD=13.60) on their JPSE scores, the difference was not statistically significant, t (96) = 0.53, p>0.05). However, comparisons of the two groups on their responses to the individual items of the JSPE in a MANOVA showed statistically significant differences (Lambda=.64, multivariate F (20, 76)=2.14, p<0.01). The results of ANOVA showed significant differences between the two groups on 5 (of 20) items of the scale. The Duncan test indicated that nurses scored significantly higher than physicians on the following three items: “It is difficult for me to view things from my patients’ perspectives” (reverse-scored item, effect size=0.47); “I believe that empathy is an important therapeutic factor in medical or surgical treatment” (effect size=0.41); and “I try to imagine myself in my patients’ shoes when providing care to them” (effect size=0.40). Physicians scored higher than nurses on the following two items: “I do not enjoy reading non-medical literature or the arts” (reverse-scored item, effect size=–0.46); “my understanding of how my patients and their families feel does not influence medical or surgical treatment” (reverse scored, effect size=–0.43). | | | The findings of this study suggest that the JSPE is a reliable tool that can be used in assessing empathy among health professionals, including nurses. The findings of group comparisons suggest that there are more similarities than differences between female nurses and physicians on their responses to the empathy scale. | | |

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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 |
| 111. Furr AL, Binkley CJ, McCurren C, et al. Factors affecting quality of oral care in intensive care units. *Journal of Advanced Nursing.* 2004;48(5):454-462.[111](#_ENREF_111) | To investigate how hospital factors and nurses’ background, education, and attitudes influence the quality of oral care in intensive care units (ICUs). | ICU directors (N=420) from multiple ICUs (N=120). | Quantitative  Cross-Sectional | The proposed model suggests that the provision of oral care in ICUs is more than a function of education and experience of individual nurses, and includes both the organizational effects of the hospital environment and subjective attitudes that nurses may hold about oral care. Several hypotheses were tested to determine the relationship between nurses’ background, attitudes, and perception of hospital factors and the quality of oral care in ICUs. The analysis also involved constructing a series of hierarchical multivariate regression equations to test the model proposed. Data for the study were taken from the 2002 National Survey of Oral Care Practices in Intensive Care Units and used a relatively short 27-item questionnaire developed by the investigators to gather literature-based information related to current oral care practices, education, and attitudes among nurses in ICUs across the U.S. | 1 |
| **Results** | | | **Conclusion** | | |
| The path model shows that nurses’ oral care education, having sufficient time to provide care, prioritizing oral care, and not viewing oral care as unpleasant had direct effects on the quality of provided care. Intensive care unit experience, oral care education, and having sufficient time had indirect effects. | | | Improving the quality of oral care in intensive care units is a multi-layered task. Reinforcing proper oral care in education programs, de-sensitizing nurses to the often-perceived unpleasantness of cleaning oral cavities, and working with hospital managers to allow sufficient time to attend to oral care are recommended. | | |

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| 112. Goodman P, Mackey MC, Tavakoli AS. Factors related to childbirth satisfaction. *Journal of Advanced Nursing.* 2004;46(2):212-219.[112](#_ENREF_112) | To examine multiple factors for their association with components of childbirth satisfaction and with the total childbirth experience. | The sample was comprised of low-risk post-partum women, with uneventful vaginal deliveries (N=60) at medical centers in the Southeast U.S. (N=2). | Quantitative  Cross-Sectional | A convenience sample of low-risk postpartum women, who had uneventful vaginal deliveries of healthy full-term infants participated in the study prior to hospital discharge. In addition to a background form which measured the extent to which labor expectations were met, and included information on childbirth preparation and demographic characteristics, three other instruments were used. The McGill Pain Questionnaire provides a pain rating index which is a summated score (0–78) based on the rank order of words chosen by respondents in each of 20 groups of verbal descriptors. A high score reflects a high level of pain. The Labor Agentry Scale is a 29-item summated rating scale that measures personal control during childbirth. Participants indicate the degree of agreement or disagreement with each item on a 7-point Likert scale. The Mackey Childbirth Satisfaction Rating Scale is a 34-item scale measuring childbirth satisfaction. It contains five subscales representing the behaviors of the major participants in the event and one subscale for global overall labor and delivery evaluation. Respondents indicate their degree of satisfaction or dissatisfaction with each item on a 5-point Likert scale. | 2 |
| **Results** | | | **Conclusion** | | |
| Personal control was a statistically significant predictor of total childbirth satisfaction (p=0.0045) and with the subscale components of satisfaction (self, partner, baby, nurse, physician and overall). Personal control (t =3.81, p<0.001), labor pain (t=-3.34, p=0.002) and expectations (t=-3.13, p=0.003) were the significant variables explaining the variance in satisfaction with self. Both personal control (t=2.48, p=0.017) and childbirth preparation (t=-2.46, p=0.017) were statistically significant variables explaining the variance in satisfaction with partner. | | | In spite of the limitations (small sample size, not randomly selected), this study demonstrates that childbirth satisfaction is multidimensional with different factors predicting the various dimensions of satisfaction. The authors suggest that further research should include a larger sample and incorporate other potential predictors of childbirth satisfaction. | | |

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| 113. Guttu M, Engelke MK, Swanson M. Does the school nurse-to-student ratio make a difference? *Journal of School Health.* 2004;74(1):6-9.[113](#_ENREF_113) | To examine the relationship between different school nurse-to-student ratios, level of health services provided in schools, and student outcomes in a 21-county region in eastern North Carolina served by a regional school nurse. | The sample was comprised of counties in North Carolina (N=21) served by a regional school nurse consultant. | Quantitative  Cross-Sectional | Data on chronic conditions, social morbidities, injuries, and vision screening were obtained from information given on the North Carolina Annual Survey of School Health Services, a self-report measure completed by school nurses. Chronic conditions were identified in the survey as percentage of students with those specific conditions known to the school nurse. The most common conditions identified by nurses were asthma and diabetes. Recent legislation and policy initiatives related to asthma and diabetes fostered school nurse involvement with these students, so data related to these groups were collected more consistently across counties and tended to be more reliable. Therefore, only data related to children with diabetes and asthma were included in the analysis related to chronic illness. Social morbidities are measured by percentage of students receiving individual counseling sessions from the nurse in a variety of categories related to child abuse and neglect, grief counseling, substance abuse, puberty/hygiene, “growing up,” suicide and depression, and unintended pregnancy. Two measures related to the treatment and prevention of injuries were included. Three measures related to vision screening were included. | 1 |
| **Results** | | | **Conclusion** | | |
| The school nurse-to-student ratio in these counties ranged from 1:451 to 1:7,440 based on full-time equivalencies. Two systems offered no school nursing services. A significant correlation was found between the increased presence of school nurses and services provided to children with diabetes (r=-0.52, p=0.000) and asthma (r=-0.43, p=0.002). Schools with better ratios provided more counseling services to children for social conditions such as depression and unintended pregnancy (r=-0.38, p=0.006), and more follow-up for school-related injuries (r=-0.43, p=0.003), and a higher percentage of children with vision problems received follow-up care (r=-0.37, p=0.007). Districts with lower nurse-to-student ratios were more likely to identify children with chronic illnesses, and nurses were more likely to be involved in their care. | | | This study provides a beginning in recognizing the value of lower school nurse ratios and the benefits of such ratios in providing school health services. Injuries, vision problems, and students with special health and psychosocial needs exist on school campuses, whether or not there is a school nurse. The availability of school nurses enhances a safe school environment and promotes student well-being. | | |

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| 114. Harbaugh BL, Tomlinson PS, Kirschbaum M. Parents' perceptions of nurses' caregiving behaviors in the pediatric intensive care unit. *Issues in Comprehensive Pediatric Nursing.* 2004;27(3):163-178.[114](#_ENREF_114) | To describe parents' perceptions of nurses' caregiving behaviors in a Pediatric Intensive Care Unit (PICU) in the Midwestern U.S. | The sample was comprised of mothers (N=10) and fathers (N=9) of children (N=10) in a PICU. | Qualitative  Cross-Sectional | A semi-structured interview was used to collect data and was evaluated by two nurse researchers experienced in interviewing and qualitative research techniques. One researcher interviewed each family. Mother-father pairs were interviewed together, with the exception of the one family whose father was unable to be interviewed at the scheduled time. A general question was asked first: “How has being in the PICU affected your family?” After this question, additional questions were used to obtain information focused on nurses. A specific question pertinent to this study included, “What about the nursing care of your  child? Can you tell me about that?” Interviews were audio taped and were done one to seven days after admission. After the interview, notes were made concerning general impressions, behaviors, and characteristics of the parents and the interview process. The interviews typically were self-limiting to about 20 minutes because parents were anxious to return to their child’s bedside. | 2 |
| **Results** | | | **Conclusion** | | |
| Parents reported nurses engaged in nurturing and vigilant behavior, namely showing affection, caring, watching, and protecting. Parents’ reports suggest that the best nursing behaviors are those that facilitate and complement critical aspects of the parental role, thus reinforcing family integrity during a time of turmoil and uncertainty. Results predominately centered on parents’ reports of nurse behaviors that ensured that children received quality care, and care that included the parents in the care of their children. Positive aspects of care included the following: 1) allowing access and maintaining proximity to the child; 2) reducing stress and uncertainty with ongoing, accurate information and reassurance; 3) conducting nursing care in a competent, coordinated manner; 4) appreciating the individuality of their child; and 5) keeping parents informed of their child’s daily responses and progress. Negative nurse behaviors were identified, which included: 1) separation and exclusion; 2) omissions in communication; and 3) delivery of nursing care without showing affection or protection. Parents used their child as the reference point from which nurse behavior in the PICU was viewed and described. | | | The data indicate that parents in this study wanted nurses to participate in the “nontechnical” aspects of their children’s care, such as nurturing and vigilance. Since both child nurturing and vigilance are key components of a functioning family system, nurse behaviors that exemplify affection, caring, watching, and protecting help to maintain the family system during the crisis events experienced in the PICU. Parental data also indicate that these nurse behaviors may serve as powerful modifiers of parental stress and uncertainty. | | |

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| 115. Harrison TH, Thomas SH, Wedel SK. Success rates of pediatric intubation by a non-physician-staffed critical care transport service. *Pediatric Emergency Care.* 2004;20(2):101-107[115](#_ENREF_115) | To assess endotracheal intubation (ETI) success rates achieved by a small cadre of non-physician critical care transport (CCT) providers. | Boston MedFlight pediatric transports (N=143). | Quantitative  Cross-Sectional | This retrospective study analyzed transport records of consecutive pediatric patients (younger than 13 years) in whom ETI was attempted by a nurse/paramedic (RN/EMTP) CCT crew working under protocols which included neuromuscular blockade (NMB)–facilitated ETI. The CCT service performs scene and inter-facility transports in helicopter, fixed-wing (airplane), and ground critical care vehicles; pediatric patients are transferred to 4 receiving tertiary care centers. During the 10-year study period of January 1992 through December 2001, total transports of 16,559, of which 2,585 (15.6%) were pediatric transports, were performed. Patients were categorized as having had successful ETI if an ETI attempt resulted in intratracheal placement of the tube as judged by standard clinical criteria and by follow-up with receiving hospitals. The relevant information was obtained from review of transport records, which include the follow-up data; no hospital records were reviewed. | 1,3 |
| **Results** | | | **Conclusion** | | |
| During the study period, crew attempted ETI on 143 patients under 13 years. Intubation was successful in 136 cases for an overall ETI success rate of 95.1%. Success rates for ETI in the youngest (younger than 3 years), middle (3–8), and older (9–12) pediatric patients were 90.7% (49/54), 98.2% (55/56), and 97.0% (32/33), respectively (p=0.189). The success of ETI was not associated with mission type or ETI location, but the low frequency of ETI failures translated into wide confidence intervals. The 95% CI for the finding of increased likelihood of successful ETI for scene patients (point estimate for OR=4.4) ranged from 0.5 to 37. Because there were only 2 ETI failures for in-aircraft attempts, a single ETI failure for patients intubated at trauma scenes, and zero ETI failures in patients undergoing ETI in an ambulance, these 3 out-of-hospital settings were combined to compare ‘‘in-hospital’’ versus ‘‘out-of-hospital’’ ETI success. The resulting analysis revealed that out-of-hospital ETI was associated with higher odds of success (OR=1.7), but the finding was not significant (95% CI=0.4 to 8.1, p=0.479). Intubation was successful on a single attempt in 97 cases (71.3% of 136), 2 attempts in 32 cases (23.5%), 3 attempts in 5 cases (3.7%), and 4 attempts in 2 cases (1.5%). | | | Study results support the contention that with intensive initial and recurrent training, a non-physician CCT crew can achieve very high pediatric ETI success rates with minimal complication rate. The authors suggested next steps include an attempt to assess outcome effects associated with implementation of an ETI training program resulting in highly successful airway management; the lack of such outcome data is a weakness of the current study. | | |

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| 116. Hepner DL, Bader AM, Hurwitz S, et al. Patient satisfaction with preoperative assessment in a preoperative assessment testing clinic. *Anesthesia and Analgesia.* 2004;98(4):1099-1105.[116](#_ENREF_116) | To evaluate perioperative care and patient satisfaction with Preoperative Assessment Testing Clinics (PATCs) that coordinate preoperative surgical, anesthesia, nursing, and laboratory care. | Patients (N=857) from a single PATC. | Quantitative  Cross-Sectional | A one-page questionnaire was given to patients presenting to the PATC during three different time periods. The questionnaire consisted of general questions (GENERAL). In addition, patients were asked about their visits with the anesthesia care provider (ANESTHESIA), nurse or nurse practitioner (NURSE), and laboratory technician (LAB). All patients were interviewed and examined by a nurse or nurse practitioner, and an anesthesia resident, certified registered nurse anesthetist, or anesthesia attending. Finally, patients were queried with regard to their overall satisfaction (OVERALL) with the care and service received, the degree to which their questions were answered and how prepared they felt for surgery. The last question on the questionnaire asked patients about their preference for a preoperative assessment done over the Internet. | 2 |
| **Results** | | | **Conclusion** | | |
| The average for the subscale that indicated overall satisfaction was 4.48±0.67 and the average for the total instrument was 4.46±0.55. Although the highest scores were given for subscales describing the anesthesia, nurse, and lab, only the anesthesia subscale improved with time (p=0.007). The subscale that involved information and communication had the highest correlation with the overall satisfaction subscale (r= 0.76; p<0.0001). The satisfaction with the total duration of the clinic visit (3.71±1.26) was significantly less (p<0.0001) than the satisfaction to the other items. | | | Patient satisfaction represents an important clinical end-point that can affect future patient health care decisions. Recognizing that patient decisions have a significant and growing impact on the health care industry, the authors maintain that new health care directions must include an analysis of patient satisfaction. The practitioner and functional aspects of the preoperative visit have a significant impact on patient satisfaction, with information and communication versus the total amount of time spent being the most positive and negative components, respectively. | | |

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| 117. Herr K, Titler MG, Schilling ML, et al. Evidence-based assessment of acute pain in older adults: Current nursing practices and perceived barriers. *Clinical Journal of Pain.* 2004;20(5):331-340.[117](#_ENREF_117) | To report data on current nurse practice behaviors related to evidence-based assessment of acute pain in older adults, perceived stage of adoption of pain assessment practices, and perceptions of barriers to optimal assessment in this population. | The sample consisted of older adult patients hospitalized with hip fracture (N=709) and nurses who care for those patients (N=172) in multiple acute care settings (N=12). | Quantitative  Longitudinal | This paper reports baseline/pre-intervention data obtained from: patient medical records and nurse-completed questionnaires regarding pain management practices. A 19-page medical record abstract instrument was created by investigators with content expertise in acute pain management. The nurse questionnaire included a demographic section, the Perceived Stage of Adoption Instrument and the Barriers to Optimal Pain Management Scale. Data were analyzed to answer the following research questions: 1) what were the pain assessment practices used during the first 72 hours following admission of older adult patients with hip fractures to a non-intensive care unit (ICU) medical-surgical unit?; 2) what are the differences in pain assessment practices used during the first 72 hours between elders with and without dementia?; 3) based on Roger’s Diffusion of Innovation model, what were nurses’ perceived stage of adoption regarding pain assessment in the older adult and in the confused older adult?; and 4) what do nurses perceive as barriers to optimal assessment of acute pain for older adults hospitalized with a hip fracture? | 1 |
| **Results** | | | **Conclusion** | | |
| Data revealed several areas in which pain assessment practices were not optimal. Only 5.5% of the patients had every 4-hour pain assessment for the entire 72 hours. Only 6.6% of the patients had pain location assessment every 4 hours for the first 24 hours, and 1.4% had a pain location assessment every 4 hours for the entire 72-hour period. Pain behaviors were assessed more in patients with a diagnosis of dementia compared to those without dementia, but the frequency of pain behavior assessments was low. For the entire 72-hour period, only 15.3% of analgesic administrations were followed by a reassessment of pain within 60 minutes. All nurses were aware of ways to assess pain in elders, and most (93.6%) believed that use of a pain rating scale is the preferred practice for assessing acute pain in older adults. However, only 41.9% of nurses reported that they always used a pain rating scale, whereas the remaining 58.1% reported that they sometimes used one. Nurses reported that difficulty communicating with patients created the greatest challenge in managing pain (X=2.55, SD=0.7). | | | Study findings suggest that pain is not being assessed and reassessed in a manner that is consistent with current practice recommendations in older adult patients with pathologic processes that highly suggest the presence of acute pain. The authors suggest that continued research on intervention approaches to improve the use of evidence-based practices is needed to move the developing science for management of acute pain in the older adult to the bedside. | | |

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| 118. Hoffman LA, Happ MB, Scharfenberg C, et al. Perceptions of physicians, nurses, and respiratory therapists about the role of acute care nurse practitioners. *American Journal of Critical Care.* 2004;13(6):480-488.[118](#_ENREF_118) | To examine contributions of acute care nurse practitioners to medical management of critically ill patients from the perspectives of 3 disciplines: medicine, respiratory care, and nursing. | The sample consisted of physicians (N=9), respiratory therapists (N=15), and staff nurses (N=29) from multiple intensive care units (ICUs) (N=2). | Quantitative  Cross-Sectional | Attending physicians, respiratory therapists, and nurses were asked to list 3 advantages and 3 disadvantages of collaborative care provided by acute care nurse practitioners. The survey instrument was distributed by hospital mail, direct approach, or the Internet. Each clinician was asked to complete and return the survey by hospital mail, by putting it in a large envelope provided in the staff lounge, or by placing the survey in a sealed envelope for pickup by an investigator. Respondents were asked to indicate their professional affiliation by checking a box labeled attending physician, registered nurse, or respiratory therapist. No other identifying information was obtained. Respondents were asked not to place their names on the form. Qualitative methods (coding/constant comparative analysis) were used to identify common themes and subthemes. | 1 |
| **Results** | | | **Conclusion** | | |
| Responses were grouped into 4 main themes: accessibility, competence/ knowledge, care coordination/communication, and system issues. Of the 4 categories, the most responses were received for care coordination/communication (N=107). Acute care nurse practitioners were valued for their accessibility, expertise in routine daily management of patients, and ability to meet patient/family needs, especially for “long-stay” patients. Also, they were respected for their commitment to providing quality care and for their communication skills, exemplified through teaching of nursing staff, patient/family involvement, and fluency in weaning protocols. Physicians valued acute care nurse practitioners’ continuity of care, patient/family focus, and commitment. Nurses valued their accessibility, commitment, and patient/family focus. Respiratory therapists valued their accessibility, commitment, and consistency in implementing weaning protocols. | | | Responses reflected unique advantages of acute care nurse practitioners as members of medical management teams in critical care settings. Despite perceptions of the acute care nurse practitioner’s role as medically oriented, the themes reflect a clear nursing focus. | | |

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| **Non-Experimental Studies (N=72)** | | | | | |
| **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 |
| 119. Horn SD, Bender SA, Ferguson ML, et al. The national pressure ulcer long-term care study: Pressure ulcer development in long-term care residents. *Journal of the American Geriatrics Society.* 2004;52(3):359-367.[119](#_ENREF_119) | To identify resident, treatment, and facility characteristics associated with pressure ulcer (PU) development in long-term care residents. | Residents (N=1,524) in long-term care facilities throughout the U.S. (N=95). | Quantitative  Longitudinal | Providers were non-randomly selected based on their willingness to participate, provide company personnel for the purposes of study coordination, and collect data from at least 150 resident medical records. All study residents had a length of stay of 14 days or longer and were identified as being at risk of developing, but not having, a PU at study start. Each resident was followed for up to 12 weeks. Collected data included resident characteristics (e.g., demographics, medical history, severity of illness using the Comprehensive Severity Index, Braden Scale scores, nutritional factors), treatment characteristics (nutritional interventions, pressure management strategies, incontinence treatments, medications), staffing ratios and other facility characteristics, and outcome (PU development during study period). Data were obtained from medical records, Minimum Data Set, and other written records (e.g., physician orders, medication logs). | 3 |
| **Results** | | | **Conclusion** | | |
| During the study period, 71% of subjects (N=1,081) did not develop a PU; the remaining 29% of residents (N=443) developed a new PU. Resident, treatment, and facility characteristics associated with greater likelihood of developing a Stage I to IV PU included: residents with a greater severity of illness (p<0.001), history of a recent PU (p<0.001), significant weight loss (p=0.008), oral eating problems (p=0.010), use of a mechanical device to contain urine (p<0.001), and use of a positioning device (p=0.029) were more likely to develop a PU. Variables associated with less likelihood of developing a PU were new admissions (p<0.001), tube-fed residents receiving a disease-specific (p=0.009) or high-calorie/high-protein (p<0.001) formula for more than 21 days, orally fed residents receiving a standard oral medical nutritional supplement for more than 21 days (p=0.016), use of antidepressants (p=0.027), use of disposable briefs (p=0.005), receiving more than 2 hours of nurses’ aide care time (p<0.001), more than 15 minutes of registered nurse care time (p≤0.001) per resident per day, and LPN turnover of less than 25% (p<0.001). When Stage I PUs were excluded from the analyses, the same variables were significant, with the addition of fluid orders associated with decreased likelihood of developing a PU. | | | A broad range of factors, including nutritional interventions, fluid orders, medications, and staffing patterns, are associated with prevention of PUs in long-term care residents. Authors suggest that research-based PU prevention protocols can be developed based on this study’s results that include these factors and target interventions for reducing risk factors. | | |

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| 120. Howell EA, Concato J. Obstetric patient satisfaction: Asking patients what they like. *American Journal of Obstetrics and Gynecology.* 2004;190(1):175-182.[120](#_ENREF_120) | To determine pertinent attributes of women's hospital experience related to the delivery of their children and to use open-ended responses from women to develop a taxonomy for classifying patient satisfaction in obstetrics. | The sample consisted of postnatal, obstetric patients (N=76) in one hospital. | Qualitative  Cross-Sectional | A convenience sample was recruited by identifying patients through census logs on the postpartum floors and approaching patients during the enrollment period. An interview guide was developed which included a standard script of open-ended questions constructed to determine patient likes and dislikes regarding the care they received while in the hospital for the delivery of their children. In addition, patients were also asked to rate the overall quality of care they received on a 10-point scale, with 0 being the worst and 10 being the best. The interview also contained questions on demographic factors, including age, insurance type, gravidity, parity, marital status, and race. Medical records were reviewed for infants’ Apgar scores, gestational age at delivery, and hospital course. Responses were transcribed, arranged into distinct groups, and organized as a taxonomy of patient satisfaction. | 2 |
| **Results** | | | **Conclusion** | | |
| The final taxonomy derived from patient responses was divided into six main axes related to physicians, nurses, other staff, special services, hospital attributes, and personal focus. Attributes of physicians included 10 items, such as competence, knowledge, and communication skills. Eight attributes of nurses were identified, including items such as competence, accessibility, and supportiveness; and three attributes of other staff were identified. Thirteen attributes of specific services were identified, including items such as anesthesia accessibility, post-delivery pain management, proximity of the newborn infant, timing of feedings, infant security, maternal infant bonding, and breast-feeding education. Ten hospital attributes were identified, such as family friendly atmosphere, housekeeping, and quality of food. Personal focus included seven items that reflected the personal perspectives of patients, including their preferences being respected, having choices and options, and feeling understood. Although the current study was not intended to produce quantitative results, some general findings can be reported. For example, the three most frequent ‘‘likes’’ among women were support from nurses, friendliness of nurses, and infants rooming in. In contrast, the top three reported ‘‘dislikes’’ were pain (overall experience), proficiency of the epidural, and quality of food. | | | This approach to measuring patient satisfaction in the postpartum inpatient setting produced a clinically relevant taxonomy and has the advantage of giving results that are clearly understood and comprehensive. This simple instrument uses relatively few questions to identify a broad scope of patient satisfaction in the postpartum 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 |
| 121. Intrator O, Zinn J, Mor V. Nursing home characteristics and potentially preventable hospitalizations of long-stay residents. *Journal of the American Geriatrics Society.* 2004;52(10):1730-1736.[121](#_ENREF_121) | To examine the association between having a nurse practitioner/physician assistant (NP/PA) on staff, other nursing home (NH) characteristics, and the rate of potentially preventable/ avoidable hospitalizations of long-stay residents, as defined using a list of ambulatory care-sensitive (ACS) diagnoses. | The sample consisted of residents (N=54,631) in urban nursing home facilities (N=663). | Quantitative  Longitudinal | A cross-sectional prospective study using Minimum Data Set (MDS) assessments, Centers for Medicare and Medicaid Services inpatient claims and eligibility records, On-line Survey Certification Automated Records (OSCAR), and Area Resource File (ARP) was conducted with nursing home residents from facilities with a quarterly or annual MDS assessment in the 2nd quarter of 1997, who had a prior MDS assessment at least 160 days before, and who were not health maintenance organization members throughout 1997. A 180-day multinomial outcome was defined as having any hospitalization with primary ACS diagnosis, otherwise having been hospitalized, otherwise died, and otherwise remained in the facility. The control for mortality was important, because residents who died were presumably sicker than those who remained alive (in the NH) during the study period, but residents who were hospitalized and subsequently died (N=2,102) were not treated differently from residents who were hospitalized but did not die. This definition created a four-category hierarchical outcome based on 6-month utilization: 1) any hospitalization(s) with a primary discharge ACS diagnosis; otherwise, 2) any other hospitalization(s); otherwise, 3) died; otherwise, 4) reference group, assumed to have remained alive in the facility. | 3,5 |
| **Results** | | | **Conclusion** | | |
| Multilevel models show that facilities with NP/PAs were associated with lower hospitalization rates for ACS conditions (adjusted odds ratio (AOR)=0.83), but not with other hospitalizations. Facilities with more physicians were associated with higher ACS hospitalizations (ACS, AOR=1.14, and non-ACS, AOR=1.10). Facilities providing intravenous therapy, and those that operate a nurses’ aide training program were associated with fewer hospitalizations of both types. | | | Separating hospitalizations that were potentially preventable from those that were not made it possible to determine that NP/PAs in the NH setting were associated with reducing potentially preventable hospitalizations, adding further specificity to the growing literature on this strategy for improving care. The authors suggest that employment of NP/PAs in NHs, the provision of intravenous therapy, and the operation of certified nurse assistant training programs appear to reduce ACS hospitalizations, and may be feasible cost-saving policy interventions. | | |

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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 |
| 122. Jenq GY, Guo Z, Drickamer M, et al. Timing in the communication of pain among nursing home residents, nursing staff, and clinicians. *Archives of Internal Medicine.* Jul 26 2004;164(14):1508-1512.[122](#_ENREF_122) | To better understand the communication process or flow of information regarding pain management in the nursing home (NH) setting. We propose that 4 key steps in this process include: 1) nursing assessment of pain; 2) notification of clinicians regarding a resident’s pain;  3) clinician assessment and intervention;4) nursing reassessment following an intervention. | The study population included the directors of nursing (DONs) of nursing homes (N=63) in New Haven County, CT. | Qualitative  Quantitative  Cross-Sectional | A diverse group of DONs were surveyed by telephone to determine: 1) the frequency with which pain assessments are performed by nursing staff; 2) the timing of clinician notification of residents’ pain; 3) the frequency with which pain assessment are performed by clinicians and 4) the timing of nursing reassessment of residents’ pain following an intervention. Participants were asked to provide facility-specific data including number of beds, proprietary status, and accreditation status with the Joint Commission on Accreditation of Healthcare Organizations. The standard measure of total number of nursing staff hours per resident per day was obtained from the Medicare website which provides the public with information on the past performance and staffing ratios of all Medicare- and Medicaid-certified NHs in the United States. | 1 |
| **Results** | | | **Conclusion** | | |
| The mean (SD) number of beds of the NHs surveyed was 115 (61.9); 78% of the NHs were for-profit, and 63% were accredited by the Joint Commission on Accreditation of Healthcare Organizations. The mean (SD) number of nursing staff hours per resident per day was 3.4 (1.2). In 76% of NHs, nurses assessed pain in residents without pain at least “quarterly;” only in 46% of NHs was pain assessed in residents with pain at least “every shift.” In 42% of NHs, nurses notified clinicians at least when the regimen was “ineffective.” Only 55% of the DONs reported that clinicians assessed pain at least every 30 to 60 days. Finally, in 73% of NHs, nursing reassessment occurred at least 1 hour after intervention. The most common response to the question “How often is pain assessed by clinicians” was “Every 30 to 60 days” and was reported by 22% of the respondents. A total of 31 different responses were recorded for this survey item, including “every 30 to 60 days,” “upon nurses’ requests,” and “seldom.” | | | There is considerable variability in how frequently nurses and clinicians assess pain, when clinicians are notified about pain, and how frequently nurses reassess pain. The authors suggest that future studies are needed to determine optimal timing in the communication process of pain to allow better pain management outcomes and quality of care for NH 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 |
| 123. Jette DU, Warren RL, Wirtalla C. Rehabilitation in skilled nursing facilities: Effect of nursing staff level and therapy intensity on outcomes. *American Journal of Physical Medicine and Rehabilitation.* 2004;83(9):704-712.[123](#_ENREF_123) | To explore the relationship of patients' outcomes with nursing staff levels and therapy intensity within skilled nursing facilities. | The sample was comprised of patients (N=6,897) from skilled nursing facilities providing rehabilitation and reimbursed  through Medicare+ Choice. (N=68). | Quantitative  Cross-Sectional | Secondary analysis was conducted using an administrative dataset of patients from skilled nursing facilities (SNFs) providing rehabilitation and reimbursed through Medicare+Choice. Patient data were collected regarding demographics, disease, and functional status at admission and discharge. Disease data included a medical complexity score and the impairment responsible for admission. Concurrent validity of the scale is suggested by the fact that dying during the SNF admission or being discharged to the acute care setting was associated with an increasing medical complexity score, and in patients with stroke, lower function as determined by patients’ function-related group was related to greater medical complexity. The medical condition categories were derived from impairment groups used by the Uniform Data System for Medical Rehabilitation. As defined by this dataset, impairment groups comprise conditions or diseases such as stroke, spinal cord injury, and rheumatoid arthritis. Data regarding therapy time were recorded for each patient by clinicians through daily logs. The independent measures were facility-level nursing hours-to-resident ratio and total therapy hours per day. Outcomes included discharge to community and length of stay efficiency. | 3,5 |
| **Results** | | | **Conclusion** | | |
| Patients were 1.53 times more likely to be discharged to the community when nursing staff level was ≥3.5 hours per resident per day as compared with <3.5, and patients were 1.22 and 2.02 times more likely to be discharged to the community when therapy averaged 1–1.5 hours/day and >1.5 hours/day, respectively, as compared with <1 hour/day. The adjusted mean length-of-stay efficiency was 0.21 points greater in facilities where the nursing staff level was ≥3.5 hours per resident per day than in facilities where the level was <3.5 and 0.43 and 0.70 points greater in facilities where patients received 1–1.5 hours/day and >1.5 hours/day of therapy, respectively, than in facilities where the average therapy intensity was <1 hour/day. | | | The findings of this study, in conjunction with previous reports, provide evidence for the relationship of nursing staff level and therapy intensity in SNFs with important patients’ outcomes. Although variables representing facility nursing staffing ratio and therapy intensity accounted for only small amounts of the variance in models for discharge to the community and length-of-stay efficiency, higher nursing staff level and greater therapy intensity contributed to better outcomes. | | |

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| 124. Johnson CE, Dobalian A, Burkhard J, et al. Predicting lawsuits against nursing homes in the United States, 1997-2001. *Health Services Research.* 2004;39(6 Part 1):1713-1731.[124](#_ENREF_124) | To examine how nursing home characteristics impacted the number of lawsuits filed against the facilities in the United States during 1997-2001. | The sample was comprised ofnursing homes (N=2,378) across multiple states (N=45). | Quantitative  Cross-Sectional | Data were obtained from Westlaw’s Adverse Filings: Lawsuits database, the Centers for Medicare and Medicaid Services’ (CMS) Online Survey, Certification, and Reporting (OSCAR) database, state complaint surveys, and through primary data. Negative binomial regression was used to explain total lawsuit variance by year. Explanatory variables included: a) facility characteristics (including staffing, number of beds, multistate system membership, for-profit ownership); b) quality indicators (including total number and type of quality survey deficiencies, pressure sore development); and c) market area (state has resident rights statutes, state complaint information). Researchers controlled for resident acuity levels and year effects. Nursing homes were identified and linked to Westlaw data that was searched for the number of lawsuits filed against the home, and then linked to OSCAR data and a primary data analysis of multistate chain membership. | 5 |
| **Results** | | | **Conclusion** | | |
| There were 2,668 total lawsuits filed against the nursing homes in the sample during 1997-2001. For-profit homes had a higher overall mean number of suits, were less likely to meet the long-stay staffing ratios, and had poorer quality indicators in comparison to nonprofit homes. For-profit homes were in 68% of the systems or chains, had higher Medicaid ratios, and were smaller in size. They were more likely to be in resident rights states that allow for individual causes for action, had more complaints per 100 beds in their state, and faster resolution of complaint investigations. For-profits had more residents that required tube-feeding, catheters, and were bowel incontinent. Meeting the long-stay recommended standards for CNAs lowered the litigation incidence rate by 15% and meeting the RN standard lowered the lawsuit rate 23%. The resource related variables that were significant in the analysis were system membership, number of beds within the facility, and for-profit ownership. Facilities that were part of a system experienced a 16% decrease in the litigation rate. For-profit ownership experienced a 28% higher lawsuit rate than not-for-profits. Nursing homes located in resident rights states experienced a 61% higher litigation incidence rate. | | | This study suggests that nursing homes that meet long-stay staffing standards and minimum quality indicators, are nonprofit, smaller, and not located in resident rights states will experience fewer lawsuits. The authors suggest that future research implications involve the fact that better understanding is needed in larger samples of the relationship between staffing and litigation activity in homes, the relationship between “deep” financial pockets and higher lawsuits against facilities, the relationship of lawsuits to the availability and affordability of liability insurance, and the decision-making processes used by lawyers and families to sue nursing homes. | | |

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| 125. Katz DA, Brown RB, Muehlenbruch DR, et al. Implementing guidelines for smoking cessation: comparing the efforts of nurses and medical assistants. *American Journal of Preventive Medicine.* Dec 2004;27(5):411-416.[125](#_ENREF_125) | To compare how different types of intake clinicians (registered nurses [RNs], and less costly licensed practical nurses [LPNs] and medical assistants [MAs]) perform in smoking-cessation activities recommended in the Agency for Healthcare Research and Quality (AHRQ) smoking-cessation clinical practice guideline. | The sample was comprised of adult smokers (N=1,221) from multiple primary clinics (N=9). | Quantitative  Cross-Sectional | This was a secondary analysis of data obtained during a randomized trial of the Agency for Healthcare Research and Quality (AHRQ) smoking-cessation clinical practice guideline in nine community-based, primary care practices, including one pilot test site. In all study sites, intake clinicians (RNs, LPNs, MAs) were paired with a primary care clinician. A brief survey was administered to intake clinicians immediately before the guideline intervention. The survey included items pertaining to self-efficacy, role satisfaction, and beliefs regarding smoking cessation. Study personnel performed exit interviews of consecutive adults who had an appointment with a primary care provider (PCP) for routine care and who reported smoking at least 1 cigarette per day. Patients were asked to specify whether they had received cessation counseling from the intake clinician and/or PCP, as well as questions about demographics and health habits, and type of visit. | 1 |
| **Results** | | | **Conclusion** | | |
| Performance of all guideline-recommended counseling activities were significantly greater for all intake clinicians at test versus control sites. MAs were significantly less likely to assess willingness to quit (adjusted odds ratio [AOR]=0.4, 95% confidence interval [CI]=0.2–0.8, p=0.005) and tended to offer advice and assistance in quitting less often than RNs. Similar findings were observed for LPNs (AOR=0.5, 95% C=0.3–1.0, p=0.03, for assessing willingness to quit). MAs at test sites had significantly less work experience than RNs, and assigned lower importance to the “personal experience of illness” as a factor in smoking cessation. MAs and LPNs at test sites also tended to be less satisfied than RNs with their counseling role. Subset analysis in subjects with complete survey data revealed that being seen by a MA was no longer associated with statistically significant differences in performance, after accounting for personal beliefs, self-efficacy, and role satisfaction in cessation counseling. There was no significant association between intake clinician’s smoking status (current or former) and performance. | | | These results suggest that nursing beliefs and attitudes account for a substantial part of the difference in performance between intake clinicians. Thus, the authors suggest that efforts to minimize differences in performance should aim to improve the counseling skills of nursing personnel at various levels of training, and should enhance the autonomy (and job satisfaction) of nursing care staff. | | |

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| 126. Kelly AE, Sullivan P, Fawcett J, et al. Therapeutic touch, quiet time, and dialogue: perceptions of women with breast cancer. *Oncology Nursing Forum.* 2004;31(3):625-631.[126](#_ENREF_126) | To compare the perceptions of women with breast cancer to an experimental therapeutic touch (TT) plus dialogue nursing intervention with perceptions of a control quiet time plus dialogue nursing intervention. | Telephone interviews were conducted with early-stage female breast cancer patients (N=18). | Qualitative  Cross-Sectional | Data for this study were collected as part of a larger experimental study of the effects of TT on pre- and postoperative anxiety and mood and postoperative pain with in women with early-stage breast cancer. As women completed the intervention, they were contacted by one of the investigators to determine their willingness to participate in a telephone interview. The Telephone Interview Guide consisted of six open-ended questions. The purpose of the interview was to determine the women’s perceptions of their participation in the experimental study. Open-ended questions were used to avoid leading the women to particular answers. One question was directed to only the participants who received the experimental intervention, and one was directed to only the participants who received the control intervention; all other questions were directed to all of the participants. The telephone interview was conducted an average of 5.1 days after the postoperative home visit (mode = 4 days, range = 2–9 days). The researchers decided not to interview the women immediately after the completion of the postoperative intervention to allow the women time to reflect on their experience of participating in the experimental study. The interviews, which lasted 2–28 minutes (mode = 3 minutes), were recorded to audiotape with the women’s oral permission and then transcribed verbatim by the study’s administrative assistant. | 2,3 |
| **Results** | | | **Conclusion** | | |
| There were few differences in participants' perceptions of experimental and control interventions. Only participants who received the experimental intervention reported body sensations, and only participants in the control group inquired about the study and its purpose. Regardless of experimental or control intervention participation, women expressed feelings of calmness, relaxation, security, and comfort and a sense of awareness. The few who commented about the nurse administering the intervention indicated that the nurse was empathetic, concerned, supportive, or helpful. | | | The women regarded either nursing intervention as a positive experience. Some also expressed positive regard for the research nurse. The study findings indicate that women with breast cancer could be offered a choice of TT, quiet time, or dialogue when feelings of calmness and relaxation are desired. | | |

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| 127. Kennedy HP, Shannon MT, Chuahorm U, et al. The landscape of caring for women: A narrative study of midwifery practice. *Journal of Midwifery and Women's Health.* 2004;49(1):14-23.[127](#_ENREF_127) | To expand knowledge on the process and outcomes of midwifery care using narrative analysis to interpret stories provided by midwives to illustrate their practice and recipients of midwifery care about their experience. | The sample was comprised of midwives (N=14) and recipients of midwifery care (N=4). | Qualitative  Cross-Sectional | The research questions were 1) what processes of care and beliefs emerge as central in midwifery practice when described in actual clinical scenarios and 2) are there linkages between midwifery processes of care and short and long-term outcomes for the woman and her family? A purposive sample of 14 midwives and 4 recipients of midwifery care were recruited to provide scenarios that described their midwifery practice or care experience. In the prior Delphi study, panelists were asked to list specific qualities and traits, processes of care, and outcomes they believed to be most important in the practice of midwifery. Many used stories to illustrate their point. Because the current study used narrative method, we chose to recruit these storytellers. Three of the midwives were not in the original Delphi study but were theoretically sampled based on emerging findings. Each participant was asked to tell one or more stories that most reflected her midwifery practice (midwives) or care experience (recipients of care). Interviews, lasting 60 to 90 minutes, were conducted by using videotape to collect the data. | 2 |
| **Results** | | | **Conclusion** | | |
| Three broad themes were identified: 1) the midwife in relationship with the woman, 2) orchestration of an environment of care, and 3) the outcomes of care, called “life journeys” for the woman and the midwife. The first theme describes the structure of the relationship of the midwife and the woman. Mutuality emerged as foundational for the midwife’s relationship with the woman. This concept suggests that the midwives regard themselves on an equal level with the woman, recognizing that women bring a knowledge base to the clinical situation as important as the midwife’s. Orchestration was chosen to describe the midwife’s “art” in creating an environment in which the woman’s desires were met, where she was kept safe along the way, and where normalcy was preserved. The third major theme was called “life journeys” to reflect the effects of midwifery care as short- and long-term outcomes for the woman and the midwife. This term was selected because the narratives often portrayed effects beyond the common indicators used in women’s health care. | | | Midwifery care has been demonstrated over and over to be excellent and associated with positive maternal-infant outcomes. The authors conclude that strategies must be developed to document midwifery care and outcomes in ways that are understood from public health, consumer, marketing, and economic perspectives. | | |

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| 128. Kroposki M, Alexander JW. Workplace variables and their relationship to quality client outcomes in home health. *Public Health Nursing.* 2004;21(6):555-563.[128](#_ENREF_128) | To investigate the relationship of workplace variables and client outcomes, and to propose a model of the fit between the workplace variable dimensions of nursing technology (NT) and organizational structure (OS) to predict client outcomes in home health. | The sample was comprised of nurses (N=205) and home health clients (N=325) in home health sites (N=43). | Quantitative  Cross-Sectional | The researchers used a correlational, predictive, descriptive survey design to answer the research questions using a convenience sample of 43 home health sites. Home health sites were selected as the unit of analysis, because the work sites of nurses in one home health agency often are geographically dispersed resulting in several work groups within the agency. The study invited all registered nurses employed for at least 1 month at each site to complete surveys. All current clients or their caregivers were eligible for inclusion if they were able to respond to the questions. Instruments measured NT, OS, role clarity, nurses’ perceptions of client outcomes that were sensitive to nursing care, and client satisfaction. | 1,2,3 |
| **Results** | | | **Conclusion** | | |
| Nurses perceived that clients had better outcomes when the three dimensions of NT fit the three dimensions of OS: 1) when clients’ conditions were unstable, nurses interacted with peers; 2) when care was complex, nurses consulted with supervisors; and 3) when clients’ needs varied, nurses used rules to guide clinical decisions. The researchers used correlation analysis to investigate how the components of role clarity related to OS. Role conflict was negatively related to supervisor interaction (VP; r=-0.32, p<0.05) and peer interaction (HP; r=-0.51, p<0.05) and positively related to fewer rules and procedures (FO; r=0.37, p<0.05). Role ambiguity was negatively related to peer interaction (HP; r=-0.67, p<0.05) and positively related to fewer rules and procedures (FO; r=0.44, p<0.05). | | | Nurse managers in home health need to find strategies to produce high levels of client satisfaction and good client outcomes while reducing cost. The model proposed in this study provides evidence to link workplace variables to nurses’ perceptions of client outcomes that are sensitive to nursing care and client satisfaction. Knowledge of the current levels of care processes (NT) will help nurses managers adjust the OS to improve or maintain high-quality home health. | | |

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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 |
| 129. Lageson C. Quality focus of the first line nurse manager and relationship to unit outcomes. *Journal of Nursing Care Quality.* 2004;19(4):336-342.[129](#_ENREF_129) | To examine the relationship between the quality focus of the first line nurse manager and patient satisfaction, job satisfaction of the nursing personnel, unit effectiveness, staff perceptions of quality, and nursing personnel turnover | The sample was comprised of hospital personnel (N=498) consisting of nurse managers (N=53), registered nurses (RNs) (N=221), other nursing personnel (N=146), and physicians (N=78) working in 53 units non-intensive care unit (ICU) nursing units (N=53) in hospitals (N=23) in the Midwestern region. | Quantitative  Cross-Sectional | The study was a descriptive, cross-sectional survey design of inpatient non-ICU nursing units in hospitals located in the Midwestern region of the United States between 1998 and 2000. A combination of survey instruments was used to collect the survey data used to explore the relationships that are stated in the research question, “What is the relationship between the quality focus of the first line nurse manger and job satisfaction of the nursing personnel, patient satisfaction, unit effectiveness, staff perceptions of quality of care, and turnover rates for nursing personnel?” Individual level survey data were collected from nurse managers, RNs, other nursing personnel (including licensed practical nurses [LPNs] and nursing assistants), and physicians. | 1,2 |
| **Results** | | | **Conclusion** | | |
| A significant (r [50]=0.467, p<0.05) relationship was found between the nurse manager’s quality focus and job satisfaction. The results suggested that the higher the quality focus score of the nurse manager, the higher the degree of job satisfaction for the nursing staff. Quality focus of the nurse manager was found to account for 21.8% of the variation in job satisfaction scores. Of the unit outcomes that were tested, quality focus was found to be a significant predictor variable only for staff nurse job satisfaction (R2=0.218). | | | The authors encourage that nurse managers need to be grounded in what it means to provide quality patient care services and the impact of quality management on the unit. Managers need to be cognizant of their vision of quality and how that vision translates into staff education about quality, selection of quality projects, and recognition of outstanding quality service. Also, the manager’s quality focus should reflect the need to have a viable, stable, and productive workforce to provide high-quality, cost-effective patient care. | | |

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| **Non-Experimental Studies (N=72)** | | | | | |
| **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 |
| 130. Lambing AY, Adams DL, Fox DH, et al. Nurse practitioners' and physicians' care activities and clinical outcomes with an inpatient geriatric population. *Journal of the American Academy of Nurse Practitioners.* 2004;16(8):343-352.[130](#_ENREF_130) | To investigate care activities and clinical outcomes for hospitalized geriatric patients treated by nurse practitioners (NPs) compared with those treated by intern and resident physicians. | The sample was comprised of inpatient geriatric patients (N=100) and professional providers (N=17) in hospital unit (N=3). | Quantitative  Longitudinal  Descriptive  Comparative | This study was conducted at a 900-bed urban teaching institution in the Midwest, where three hospital inpatient units served as data collection sites. One unit consisted of 30 beds, was specific for geriatric care and was staffed by NPs; thus, it was designated the NP provider unit. The remaining two units, classified as general medicine units, each contained 36 beds and were designated as the physician provider units. Researchers identified patient participants though a random selection of 100 medical records for inpatient geriatric patients that were admitted to the one geriatric unit or to either of the two general medicine units. Chart reviews took place over a 3-month period. By performing a retrospective chart review, researchers were able to obtain near complete financial and diagnostic data from the hospital’s corporate data stores. Each of the NPs and physicians completed the professional care provider questionnaire form at the time of agreement to participate in the study. | 1,3,5 |
| **Results** | | | **Conclusion** | | |
| Self-reports concerning 10 primary activity categories indicated that NPs spent a higher percentage of time doing progress notes and care planning than did physicians (28% versus 15%, p=0.011) and that physicians spent more time on literature reviews (5% versus 1%, p=0.008). When prioritizing care activities, NPs ranked advance directive discussion higher than did physicians (2nd versus 7th, p=0.036), a difference confirmed by medical record documentation. Physicians were more attentive to functional status (1st versus 3rd, p=0.023), but medical record documentation showed NPs to be more attentive to physical and occupational therapy referrals (p=0.001). Analysis of 13 independent organ areas revealed that NPs cared for more musculoskeletal (p=0.036) and psychiatric (p=0.005) problems. Physicians cared for more cardiac patients (p=0.001). NPs’ patients were older (p=0.022) and sicker at admission (p<0.001) and discharge (p<0.001). Charges per length of stay were lower (p<0.001) for the physician provider group, and patients in that group had shorter stays (p<0.001). Readmission and mortality rates were similar. | | | Results of this study clearly support the position that NPs deliver effective care to hospitalized geriatric patients, particularly to those who are older and sicker. Overall, the NPs met expectations, sometimes surpassing their counterparts in selected areas, such as identifying the need for and initiating physical and occupational therapy consultation, nutrition consultation, and advance directive discussion. | | |

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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 |
| 131. Larrabee JH, Ostrow CL, Withrow ML, et al. Predictors of patient satisfaction with inpatient hospital nursing care. *Research in Nursing and Health.* 2004;27(4):254-268[131](#_ENREF_131) | To investigate the influence of registered nurse (RN) job satisfaction, context of care, structure of care, patient-perceived nurse caring, and patient characteristics on patient satisfaction with inpatient hospital nursing care in an academic medical center in north-central West Virginia. | Convenience samples of patients (N=362) and RNs (N=90) were recruited from medical units (N=2), surgical units (N=2), and intensive care step-down units (N=3). | Quantitative  Cross-Sectional  Predictive | This study was the major focus of a larger, extensive project that also identified predictors of RN job satisfaction and intent to leave. The patient questionnaire measured patient satisfaction, patient perceived nurse caring, health status, and quality of life using instruments that had acceptable psychometric properties as demonstrated in prior studies. The RN questionnaire measured job satisfaction and context (nurse manager leadership style) and structure of care (autonomy, control of practice, RN/MD collaboration), again using instruments that had acceptable psychometric properties. Unit turbulence and staffing data (context of care variables) were obtained from an existing hospital database. After assessing reading level, 158 patients self-administered the questionnaire. For the rest (N=204), the data collector interviewed the patient using the questionnaire because the patient reading level was too low, reading glasses were not available, or the patient felt too ill to complete it unassisted. Registered nurse participants completed the questionnaire while relieved of patient care responsibilities. Staffing and unit turbulence data were matched to the RNs for each 4-hr block of time they worked between January 1, 2000, and the day they completed the questionnaire. | 2 |
| **Results** | | | **Conclusion** | | |
| Variables significantly and positively correlated (p<0.05) with patient satisfaction were, in descending order of the magnitude of the relationship: patient-perceived nurse caring, patient age, quality of life, and RN/MD collaboration. The final causal model revealed patient-perceived nurse caring (STB=0.68) and RN/MD collaboration (STB=0.12) as direct predictors of patient satisfaction, with age influencing patient satisfaction indirectly through its influence on patient-perceived nurse caring. | | | Based on the study findings, the authors suggest that strategies to achieve and maintain patient satisfaction should address the enhancement of patient-perceived nurse caring and RN/MD collaboration. | | |

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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 |
| 132. Lin SX, Gebbie KM, Fullilove RE, et al. Do nurse practitioners make a difference in provision of health counseling in hospital outpatient departments? *Journal of the American Academy of Nurse Practitioners.* 2004;16(10):462-466[132](#_ENREF_132) | To examine whether nurse practitioners (NPs) had any impact on the type and amount of health counseling provided during patient visits to hospital outpatient departments (OPDs). | The sample was comprised of outpatient visits (N=90,478) made to multiple general medicine, pediatrics and obstetrics/gynecology (OB/GYN) clinics. | Quantitative  Cross-Sectional  Secondary Data Analysis | This is a secondary data analysis of the National Hospital Ambulatory Medical Care Survey (NHAMCS) from 1997 through 2000. This cross-sectional survey uses a four-stage probability design. Analyses included outpatient department (OPD) visits made to three types of clinics (general medicine, pediatrics, and OB-GYN). The study examined visit-based provision of health counseling by comparing the OPD visits involving an NP with those OPD visits that did not involve an NP. An OPD visit was considered to have involved an NP and was included in the analysis regardless of whether any other types of providers were also seen. However, of all the patients whose OPD visits involved an NP, 48.9% were seen by the NP only; 35% were seen by an NP and others, including LPN, RN, or medical/ nursing assistant; and 18% were seen by an NP as well as by a physician and or a resident. The comparison of health counseling provided at the OPD visits was stratified by visit type, namely OPD visits for non-illness care, OPD visits for chronic problems, and OPD visits for acute problems. | 1 |
| **Results** | | | **Conclusion** | | |
| The following were more likely to be provided at non-illness care visits involving an NP than at those not involving an NP: health counseling for diet (OR=1.7), exercise (OR=1.8), human immunodeficiency virus (HIV) and sexually transmitted disease (STD) prevention (OR=3.2), tobacco use (OR=1.7), and injury prevention (OR=2.2). As for OPD visits for chronic problems, counseling for healthy diet, exercise, and tobacco use were more likely to be provided when patients were treated only or also by an NP. At OPD visits for acute problems, counseling on healthy diet was almost twice as likely and counseling on HIV/STD prevention was 2.6 times more likely to be provided when the visits involved an NP. | | | This study indicates an important role NPs can play in providing preventive services in outpatient hospital departments. The findings reflect the emphasis of the NP education on health counseling and patient education in clinical practice. The authors suggest that future studies should be conducted to examine not only the provision of health counseling by NPs but also the content, intensity and the impact of health counseling provided by NPs as compared with other types of providers. | | |

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| **Non-Experimental Studies (N=72)** | | | | | |
| **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. Lipson AR, Hausman AJ, Higgins PA, et al. Knowledge, attitudes, and predictors of advance directive discussions of registered nurses. *Western Journal of Nursing Research.* 2004;26(7):784-796.[133](#_ENREF_133) | To describe nurses' knowledge, attitudes, and experiences regarding advance directives (ADs). | Registered nurses (N=719) in Ohio. | Quantitative  Cross-Sectional | A secondary purpose of this study was to examine predictors of advance directive discussions between nurses and patients. A questionnaire was developed and tested. The final version included 7 demographic questions, 19 knowledge items, 9 attitude statements, and 17 advance directive exposure questions. Information was obtained regarding the demographics of the study population. Participants were asked about their knowledge and attitudes of advance directives, their exposure to advance directives, and their self-perceived confidence in participating in such discussions. To determine predictors of advance directive discussions, participants were asked to report the amount of advance directive discussions they had participated in during their career. | 1 |
| **Results** | | | **Conclusion** | | |
| Respondents answered 88.1% of the knowledge questions correctly; questions regarding advance directive definitions had the highest percentages (95% to 99%) of correct responses. Thirty-six percent (N=258) of the respondents had completed their own advance directive; 15% (N=107) had exposure to advance directive information in nursing school, and 69% (N=498) reported exposure through conferences, in-services, literature, or discussions with colleagues. Eighty-one percent (N=583) of the respondents reported having cared for at least one patient with an advance directive. Although 7.3% (N=51) of the sample felt that they were extremely confident in their skills, 14% (N=99) reported that they were not at all confident in their discussion skills. There was a statistically significant difference (p=0.000) in reported levels of advance directive discussions with patients among those respondents with exposure to advance directive information both during nursing school (M=2.3) and outside of formal education (M =2.0). Knowledge (r=0.10; p=0.013), attitudes (r=0.12; p=0.002), and confidence in advance directive discussion skills (r=0.51; p=0.000) correlated positively with the respondents’ reported levels of advance directive discussions with patients. Higher age (r=-0.12; p=0.002), greater years of nursing experience (r=-0.15; p=0.000), and higher level of education (r=-0.09; p=0.020) correlated negatively with the respondents’ reported levels of advance directive discussions with patients. | | | These findings suggest that experience with advance directives documents is critical for nurses’ comfort and that developing interventions to further nurses’ confidence in their discussion skills may increase advance directive discussions. The authors suggest that use of a multifaceted approach that focuses on the process of the discussions, such as didactic instruction and role-playing, is essential in increasing confidence levels. Further, they note that another logical extension of this study is to determine both the immediate and long-term outcomes of the advance directive discussions between nurses, patients, and families. | | |

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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 |
| 134. Matthews RC, Callister LC. Childbearing women's perceptions of nursing care that promotes dignity. *Journal of Obstetric, Gynecologic, and Neonatal Nursing.* 2004;33(4):498-507.[134](#_ENREF_134) | To gain an understanding of the perceptions of childbearing women about the maintenance of dignity while laboring and giving birth. | The sample was comprised of low-risk primiparous women (N=20) who had recently given birth to healthy neonates. The setting was a university community in the Western U.S. | Qualitative  Cross-Sectional | Twenty primiparas were interviewed. Following completion of consent and demographic forms, an appointment was made for a 60-minute audiotaped interview to be held in the home of the study participant or at a place that was mutually convenient to the participant and investigators. An interview guide to elicit issues related to dignity was constructed with the goal of keeping the interviews both comprehensive and focused. First, the woman was asked to describe her birth experience. Later questions included, “Did you ever feel a sense of loss of control during your labor and birth experience?” and “What is important for nurses to do to help women feel respected?” In response to broadly framed questions, participants were given the opportunity to articulate their personal perspectives. Interviews moved from a general to a specific focus as probing was used to elicit understanding, clarify expressions, and achieve saturation of thematic categories. Follow-up interviews were conducted with five study participants to enable them to clarify and amplify their perceptions and to verify the results of analysis. | 2 |
| **Results** | | | **Conclusion** | | |
| Acknowledging the special nature of the birth experience and the centrality of the woman’s role in it was part of nursing care that promoted women’s dignity. Themes of the women’s stories related to dignity included: a) nurses played a pivotal role in preserving dignity during childbirth, b) women appreciated feeling valued and respected, and c) dignity was enhanced by care that gave women their preferred level of control. Theme A: Respondents expressed surprise that physicians were not more involved throughout the labor process and noted the important and consistent role of the nurses. Theme B: Participants expressed appreciation that their emotions, decisions, physical comfort, and privacy were taken seriously. Theme C: The sense of being in control included feeling in control of personal behavior, which often was related to pain management. Another type of control was having an influence on decisions and interventions. | | | It is essential that nurses value and respect patients and promote their dignity and self-worth. The authors note that this can be accomplished through participatory decision-making and fostering a sense of control through shared power. | | |

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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 |
| 135. McNabney MK, Andersen RE, Bennett RG. Nursing documentation of telephone communication with physicians in community nursing homes. *Journal of the American Medical Directors Association.* 2004;5(3):180-185.[135](#_ENREF_135) | To describe the nursing documentation of telephone communication with physicians in community nursing homes (NHs). | The sample was comprised of telephone calls (N=248) made to a physician group from 2 nursing homes. | Quantitative  Longitudinal Prospective  Observational | This study evaluated nursing documentation of all telephone calls to one physician group by nurses from two proprietary community nursing homes over two months. Data were collected by physicians at the time of each call regarding the time, day, nursing facility, reason for the call, and orders given. Calls were categorized as to whether documentation was necessary by defined criteria. The nursing home charts were then reviewed for the presence of documentation of: 1) the issue that prompted the call, 2) physician’s participation, and 3) orders given by the physician. If no documentation was found, the nurse progress notes were reviewed for mention of notification of the physician of the laboratory or radiograph result. Telephone call “rates” from each nursing facility were calculated. The total number of calls from each facility per month was divided by the average patient census (number of calls per resident per month). The relationships between the characteristics of the telephone calls and the rates of documentation were then analyzed. | 1 |
| **Results** | | | **Conclusion** | | |
| Nursing documentation of the issue that prompted the call was present for 80% of total calls. This documentation was more likely to be present with calls for change of patient status and notification of laboratory/radiograph results compared with calls for other issues (117 of 125 [94%] vs. 57 of 63 [90%] vs. 24 of 60 [40%], respectively; *X*2= 78.3, p<0.0001). Calls that were categorized as "documentation necessary" by the Medical Director were more likely to be documented than calls that were not (132 of 150 [88%] vs. 9 of 35 [26%], respectively; *X*2=60.8, p<0.001). Of the 198 calls with any form of documentation, specific mention of physician participation in the communication was present 89% of the time. This documentation of physician participation was more likely to be present with calls for laboratory/radiograph notification than with calls for change of patient status or calls for other reasons (57 of 57 [100%] vs. 99 of 117 [85%] vs. 20 of 24 [83%], respectively; X2=10.0, p=0.007). Physicians indicated that orders were given during 69% of calls, but orders were only documented for 79% of these interactions. | | | Findings indicate that the majority of telephone calls between nurses and physicians from two NHs were documented in the medical record. However, certain types of calls were much less likely to be documented in the nurse progress notes than others. Documentation of physician participation in the matter was absent in almost 30% of total calls, and orders were not documented in 21% of calls in which the physician believed that an order had been given. The authors suggest that physicians who practice in NHs specifically clarify plans for documentation with nurses to be certain that both parties agree on the need to document and what should be included in the documentation. Physicians and nurses should also clarify when requests for follow-up assessments or instructions for patient care are specifically intended as orders so that they can be properly transcribed. | | |

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| 136. Melnyk BM, Fineout-Overholt E, Fischbeck Feinstein N, et al. Nurses' perceived knowledge, beliefs, skills, and needs regarding evidence-based practice: implications for accelerating the paradigm shift. *Worldviews on Evidence-Based Nursing* 2004;1(3):185-193.[136](#_ENREF_136) | To describe nurses' knowledge, beliefs, skills, and needs regarding Evidence Based Practice (EBP); determine whether relationships exist among these variables; and describe major barriers and facilitators to EBP. | The sample was comprised of nurses (N=160) attending EBP conference or workshops in multiple states (N=4) in the Eastern U.S. | Quantitative  Cross-Sectional | A descriptive survey was conducted with a convenience sample of nurses attending EBP conferences/workshops. Nurses were asked to complete the survey before commencement of the workshops. The survey items were developed by two nurse experts in EBP with the Transtheoretical Model of Change and the Control Theory as the guiding frameworks. The survey was designed to understand nurses’ beliefs about EBP, their knowledge regarding it, their perceived barriers and facilitators to implementing EBP, to what extent nurses’ clinical practices are evidence-based, and the needs of nurses regarding the implementation of EBP in their clinical settings. | 1 |
| **Results** | | | **Conclusion** | | |
| Residents indicated that 46% of their current practices were evidence-based. Forty-two point three percent (N=33) of participants reported that there were barriers to EBP implementation. Forty-four percent (N=42) identified facilitators. The following were positively correlated: 1) nurses’ beliefs about the importance of EBP in improving patient outcomes and the extent to which their practices are evidence-based (r=0.32, p<0.001); 2) nurses’ beliefs about how much EBP improves clinical care and the extent to which their practices are evidence-based (r=0.40, p<0.001); 3) the length of time in practice as an advanced practice nurse and knowledge of EBP (r=0.37, p<0.001). Nurses who reported having greater knowledge about EBP reported a greater extent of evidence-based care (r=0.42, p<0.0001). Having greater knowledge of EBP was positively related to current involvement in an EBP initiative (r=0.34, p<0.001). Nurses who reported higher use of the Cochrane Database of Systematic Reviews reported more extensive evidence-based practices (r=0.43, p<0.003). Nurses who held stronger beliefs that research evidence improves patient outcomes perceived fewer barriers to EBP (r=-0.27, p<0.05). Nurses who reported having a mentor (49%, N=50) reported higher levels of knowledge of EBP (r=0.28, p<0.003). Nurses who reported having a mentor who could model EBP reported having more extensive evidence-based practices (r=0.21, p<0.05). | | | In order to accelerate evidence-based nursing practice, nurses must be provided with information that strengthens their beliefs about EBP improving care and patient outcomes, as well as interactive educational workshops that enhance their knowledge and skills in EBP. | | |

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| 137. Mezey M, Kobayashi M, Grossman S, et al. Nurses Improving Care to Health System Elders (NICHE): Implementation of best practice models. *Journal of Nursing Administration.* 2004;34(10):451-457.[137](#_ENREF_137) | To determine perceptions of hospitals implementing the Nurses Improving Care to Health System Elders (NICHE) program, a comprehensive program that hospitals use to foster system-wide improvements in the care of older patients. | The sample was comprised of NICHE coordinators (N=85) in multiple hospitals that implemented NICHE. | Quantitative  Cross-Sectional | NICHE coordinators were sent the NICHE survey instrument using the method they preferred (i.e., electronic mail attachment, fax, etc.). The survey instrument contained the following categories: hospital characteristics; coordinator demographics and responsibilities; utilization and perception of usefulness of the Geriatric Institutional Assessment Profile (GIAP); nursing models and other components of the NICHE tool kit; development of nursing standards of geriatric practice; and benchmarking activities. The survey response used 5-point Likert-type scales and, when appropriate, requested the percent of effort (e.g., coordinator’s percent of time spent on relevant NICHE activities). The survey was pilot tested at 10 NICHE hospitals for clarity and consistency; reliability and validity measures were not obtained. | 1 |
| **Results** | | | **Conclusion** | | |
| Forty-eight (76%) hospitals had implemented the GIAP. The Geriatric Resource Nurse Model had been implemented in 63% of NICHE hospitals (N=42). Fourteen (21%) NICHE hospitals reported implementing the Geriatric Syndrome Management Model. Twelve (18%) NICHE hospitals reported having fully implemented an Acute Care for the Elderly Model unit. Thirty-four (51%) coordinators reported that their hospital used at least one of the geriatric nursing protocols. Thirty-three (49%) of NICHE hospitals had implemented the *Try This: Best Practices in Care for Older Adults* series. Among the 82 NICHE hospitals, 34% (N=29) reported using the Partners for Dissemination for Best Nursing Practice and Certification in Gerontological Nursing materials. Most (79%) NICHE coordinators used the NICHE listserv, with 17 using it daily. Overall, 91% of coordinators rated the listserv as excellent or very good. Of 82 NICHE hospitals, slightly more than half (56%) reimburse nurses to become certified in gerontological nursing. In a variety of ways, approximately one-third of these hospitals (N=25; 31%) prepare RNs to sit for the exam. | | | This survey confirmed that hospitals find NICHE useful for educating nurses and for configuring nursing services for older patients. As such, the survey provides strong support for the implementation of NICHE in the larger hospital community. | | |

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| 138. Osmon S, Harris CB, Dunagan WC, et al. Reporting of medical errors: An intensive care unit experience. *Critical Care Medicine.* 2004;32(3):727-733.[138](#_ENREF_138) | To determine the occurrence and type of medical errors in an intensive care setting using a voluntary reporting method. | The sample was comprised of medical events (N=232) involving 147 patients in a medical intensive care unit (MICU). | Quantitative  Cross-Sectional | This was an observational study describing a locally developed method for the reporting of medical events and the actual medical events reported. The goals were to describe the frequency and types of reported medical events occurring in an intensive care unit setting and to determine the impact of the reported medical events on patient outcomes. This research was undertaken as part of a larger effort aimed at the systematic prevention of risk and improvement of patient care. The reporting system, SAFE, provides a mechanism for healthcare providers to report medical events; to address key barriers to the reporting of medical events; to record, compile, and analyze medical event data for selected departments; and to provide knowledge that would guide improvements to patient safety within individual hospital departments and units.  In addition to the assessment of outcome, the number of events reported with the SAFE program was compared with the preexisting proprietary system used at Barnes-Jewish Hospital called RISKMASTER. | 1 |
| **Results** | | | **Conclusion** | | |
| The source of the reports included nurses, who reported most of the medical events (59.1%), followed by physicians-in-training (27.2%) and intensive care unit attending physicians (2.6%). One hundred thirty (56.2%) medical events occurred within the intensive care unit and were judged to involve patient care providers who were working directly in the intensive care unit area. One hundred and two (43.8%) medical events were commissions or omissions that occurred outside of the intensive care unit during patient transports or in the emergency department and hospital floors. Twenty-three (9.9%) medical events leading to a medical error resulted in the need for additional life-sustaining treatment, and seven (3.0%) medical errors may have contributed to patient deaths. | | | Study findings demonstrated that medical events resulting in error appear to be common in the intensive care unit setting. The authors suggest that healthcare providers working in the intensive care unit appear to be in a unique position to observe and report such events related to patient care. | | |

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| 139. Otani K, Kurz RS, Barney SM. The Impact of nursing care and other healthcare attributes on hospitalized patient satisfaction and behavioral intentions. *Journal of Healthcare Management.* 2004;49(3):181.[139](#_ENREF_139) | To examine which healthcare attributes play a more important role in increasing patient satisfaction and behavioral intentions and analyze the relative importance of those attributes and the nature of the relationships across the values of the attributes. | The sample was drawn from patients (N=6,000) discharged from 4 hospitals in St. Louis, Mid-Missouri and southern Illinois regions. | Quantitative  Cross-Sectional | The first objective of this study was to find out, using a comprehensive set of healthcare attributes, which attributes play a more important role in increasing patient satisfaction and behavioral intentions. The second objective was to analyze the relative importance of those attributes and the nature of the relationships across the values of the attributes. The analysis in this study consisted of two sequential parts: 1) examination of the influence of six attribute reactions on overall patient satisfaction and behavioral intentions and 2) evaluation of the nonlinear relationship between each attribute and overall patient satisfaction or behavioral intentions. The six attributes are admission process, nursing care, physician care, compassion to family/friends, pleasantness of surroundings, and discharge process. Data used in this cross-sectional study were obtained through a survey questionnaire mailed to patients within ten days to two weeks of their hospital discharge. | 2 |
| **Results** | | | **Conclusion** | | |
| This study found that among six attributes, nursing care showed the largest parameter estimate for the patient satisfaction and behavioral intentions models. The sizes of parameter estimates can tell how much influence each healthcare attribute has on overall satisfaction and behavioral intentions. By comparing the sizes of parameter estimates, it is possible to rank order the healthcare attributes. The results demonstrate that for the overall satisfaction model, nursing care shows the largest parameter estimate (0.53), followed by admission process (0.15), surroundings (0.11), compassion to family/friends (0.10), physician care (0.05), and discharge process (0.03). For the behavioral intention model, nursing care again shows the largest parameter estimate (0.40), followed by compassion to family/friends (0.21), discharge process (0.17), surroundings (0.13), physician care (0.08), and admission process (0.04). | | | Healthcare organizations are faced with not only having to cut costs but also improving the quality of care they provide. In this environment of increasing resource constraints, organizations have to use their available resources effectively and efficiently. This study suggests that improving nursing care, especially its weak areas, in a hospital setting, is the most effective way to increase patient overall satisfaction and behavioral intentions. | | |

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| **Non-Experimental Studies (N=72)** | | | | | |
| **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. Patak L, Gawlinski A, Fung NI, et al. Patients' reports of health care practitioner interventions that are related to communication during mechanical ventilation. *Heart Lung.* 2004;33(5):308-320.[140](#_ENREF_140) | To describe the level of frustration experienced by mechanically ventilated patients and ascertains the helpfulness of methods used by health care practitioners to meet the communication needs of the mechanically ventilated patient | The sample was comprised of critically ill patients (N=29) who had been extubated within the last 72 hours in a single intensive care unit (ICU) of an urban, university medical center. | Qualitative  Quantitative  Cross-Sectional | Subjects participated in an average 30-minute audiotaped interview session. Interviews took place in the unit in a private critical care or intermediate care patient room with a curtain drawn or door closed. The interview included 13 questions, focusing on 3 major areas of interest: 1) the patients’ level of frustration with communication and their perception of communicating interventions used by health care practitioners; 2) the identification of the patients’ perceived communication needs and their perceived barriers and facilitators to effective communication; and 3) a retrospective evaluation of the perceived helpfulness, use, and content of a communication. Ten interview questions were open-ended to permit in-depth qualitative analysis, and 3 questions used a 5-point Likert scale (1= the least and 5= the most) for quantitative analysis. The open-ended questions asked the patients to describe their experience of communication while being mechanically ventilated, which included their needs, facilitators, and barriers. | 2 |
| **Results** | | | **Conclusion** | | |
| It was found that 62% of patients (N=18) reported a high level of frustration in communicating their needs while being mechanically ventilated. There was no significant difference between the duration of intubation and the level of frustration (Spearman r=0.109, p=0.573) or between the diagnosis and the level of frustration (p=0 .932). Patients who received anxiolytics (N=23, 79% of the sample) had a lower level of frustration (mean 3.26) than those who did not receive anxiolytics (N=6, 21% of the sample, mean 4.33). This difference trended toward significance (p=0 .084). Patients cited health care practitioner behaviors, characteristics, and attributes that both facilitated communication (kind, informative, and physically present at the bedside) and impeded their ability to communicate (mechanical, inattentive, and “absent” from the  bedside). Patients reported problems and stresses associated with communication difficulties that can be alleviated by the health care practitioner. | | | The results of this study permit health care practitioners to see the communication needs of mechanically ventilated patients through the eyes of the patient. Patients report being frustrated in their attempts to make their needs known and further acknowledge the role of the critical care nurse in bridging the communication gap. The authors suggest that future research is needed to evaluate interventions aimed at facilitating communication with respect to outcomes such as patient satisfaction, patient anxiety, optimal pain control, and comfort. | | |

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| **Non-Experimental Studies (N=72)** | | | | | |
| **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. Person SD, Allison JJ, Kiefe CI, et al. Nurse staffing and mortality for Medicare patients with acute myocardial infarction. *Medical Care.* 2004;42(1):4-12.[141](#_ENREF_141) | To assess the association of nurse staffing with in-hospital mortality for patients with acute myocardial infarction (AMI). | The sample was comprised of a data set of Medicare patients (N=118,940) hospitalized with AMI, from the Cooperative Cardiovascular Project (CCP) data set and American Hospital Association (AHA) Survey. Patients were seen in acute care hospitals (N=4,401). | Quantitative  Cross-Sectional | The CCP dataset was merged with the contemporaneous AHA Survey to obtain hospital characteristics. Nurse staffing levels were quantified with 2 separate variables: the ratio of full-time equivalent RNs to average daily census (ADC) and the ratio of full-time equivalent licensed practical nurses (LPNs) to ADC. To determine hospital teaching status, researchers merged the CCP data set with CMS administrative data to derive the intern to bed ratio (I/B) for each hospital. As part of the CCP, key prescribing measures for the management of AMI were developed. For these analyses, 4 key prescribing measures were chosen that might be markers for better processes of care initiated by physicians but not necessarily directly related to nursing activities: 1) provision of acute reperfusion therapy on admission, 2) administration of aspirin during hospitalization, 3) administration of angiotensin-converting enzyme inhibitors at discharge, and 4) administration of beta-blockers at discharge. The mortality status of each patient during hospitalization and at 30 days after admission was determined from Medicare administrative data. | 3 |
| **Results** | | | **Conclusion** | | |
| After adjustment for patient demographic and clinical characteristics, treatment, and for hospital volume, technology index, and teaching and urban status, patients treated in environments with higher RN staffing were less likely to die in-hospital; odds ratios (95% CI) of quartiles 4, 3, and 2 versus quartile 1 were 0.91 (0.86-0.97), 0.94 (0.88-1.00), and 0.96 (0.90-1.02), respectively. Conversely, after adjustment, patients treated in environments with higher LPN staffing were more likely to die in-hospital; odds ratios (95% confidence intervals) of quartiles 4, 3, and 2 versus quartile 1 were 1.07(1.00-1.15), 1.02(0.96-1.09), and 1.00 (0.94-1.07), respectively. | | | Even after extensive adjustment, higher RN staffing levels were associated with lower mortality. Our findings suggest an important effect of nurse staffing on in-hospital mortality. treated in high LPN staffing environments. | | |

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| **Non-Experimental Studies (N=72)** | | | | | |
| **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. Petersen MF, Cohen J, Parsons V. Family-centered care: Do we practice what we preach? *Journal of Obstetric, Gynecologic, and Neonatal Nursing.* 2004;33(4):421-427.[142](#_ENREF_142) | To determine nurses' perceptions and practices of identified elements of family-centered care. | The sample was comprised of licensed nurses (N=62), working in the neonatal intensive care unit (NICU, N=37) or working in pediatrics or the pediatric intensive care unit (PICU, N=25) in an acute care hospital. | Quantitative  Cross-Sectional | The study used a previously developed survey tool, the Family-Centered Care Questionnaire (FCCQ). The FCCQ consists of 45 items distributed across nine subscales representing the elements of family-centered care as defined by the Association for the Care of Children’s Health (ACCH) with the addition of staff support. The participants were directed to rank the items on a 5-point Likert-type scale representing their perception of how necessary each of the items are for family-centered care (Necessary Scale) and to what extent they are present in their current practice (Current Scale). Demographic information was also collected. The survey was distributed via interoffice mail to all licensed nurses (i.e., registered nurses and vocational/practical nurses) currently employed in the NICU, pediatrics, and the PICU. The only nurses excluded were those who were on leave of absence or who had not yet completed orientation. | 1 |
| **Results** | | | **Conclusion** | | |
| Scores representing current nursing practice of family-centered care were significantly lower than those representing its necessity (p=0.000). Nurses with 10 years or fewer of neonatal or pediatric experience scored significantly higher on both the total Necessary Scale (p=0.02) and total Current Scale (p=0.017) than did those with 11 years or more. Nurses who work in the NICU scored significantly lower on the total Necessary Scale (p=0.013) than did nurses who work in pediatrics or PICU. | | | Although nurses agree the identified elements of family-centered care are necessary, they do not consistently apply those elements in their everyday practice. Years of experience and clinical work setting influenced both perceptions and practices of family-centered care. The authors suggest that future research include: a) sampling across institutions and other areas of the country, b) modification of the survey tool to include cultural issues related to family-centered care, c) inclusion of other members of the multidisciplinary health care team, d) survey of parents and family members, and e) a pre-survey/post-survey design with the administration of an intervention addressing the findings of the pre-intervention survey. | | |

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| **Non-Experimental Studies (N=72)** | | | | | |
| **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. Roblin DW, Becher ER, Adams EK, et al. Patient satisfaction with primary care does type of practitioner matter? *Medical Care.* 2004;42(6):579-590.[143](#_ENREF_143) | To evaluate the association of patient satisfaction with type of practitioner attending visits in the primary care practice of a managed care organization (MCO). | The sample was comprised of patient satisfaction surveys (N=41,209) from patients seen in adult and pediatric primary care practices in a managed care organization. | Quantitative  Cross-Sectional  Retrospective  Observational | This was a study of patient satisfaction surveys randomly sampled from visits provided by the pediatrics and adult medicine departments in a managed care organization from 1997 to 2000. A post-visit survey was administered to a random sample of practice members typically within 2 weeks of their visit. The survey was administered by phone and took approximately 15 minutes to complete. Parent or guardians typically responded on behalf of pediatric medicine patients. Each patient survey record was linked to the original patient visit record to obtain information on presenting condition. A computerized record was completed at the time of a visit to a primary care practice. Logistic regression, with practitioner and practice fixed effects, of patient satisfaction versus dissatisfaction was estimated for each of 3 scales: practitioner interaction, care access, and overall experience. Models were estimated separately by department. Independent variables were type of practitioner attending the visit and other patient and visit characteristics. | 2 |
| **Results** | | | **Conclusion** | | |
| The percent of adult patients satisfied with care access was significantly (p<0.05) higher on PA/NP-attended visits than MD-attended visits, although the magnitude of the difference (2% of patients) was small. Likewise, the percent of pediatric patients satisfied with practitioner interaction was significantly (p<0.05) higher on PA/NP-attended visits than MD-attended visits, although the magnitude of this difference (1.5% of patients) was small. Patient satisfaction with care access or overall experience did not significantly differ by practitioner type. In adult medicine, patients were more satisfied on diabetes visits provided by MDs than by PA/NPs. Otherwise, patient satisfaction for the combined effects of practitioner type and specific presenting condition did not differ. | | | Averaged over many primary care visits provided by many physicians and midlevel practitioners, patients in this MCO were as satisfied with care provided by PA/NPs as with care provided by MDs. Because PA/NP compensation is less than MD compensation, increased use of PA/NPs in primary care delivery provides potential savings in care delivery costs. | | |

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| **Non-Experimental Studies (N=72)** | | | | | |
| **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. Rosenbaum E, Gautier H, Fobair P, et al. Cancer supportive care, improving the quality of life for cancer patients. A program evaluation report. *Supportive Care in Cancer.* 2004;12(5):293-301[144](#_ENREF_144) | To describe the utilization of the Stanford Cancer Supportive Care Program (SCSCP) designed to provide support for cancer patients, addressing the need for improved physical and emotional well-being and quality of life. | The sample was comprised of patient visits (N=398) at the SCSCP at the Center for Integrated Medicine at Stanford Hospital and Clinics. | Qualitative  Quantitative  Cross-Sectional | Questionnaires were created to evaluate patient acceptance of each modality such as yoga and massage. Programs were chosen based on a needs assessment conducted with nurse managers, medical social workers, physicians and patients. Program activities were tailored to meet the individual needs of the patients. Patients were not asked to compare programs. Linear analog scales were used to capture responses either 0–5 or 0–10 with 5 or 10 being the highest response. Patients were asked to provide demographic data and complete the questionnaires following their attendance on one or more of the 11 programs offered to them. Patients were asked to evaluate how the program helped them regarding increase of energy, reduction in stress, restful sleep, pain reduction, sense of hopefulness, and empowerment. Each program tailored questions to include educational aspects of their program activities. Data came from attendance records, phone questionnaires administered to a random cohort of participants, personal and telephone interviews with a random cohort of participants from all modalities. | 2,3 |
| **Results** | | | **Conclusion** | | |
| Over 90% of the patients using the SCSCP felt there was benefit to the program. Massage, yoga, and qigong classes had the highest number of participants. Of the 380 patients asked to evaluate their experience with restorative yoga, 96% felt it reduced their stress, 94% felt an increased sense of well-being, 74% felt an increase in energy, 65% reported more restful sleep, and 51% noted some improvement in pain. Of the 334 patients who evaluated the medical qigong program, 78% felt a reduction in their sense of stress, 74% noted an increased sense of well-being, 58% noted an increase in energy, 43% mentioned more restful sleep, and 22% felt they had achieved some pain reduction. The most popular service during the study period was chair massage, with 1400 massages given to patients, an average of 88 per month. While they were not evaluated in the same form as the other programs, many patients reported reductions in stress, greater energy, and more restful sleep as well as reduction in pain. Qualitative data showed benefit for each program offered. | | | This evaluation of a free cancer supportive care program initiated in a hospital outpatient setting provides initial evidence of patient satisfaction and improvement in quality of life. | | |

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| **Non-Experimental Studies (N=72)** | | | | | |
| **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. Rosenfeld P, Kobayashi M, Barber P, et al. Utilization of nurse practitioners in long-term care: Findings and implications of a national survey. *Journal of the American Medical Directors Association.* 2004;5(1):9-15.[145](#_ENREF_145) | To determine the national practice patterns of nurse practitioners (NPs) providing care in long-term care (LTC) facilities, including the number and characteristics of LTC facilities that use NPs for any portion of care to residents, NP activities, and employment arrangements between NPs, physicians, and facilities. | Participants included physicians who  are members of the American Medical Directors Association  (N=870). | Quantitative  Cross-Sectional | Members of the American Medical Directors Association (AMDA), the professional association of medical directors and physicians practicing in the LTC continuum, were surveyed. The survey instrument was constructed to obtain information in the following six domains: 1) the number of LTC facilities that have NPs involved in providing care; 2) the number of NPs engaged in care at these facilities; 3) the types of employment/financial arrangements between NPs and LTC facilities; 4) the types of services provided by the NPs; 5) the effectiveness of the NPs as perceived by the medical directors; and 6) the perceived future demand for NPs in LTC. The survey requested information on the demographic, education, and employment characteristics of the individual medical director as well as pertinent information on the facility. AMDA members were requested to complete a separate questionnaire for each facility in which they served as medical director. | 2 |
| **Results** | | | **Conclusion** | | |
| Of a total of 870 respondents (response rate 19%), 546 respondents (63%) reported the involvement of NPs in the care of residents in their facilities. In total, respondents identified 1,160 NPs involved in care, with a median of two NPs per responding facility (range, 1–10). Respondents reported that NPs make sick/urgent resident visits (96%), provide preventive care to long-stay residents (88%), and perform alternating required regulatory 30/60 (88%), hospice care (80%), and wound care (78%). Significant variations in practice patterns were found between NPs employed by a LTC facility (19% of respondents) as compared with those NPs employed in other arrangements. Large majorities of medical directors stated that NPs are particularly effective in maintaining physician satisfaction (90%), resident satisfaction (87%), and family satisfaction (85%). An additional 34% of the respondents projected an increased need for NPs in nursing homes in the future. | | | Study results suggest that most geriatric nurse practitioners are involved in the care of residents in LTC, and that they are more likely to be involved in the care of residents in the nation’s larger (>100-bed) LTC facilities. The substantial number and types of services provided by these NPs, coupled with the high resident, family, and physician (medical director) satisfaction with their services, suggests the need for educational, policy, and reimbursement strategies to encourage the further involvement of NPs in the care of LTC residents. | | |

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| **Non-Experimental Studies (N=72)** | | | | | |
| **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. Russell J, Krantz S, Neville S. The patient-provider relationship and adherence to highly active antiretroviral therapy. *Journal of the Association of Nurses in AIDS Care.*2004;15(5):40-47.[146](#_ENREF_146) | To compare adherent and non-adherent clients in one high-volume HIV clinic in which the majority of care is provided by nursing staff. | The sample was comprised of adherent (N=108) and non-adherent (N=22) clients in one high-volume HIV clinic in which the majority of care is provided by nursing staff. | Quantitative  Cross-Sectional | In the absence of an absolute gold standard, adherence status was determined by clinic staff using previous treatment history, development of resistance, expected virologic responses, overall health of the patient and follow-through of the patient for keeping appointments, pill counts, and so forth. In addition, medical record data were transcribed using a data collection protocol and included viral loads, CD4 counts, opportunistic infections, emergency room visits, and hospital inpatient days. Finally, the investigators collected frequency of clinic visits and promptness and reliability in keeping appointments. These data were used as supporting data for the adherent status of the patients. The indicator of the patient-provider relationship used in this study was satisfaction with care and the care provider. Satisfaction was measured using a slightly modified version of the Medical Care Subscale of the Patient Satisfaction Questionnaire (PSQ), and is a 43-item, Likert-type tool that quantifies patient satisfaction with eight aspects of medical care services and providers. | 3 |
| **Results** | | | **Conclusion** | | |
| Adherent patients were significantly more satisfied with the care they received than were non-adherent patients (Z=–2.023, p=0.043). Two-way analyses verified the absence of an interaction between adherence status and either employment or ethnicity, indicating that the difference in satisfaction scores was not influenced by differences in measured demographic characteristics. On further analysis, the subscales of the PSQ that were statistically significantly different were Interpersonal Manner (p=0.018), Doctor Conduct Total (p<0.001), and Quality Total (p=0.017). These subscales of the instrument included the following factors: the way the providers interact personally with the patient, competence of the provider, follow-up, thoroughness, respectful attitude, active listening skills, responsiveness to patient questions, and proactive plans for the patient’s best clinical outcomes (e.g., to decrease side effects of HAART by prescribing medications before side effects occurred. | | | Data from this study suggest that adherence to HAART is influenced by the quality of the relationship between the health care provider and the client. This relationship was operationalized on the basis of client reports of satisfaction with the care and the health care provider received in an HIV care setting. These data suggest that aspects of care, specifically those associated with the nature of the relationship between the provider and the patient, were associated with adherence to HAART. | | |

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| **Non-Experimental Studies (N=72)** | | | | | |
| **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. Scanlon J, Richards B. Development of a same day laminectomy program. *Journal of Perianesthesia Nursing.* 2004;19(2):84-88[147](#_ENREF_147) | To describe the process of development, application, and future implications of a project developed to study outcomes of patients undergoing lumbar laminectomy for discectomy (LLD) on an outpatient basis. | The sample was comprised of patients undergoing laminectomy (N=27) in a Northern California health maintenance organization hospital. | Quantitative  Cross-Sectional | A multidisciplinary nursing team proposed that some patients scheduled to undergo an LLD would be able to have this surgery as an outpatient. A 6-month research project was developed to study outcomes of patients undergoing LLD who were discharged after 4 to 6 hours of postoperative care in the PACU. Following surgery, the patient was brought to the PACU for a minimum of 4 hours. Once the patient was stable, awake, alert, and the pain adequately managed, the patient was moved to a recliner chair for the remainder of the PACU stay. The PACU nurse ambulated the patient and offered a diet. Following discharge, both a nurse from the PACU and the CNS from neurosurgery contacted the patient on postoperative day 1 by phone to conduct a health survey and a patient satisfaction survey. This survey inquired about immediate postoperative problems. During the conversation, the following were assessed: 1) the patient’s ability to tolerate food and fluids; 2) report of the operative site (drainage noted on clothing or bed linens); 3) pain control; 4) report of activity (i.e., ability to ambulate to bathroom, etc.). Patients were requested to rate their satisfaction based on the following scale: excellent, very good, good, fair, poor, or no comment. | 2,3,5 |
| **Results** | | | **Conclusion** | | |
| No patients required a return visit to the hospital or clinic within 24 hours. Further review of the 27 research subjects revealed that no patient required medical intervention sooner than the scheduled 1-month postoperative visit. The patient satisfaction survey had 63% rating care as excellent, 26% rating care as very good, and 11% with no comment. The telephone health survey interviews revealed most patients felt very good on the day after surgery. The postoperative soft tissue pain was well controlled with oral opioids. Many patients discontinued the pain medications within 2 weeks. Boredom was the most common patient complaint during the interview 2 to 4 weeks following surgery. | | | This research project shows that a same day LLD program benefits the patients and the hospital. Length of stay decreases and patient satisfaction increases. The authors suggest that the LLD project was successful due to the coordinated effort of the multidisciplinary nursing committee. | | |

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| **Non-Experimental Studies (N=72)** | | | | | |
| **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. Schirm V, Baumgardner J, Dowd T, et al. Development of a healthy bladder education program for older adults. *Geriatric Nursing.* 2004;25(5):301-30[148](#_ENREF_148) | To describe success of The Healthy Bladder Program, developed as part of an academic and health care partnership, designed specifically for older adults residing in independent and assisted living. | The sample was comprised of older adults (N=180) from long-term care communities, independent and assisted living. | Quantitative  Cross-Sectional | Program content for the 1-hour program was based on best practices that can be used by nursing staff to provide information about promoting and maintaining bladder health. The primary purposes of the program were to provide information about promoting and maintaining bladder health and to offer an individualized healthy bladder assessment, intervention, and evaluation program. This individualized program included a comprehensive health assessment with voiding diary, fluid intake, bladder scan, and a dipstick urinalysis. Project APNs met individually with each participant to develop a plan for bladder management strategies. | 2,3 |
| **Results** | | | **Conclusion** | | |
| Many participants identified noticeable improvements in bladder function, especially in managing the urge to go (50%) and emptying the bladder (50%). About 30% of respondents increased the amount of water they drank, and about 34% reported a change in the type of foods or fluids consumed; whereas 70% indicated that water intake remained the same or decreased, and 63% said they did not make any changes in foods or fluids. Pelvic floor muscle exercises (PFME) were carried out regularly by only 16% of respondents, by 40% occasionally and by 37% not at all. Cognitive strategies of positive self-talk were practiced by 56% and not at all by 36% of the respondents. The majority (N=73) of the 86 respondents expressed satisfaction with the program, with only 4 saying they were not satisfied and 9 giving no answer. | | | The program goal to provide bladder health information that older adults can use immediately was achieved. Knowledge as empowerment can lead to change. As shown in this project, giving new information made a difference for many older adults. For some, the need for more invasive and expensive professionally directed care may have decreased. | | |

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| **Non-Experimental Studies (N=72)** | | | | | |
| **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. Schmidt LA. Patients' perceptions of nurse staffing, nursing care, adverse events, and overall satisfaction with the hospital experience. *Nursing Economics.* 2004;22(6):295-306, 291.[149](#_ENREF_149) | To test a theoretical model of patients' perceptions of nurse staffing, the nursing care they receive, self-reported adverse events, and overall satisfaction with the hospital experience. | The sample was comprised of patients discharged from medical-surgical unit (N=148) in an academic medical center in Florida and community hospital in Texas. | Quantitative  Cross-Sectional | Patients’ perception of nurse staffing was measured using a five-item, empirically constructed scale from a previously completed qualitative study. The measure consists of five items, scored using a Likert-type format. Items capture the perception of patients that the nursing staff is overloaded. The items are negatively worded to preserve the original statements made by patients in the qualitative study. Patients’ perception of their nursing care was measured using the Schmidt Perception of Nursing Care Survey (SPNCS), an empirically derived measure based in a grounded theory study of patients’ experiences with receiving nursing care while hospitalized. Data for adverse events were obtained using a checklist with the dichotomous response options of “yes” or “no.” Overall satisfaction with the hospital experience was measured using a three-item, rationally derived scale. | 2 |
| **Results** | | | **Conclusion** | | |
| Several models were tested. In one, perception of nurse staffing was treated as a predictor of the number of adverse events and perception of nursing care. The number of adverse events and perception of nursing care were treated as joint predictors of overall satisfaction with the hospital experience. This model provided an adequate fit to the data; however, the path leading from the number of adverse events to overall satisfaction was not significant (p=0.53). In another model, perception of nurse staffing was treated as a predictor of both the number of adverse events and perception of nursing care; the number of adverse events was also treated as a predictor of perception of nursing care. Perception of nursing care was treated as the sole predictor of overall satisfaction with the hospital experience. This model also provided a good fit to the data, but again, the path from the number of adverse events to perception of nursing care was not significant (p=0.60). In another model, perception of nurse staffing was treated as a predictor of both the number of adverse events and perception of nursing care, with perception of nursing care treated as the sole predictor of overall satisfaction with the hospital experience. The number of adverse events was considered an outcome, and not predictive of any other variables. This model provided a fit to the data that was consistent with other models, with all paths significant at p<0.05. | | | A relationship between a patient's perception of nursing care and overall perception of the hospital experience was identified, validating the influence of the nurse in the total patient experience. The authors suggest that considering that nursing care is the one constant presence in the care of hospitalized patients, this finding is not surprising and is also consistent with the previous work of others. | | |

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| **Non-Experimental Studies (N=72)** | | | | | |
| **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. Schnelle JF, Simmons SF, Harrington C, et al. Relationship of nursing home staffing to quality of care. *Health Services Research.* Apr 2004;39(2):225-250.[150](#_ENREF_150) | To compare nursing homes (NHs) that report different staffing statistics on quality of care. | The sample was comprised of two groups of nursing homes (N=21). | Quantitative  Cross-Sectional | Onsite data collection with NH staff interviews were conducted both to assess quality of care and to confirm state staffing reports. Sixteen care processes typically implemented by nurse aides (NAs) were measured by research staff using standardized direct observation and resident interview protocols during three consecutive 12-hour weekdays in each NH. The care process measures relevant to NA job performance can be divided into four major domains: out of bed/social engagement; feeding assistance; incontinence care; exercise and repositioning. All participants were observed with at least one of three different observational protocols, but subgroups of participants were selected for interview. Participants with an MDS recall score of two or greater were asked questions about the occurrence of specific care processes. However, all participants were asked more general questions about the quality of assistance. Eleven care process measures related primarily to licensed nurse staff performance were evaluated based primarily on medical record review, with the exception of two resident interview measures, using standardized protocols. | 1 |
| **Results** | | | **Conclusion** | | |
| Staff in the highest staffed homes (N=6), according to state cost reports, reported significantly lower resident care loads during onsite interviews across day and evening shifts (7.6 residents per NA) compared to the remaining homes that reported between 9 to 10 residents per NA (N=15). The highest-staffed homes performed significantly better on 13 of 16 care processes implemented by NAs compared to lower-staffed homes. | | | The highest-staffed NHs reported significantly lower resident care loads on all staffing reports and provided better care than all other homes. The authors suggest that NA staffing above 2.8 hours per resident per day is associated with better quality. | | |

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| **Non-Experimental Studies (N=72)** | | | | | |
| **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 |
| 151. Scisney-Matlock M, Makos G, Saunders T, et al. Comparison of quality-of-hypertension-care indicators for groups treated by physician versus groups treated by physician-nurse team. *Journal of the American Academy of Nurse Practitioners.* 2004;16(1):17-23.[151](#_ENREF_151) | To determine whether the type of health care provider (i.e., physician versus physician-nurse team) affected the quality of hypertension care given to two groups of randomly selected adult women. | The sample was comprised of adult women (N=64) with hypertension from the Managed Association Perceptions (MAP) clinical trial who were seen in multiple hypertension clinics (N=2). | Quantitative  Cross-Sectional | There were 32 women in each assigned group. In one group, one or more physicians managed care, and in the other, a physician-nurse team managed care. Three indicators measured the quality of hypertension care: blood pressure control level, knowledge of hypertension, and discussion about blood pressure medications with the health care provider(s). The 24-hour ambulatory blood pressure monitor, Spacelab’s model number 90207, was used to measure and record systolic and diastolic blood pressures over a 24-hour period. The instrument “Check Your High Blood Pressure Prevention IQ” was used to measure knowledge of hypertension. During the study, a trained research team member collected data on knowledge of hypertension and cognitive representations of hypertension. The 24-hour ambulatory blood pressure monitor was attached to participants to record their blood pressure measurements every 30 minutes while awake and every 60 minutes while asleep. Participants were given instructions on how and where to return the ambulatory blood pressure monitor at the end of the 24-hour session. | 1,3 |
| **Results** | | | **Conclusion** | | |
| The group whose care was managed by a physician-nurse team demonstrated lower means for 24-hour systolic blood pressure and diastolic blood pressure (systolic: M=132, SD=14.9; diastolic: M=75, SD=11.3) than the group whose care was managed only by one or more physicians (systolic: M=136, SD=13.4; diastolic: M=79, SD=11.24). Also, the group whose care was managed by a physician-nurse team revealed significantly higher scores for discussion of blood pressure medication than the group whose care was managed only by one or more physicians. There were no group differences for knowledge of hypertension. | | | Nurses qualified to assist with meeting the needs of hypertension clients in primary care settings can positively affect clients’ knowledge about blood pressure medication and, perhaps as a result of this knowledge, how well the clients control their blood pressure. | | |

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| **Non-Experimental Studies (N=72)** | | | | | |
| **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. Shimabukuro TT, Kramer J, McGuire M. Development and implementation of a nurse-managed anticoagulation program. *Journal for Healthcare Quality.* 2004;26(1):4-12.[152](#_ENREF_152) | To describe the development, implementation, and preliminary evaluation of a nurse-managed anticoagulation program as well as key lessons learned in the process. | The sample was comprised of patients (N=35) receiving anticoagulation services through John Hopkins Community Physicians (JHCP), a physician-practice affiliate that provides primary care in multiple ambulatory medical centers (N=18). | Quantitative  Longitudinal | Determined by discussion with nurse and physician experts, the goals of the program were to: implement a fully functional nurse-managed anticoagulation service that would serve as a model for all JHCP sites and identify additional quantifiable indicators to further evaluation the effectiveness of the nurse-managed anticoagulation service. For an initial 2-month pilot phase during the implementation period, anticoagulation nurses were required to check each warfarin dose adjustment with a primary care physician (PCP). During this time, no major incidents or adverse events related to anticoagulation were reported. Anticoagulation nurses suggested several revisions to the interval history form and dose adjustment worksheet which were incorporated. After successful completion of this period of supervision, nurses were permitted to make independent warfarin dose adjustments within the guidelines of the worksheet. PCPs continued to monitor patient progress by reviewing and signing the interval history form at the end of their clinic session. | 1 |
| **Results** | | | **Conclusion** | | |
| A total of 69 patient visits for international normalized ratio (INR) checks were recorded for the 35 patients in the sample. Warfarin dose adjustments were required on 32 of 69 patient visits. Of the 32 warfarin dose adjustments, anticoagulation nurses made 22 and PCPs made 10. The average number of INRs drawn per patients was 1.97. There were no adverse events related to warfarin therapy reported through the JHCP incident reporting system from implementation through the audit time period. Post implementation audit results were: INRs precisely in target range 53.6%, INR in goal range ± 10% 68.1%, indication for warfarin documented 100%, goal INR documented 100%, documentation of action taken for out of goal INR 100%, and dose adjustment guidelines used correctly 86.4%. | | | If staffed properly and provided with appropriate resources, nurse-managed anticoagulation programs have the potential to improve the quality and efficiency of anticoagulation care, as well as increase patient and provider satisfaction. The authors suggest that four factors are key for success: 1) the availability of portable INR monitors; 2) the designation of specially trained nurses devoted to anticoagulation management; 3) use of an easily comprehensible and reliable decision support system to guide warfarin adjustment; 4) support from staff and management. The preliminary findings from this study indicate that specially trained anticoagulation nurses performed at least as well as PCPs in maintaining patients in goal INR range and that the nurse-managed care led to no adverse events related to warfarin therapy. These nurses were relatively consistent in following the worksheet guidelines and they were thorough in the documentation of care plans, goals, and results. | | |

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| **Non-Experimental Studies (N=72)** | | | | | |
| **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. Sochalski J. Is more better?: The relationship between nurse staffing and the quality of nursing care in hospitals. *Medical care.* 2004;42(2 Suppl):II67-73.[153](#_ENREF_153) | To examine the effects of nurse staffing and process of nursing care indicators on assessments of the quality of nursing care. | Inpatient staff nurses working in acute care Pennsylvania hospitals (N=8,670). | Qualitative  Quantitative  Cross-Sectional | A 9-page survey was designed to collect information on patient workload, quality of care, work environment, and other nursing care features in acute care general hospitals. The following measures were derived from the survey items: quality of nursing care, patient workload, tasks undone, and patient safety problems. Quality of nursing care was assessed by a survey item that asked, “In general, how would you describe the quality of nursing care delivered to patients on your unit on your last shift?” Each nurse was asked to report the number of patients for whom they provided direct patient care on their last shift. A patient workload between 1 and 20 patients for nurses on any of the 7 general inpatient units and between 1 and 6 for nurses on either of the 2 intensive care units was deemed to be within reasonable bounds. Nurses were asked to indicate which nursing tasks, among a list of 7 provided, went undone during their last shift due to time constraints. The survey included 2 questions that asked nurses to rate how frequently the following patient safety problems occurred among patients under their care over the past year: medication errors and patient falls with injuries. | 1 |
| **Results** | | | **Conclusion** | | |
| Nurses reported caring for 5.3 patients (SD±3.4) on average across all respondents. On average, nurses left 2.1 tasks undone at the end of their last shift, with 40% reporting 3 or more unfinished tasks. Sixteen percent reported that medication errors occurred more than rarely among their patients over the past year, and more than 1 of every 5 nurses reported patient falls with injuries occurred occasionally or frequently. The mean patient safety problems score was 3.1 (range, 1-10). One fourth of all respondents reported the quality of nursing care was excellent on their unit; just over 20% reported it to be fair or poor. Each of the study variables had a linear relationship with quality of care. The mean number of patients assigned to nurses declined across the range of quality score, falling by half as quality ratings rose from poor to excellent. The number of unfinished tasks fell from more than 5 to less than 1 as quality of nursing care assessments increased. Patient safety problems ratings likewise declined by half as quality assessments improved. Assessments of the quality of nursing care exhibited a strong relationship with the number of tasks left undone (r =.634, p <0.001). Although more modest in size, these quality assessments also had signiﬁcant relationships with patient safety problems as well as with patient workload. Workload, a structural feature, was also moderately, although signiﬁcantly, associated with the 2  process of care indicators, patient safety problems and unﬁnished care. | | | Nursing workloads, shown to be an important contributor to the outcomes of hospital patients in studies over the past several decades, is shown here to be associated with assessments of the quality of nursing care as well as with indicators of the process of care. These processes of care indicators are likewise related to quality assessments with effects that are even more pronounced than that of workload. | | |

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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 |
| 154. Tidwell L, Holland SK, Greenberg J, et al. Community-based nurse health coaching and its effect on fitness participation. *Lippincott's case management : managing the process of patient care.* 2004;9(6):267-279.[154](#_ENREF_154) | To report on the characteristics of the individuals participating in Health Matters, a community-based health promotion and fitness program for the elderly. | The sample was comprised of seniors (N=504) having one or more qualifying chronic health conditions, having membership in a  participating health plan, and ownership of a California Public Employees Retirement System (CalPERS) long-term care insurance policy. | Qualitative  Quantitative  Cross-Sectional | After completing assessments, half of the participants were randomly assigned to the Health Matters program (N=255), the balance into a control group. The Health Matters program was designed to empower  participants to be effective at chronic disease self-management and other health-promoting activities, to teach them and their family how to approach their physician with questions about the management of their condition, and to encourage an increase in physical activity. These goals were pursued starting with a client developed health action plan (including participants’ elected health priorities) and used nurse health coaching, patient education instruction and classes, a fitness program (Lifetime Fitness), and referrals to community programs. The nurse coach’s facilitation, coordination, and training functions were consistent with the Case Management Society of America standards of practice (CMSA). | 2,3 |
| **Results** | | | **Conclusion** | | |
| More than 90% of participants were in exercise programs at 12 months, and 30% had participated in one or more condition management classes. Participation was somewhat targeted by those expressing health action plan priorities relative to depression, anxiety, or weight: “Battling the Blues” (20 persons attended at least one session); a three-part series “Do I worry too much?” (22 participants); and a monthly information and support group on weight loss (19 participants). Use of the social worker was not high (8.9%) but consistent with the level of depression and anxiety among participants. The median number of visits was 3 and many (40%) went just once. | | | Health Matters demonstrated that it is possible to proactively recruit and retain individuals in a health-promotion program. The nurse coaches/case managers communicated with primary care physicians about the enrollees and their health action plans, but recruitment did not rely on physician referrals. | | |

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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. Van Hulle VC, Denyes MJ. Relieving children's pain: Nurses' abilities and analgesic administration practices. *Journal of Pediatric Nursing.* 2004;19(1):40-50.[155](#_ENREF_155) | To examine relationships among nurses' knowledge and attitudes about children's pain relief, nurses' abilities to overcome barriers to optimal pain management, nurses' analgesic practices, and pain levels of hospitalized children. | Convenience samples of nurses (N=67) from multiple units (N=7) in a Midwestern children’s hospital and the children (N=132) for whom they provided care were studied. | Qualitative Quantitative  Cross-Sectional | During 6-hour periods of care, analgesic practices of hospital nurse subjects and pain levels of children under their care were measured. Subsequently, the nurses’ knowledge and attitudes about relieving children’s pain, and their abilities to overcome barriers to optimal pain management, were measured. Direct and indirect effects of the nurse variables on the children’s pain levels were determined. Nurses’ knowledge and attitudes were measured by a 33-item instrument derived from the 37-item Nurses’ Knowledge and Attitudes Survey Regarding Pain originally developed to measure knowledge and attitudes about cancer pain in adult patients. The amounts of available analgesia and recommended analgesia were measured. Children’s pain levels were measured on a scale of 0 to 5 using the Caucasian, African American, and Hispanic photographic scales of the Oucher scale. The 6 photographs of a child’s face on each vertical scale represent increasing levels of pain, ranging from “no hurt” to “the biggest hurt you could ever have.” | 3 |
| **Results** | | | **Conclusion** | | |
| The mean level of nurses’ knowledge and attitudes about relieving children’s pain was 25.3, SD=3.4, or 77% out of a possible score of 33. The scores ranged from 16 (48%) to 32 (97%), with the higher scores reflecting more knowledge and more positive attitudes. The mean level of nurses’ abilities to overcome barriers to optimal pain management was 89.4, SD=19.3, or 69% out of a possible score of 130. The range of scores was 36 (28%) to 124 (95%), with higher scores reflecting more ability to overcome barriers. Significant positive relationships were found between nurses’ analgesic administration and children’s pain, and between nurses’ years of practice with children and nurses’ abilities to overcome barriers to optimal pain management. The children’s mean pain level was 1.63 (scale of 0 to 5), with one half of the children reporting moderate to severe pain. Of the 117 children who reported pain, 74% received analgesia. Nurses administered a mean of 37.9% of available morphine and means of 36% to 54% of recommended amounts of morphine, acetaminophen, and codeine. | | | The significant positive relationship between nurses’ analgesic administration and children’s pain was an important finding. Originally children’s pain level was conceptualized as an outcome variable, with an inverse relationship anticipated; that is, the more analgesics administered by nurses, the lower the children’s pain was likely to be. However, based on the positive relationship found, it might be suggested that it was the children’s pain level that triggered nurses to administer analgesia. | | |

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| **Non-Experimental Studies (N=72)** | | | | | |
| **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. Vincent D, Hastings-Tolsma M, Park JH. Down the rabbit hole: Examining outcomes of nurse midwifery care. *Journal of Nursing Care Quality.* 2004;19(4):361-367.[156](#_ENREF_156) | To examine the outcomes of nurse midwifery care at a large metropolitan university clinic setting. | The sample was comprised of women (N=510) who delivered with a nurse midwifery faculty practice at a large university tertiary care facility and for whom a Nurse-Midwifery Clinical Data Set (NMCDS) record existed. | Qualitative  Quantitative  Cross-Sectional | Data for this study were obtained from the NMCDS, which includes items such as demographic data, antepartum and intrapartum care measures, and delivery outcomes. Data were analyzed from the NMCDS records, which were completed in the prenatal and intrapartum settings on all nurse midwifery service patients birthing at the hospital. The nurse midwife who assisted the mother in birthing was responsible for recording the requisite data set data after each birth. Thus, the data recorded reflect the state of the mother and infant through fourth-stage labor only. The nurse midwifery faculty practice provided care in a university clinic setting and supported women giving birth on a unit where nurse midwives, family practice physicians, and obstetricians delivered patients in labor-delivery-recovery (LDR) rooms. | 3 |
| **Results** | | | **Conclusion** | | |
| There was a weak negative correlation between age and birth canal lacerations (r=−0.095, p=0.04). There was a positive, although weak, correlation between age and birth weight (r=0.163, p=0.001). Older women tended to have infants of higher birth weight. There was a significant correlation between level of education and the mode of delivery (r=0.013, p<0.05). Women with more education were more likely to have forceps or vacuum extraction used during delivery. Married women were more likely to have higher birth weight babies (F=4.246, p=0.04). For 45.5% of the sample, this was the first pregnancy to reach viability while for another 29.6%, it was the second. The mean BMI was 23.7 and ranged from 15.5 to 46.5. However, the majority of the sample (74.6%) had BMIs that were under 26. The mean weight gain during pregnancy was 31.9 lbs. and ranged from 25 to 43 lbs. There was a significant but weak correlation between BMI and birth weight (r=0.162, p=0.001). The higher the mother’s BMI, the higher the infant’s weight at birth. The number of prenatal visits was significantly but weakly correlated with infant birth weight (r=0.15, p=0.003). Of those who used tobacco (n=100), 89% had normal deliveries, 8% had an assisted delivery, and 6% delivered by cesarean section. There was a significant correlation between tobacco use and infant birth weight (r=−0.159, p=0.001), with smokers having lower-birth-weight infants. | | | Findings from this study would suggest that revision of the NMCDS tool is warranted with nurse midwifery quality indicators elucidated. Questions that address specific prenatal counseling and interventions as well as the amount and type of nursing interventions during labor, such as dose and timing of massage, may aid in identifying the added value that nurse midwives can bring to obstetrical practices. | | |

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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. Wager KA, Lee FW, Bradford WD, et al. Qualitative evaluation of South Carolina's postpartum/infant home visit program. *Public Health Nursing.* 2004;21(6):541-546.[157](#_ENREF_157) | To describe the qualitative methods and findings from a cost-benefit analysis of the Postpartum/Infant Home Visit (P/IHV) program which seeks to provide all Medicaid-eligible mothers and infants with at least one home visit by a nurse or other qualified health professional. | The sample was comprised of nurses (N=22) from four public Department of  Health and Environmental Control (DHEC) agencies and one private hospital-affiliated home health agency. | Qualitative  Cross-Sectional | Focus groups were held with nurses from five agencies in South Carolina that make the home visits. The purposes of the focus groups were: 1) to gain a deeper understanding of how the P/IHV program actually works, 2) to hear from nurses who have been working with the program of their experiences, and 3) to provide guidance in developing the empiric model for measuring cost-effectiveness of the P/IHV program. Most of the questions were open-ended and were intended to provide the evaluation team with insight into the P/IHV referral process, a “typical” P/IHV visit, and the factors that may lead to a mother receiving a second home visit. Nurses were asked to describe the mothers they were unable to reach or who may receive care elsewhere. They also shared their overall impressions of the program, including what aspects they liked and what aspects they felt could be improved. Nurses were encouraged to share stories or any experiences that they had in making the home visits. | 1 |
| **Results** | | | **Conclusion** | | |
| Analysis of the focus-group data suggests that what actually occurs during a home visit is fairly standardized. All agencies use standard assessment forms for documenting health history and physical findings on the mothers and infants; they all provide family planning information and education about feeding. Nurses indicated that they were knowledgeable about community resources and services available to the families they serve. Referral processes were identified as an important factor in determining whether a mother receives a home visit. These processes were not uniform across sites; some required a physician order; some receive referrals from just one hospital while others receive referrals from several. The South Carolina Medicaid program rules permit a second visit if deemed ‘‘medically necessary,’’ but second visits did not seem to be common in most areas. The reasons for the second visits were fairly consistent, with infant weight checks and maternal blood pressure checks the most common. Overall, the nurses felt that the home visit program has had a positive impact on the health and well-being of the mothers and infants served. | | | The focus groups were extremely helpful in accomplishing the stated qualitative evaluation component goals. The evaluation team not only gained a better understanding of how the P/IHV program actually works and heard firsthand from nurses throughout the state who make the home visits, but their findings contributed significantly to the empiric models used to accurately evaluate the cost-effectiveness of the program. | | |

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| **Non-Experimental Studies (N=72)** | | | | | |
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| 158. Wakefield BJ, Buresh KA, Flanagan JR, et al. Interactive video specialty consultations in long-term care. *Journal of the American Geriatrics Society.* 2004;52(5):789-793.[158](#_ENREF_158) | To assess provider and resident satisfaction with and outcomes of specialist physician consultations provided via interactive video to residents of a long-term care (LTC) center. | The sample was comprised of physicians (N=12) at two Veterans Affairs Medical Centers (VAMCs) and nurses (N=30) and residents (N=62) at a state LTC center. | Qualitative  Quantitative  Longitudinal | The Iowa Communications Network (ICN) is a digital network, providing data, voice, and interactive full-motion video service to all of Iowa’s 99 counties, schools K-12, higher education institutions, state and federal agencies, hospitals and clinics. Interactive video conferencing between the Iowa City and Des Moines VAMCs was used to provide consultation services to residents living at the Iowa Veterans Home (IVH). At the remote site, the patient’s primary nurse transported the patient to the telemedicine room and remained with the patient throughout the clinic visit. The IVH telemedicine coordinator, a registered nurse, was present at and facilitated each session. Data were collected using written surveys. The survey completed by the physicians included the patient identification number, date, clinic name, the time the consult began and ended, disposition of patient, and four satisfaction questions using Likert-type scales. The patient satisfaction rating included seven questions using yes/no responses and three Likert-type questions assessing overall satisfaction and preferences for telemedicine versus face-to-face consultations. The nurse satisfaction rating included four yes/no questions addressing the usefulness of the consultation and one Likert-type question assessing overall satisfaction. | 1,2 |
| **Results** | | | **Conclusion** | | |
| Data were collected on 76 individual consultations in six clinics. The most frequent outcome was a change in treatment plan with the resident remaining at the LTC setting (N=29, 38%) or no change in treatment (N=26, 34%). Physicians’ ratings were 78% good to excellent for usefulness in developing a diagnosis, 87% good to excellent for usefulness in developing a treatment plan, 79% good to excellent for quality of transmission, and 86% good to excellent satisfaction with the consult format. Overall, 72% of residents were satisfied with the consult format, and 92% felt that it was easier to obtain medical care via telemedicine. Nurses felt that the telemedicine clinics were a good use of their time and skills (100%). | | | Care delivered to residents of LTC settings via video conferencing offers a number of advantages, including avoidance of travel over long distance for patient and provider and potentially greater continuity of care. There is the potential to include nursing staff from the patient setting during the consultation session. Not only can the nurse provide valuable information about the patient to the physician, but there also may be greater accountability and follow-through on recommendations. | | |

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| **Non-Experimental Studies (N=72)** | | | | | |
| **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. Wanzer MB, Booth-Butterfield M, Gruber K. Perceptions of health care providers' communication: Relationships between patient-centered communication and satisfaction. *Health Communication.* 2004;16(3):363-383.[159](#_ENREF_159) | To determine the extent to which patient-centered communication (PCC) affected satisfaction with communication and with care itself. | This study was conducted at a large Children’s Hospital and was comprised of parents of child patients (N=195). | Quantitative  Cross-Sectional | Participants completed surveys assessing perceptions of physician, nurses, and hospital staff communication practices. In order to assess patient and parent perceptions of PCC behaviors a 5-step Likert scale 5 (very often) to 1 (never) asked the extent to which physicians, nurses, and hospital staff used specific types of PCC behaviors. The measurement tool, Perceptions of Physician and Nurse PCC Behaviors, included the following: 4 nonverbal immediacy items, 2 introduction items, 1 humor item, 1 clarity item, 1 listening item, and 4 empathy items. A shortened version of the Physician and Nurse PCC tool was used to assess perceptions of hospital staff PCC because the staff generally played a less ongoing, prominent role in patient care. Nurses and physicians interact regularly with patients and family members of patients while clerical staff and medical assistants have less open, more scripted interaction. | 2 |
| **Results** | | | **Conclusion** | | |
| Parent perceptions of PCC correlated positively with reports of satisfaction with physician communication (r=0.73, p=0.001), nurse communication (r=0.61, p=0.001), and staff communication (r=0.59, p=0.001). When both physicians and nurses used more PCC behaviors parents reported greater satisfaction with medical care received (r=0.67, p=0.001; r=0.68, p=0.001, respectively). Parents of healthier patients reported greater satisfaction (M=9.29, SD=1.68) with communication with their physicians (t[180]=1.80, p=0.04, d=0.26), than less healthy patients (M=8.87, SD=1.68). Parents of healthier patients reported greater satisfaction with their communication with nurses (M=9.35, SD=1.2) than parents of less healthy patients (M=8.97, SD=1.45; t[179]=1.91, p=0.03, d=0.29]. Parents of healthier patients reported greater satisfaction (M=4.74, SD=0.62) with the medical care they received from physicians than parents of less healthy patients (M=4.57, SD=0.62; t[180]=1.76, p=0.04, d=0.26). Parents of healthier patients saw physicians, nurses, and hospital staff members using significantly more PCC behaviors than did parents of less healthy patients (physicians: t[149]=2.63, p=0.001, d=0.40; nurses: t[153]=2.30, p=0.001, d=0.39; staff: t[164]=1.84, p=0.03, d=0.35). | | | The authors conclude that clusters of patient centered communicative behaviors, especially listening and immediacy, are strongly related to satisfaction with the health care experience. When they are perceived to be absent, parents are less satisfied, which has been linked to poorer health behaviors. | | |

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| **Non-Experimental Studies (N=72)** | | | | | |
| **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. Whitten P, Doolittle G, Mackert M. Telehospice in Michigan: Use and patient acceptance. *American Journal of Hospice and Palliative Medicine.* 2004;21(3):191-195.[160](#_ENREF_160) | To examine telephospice from the patient’s perspective, specifically to address use of services and patient acceptance. | Patients (N=187) receiving telehospice services in their homes. | Qualitative  Quantitative  Cross-sectional | In an earlier study, researchers examined perceptions of telehospice providers. This study examines telephospice from the patient’s perspective, specifically, use of services and patient acceptance. The goal of the research was to answer three questions: 1) How is telehospice used during the project, and what services are successfully provided for patients? 2) Why do some patients decline telehospice care? 3) What do telehospice patients like and dislike about telehospice care? To address the first question, providers completed a special telehealth nursing note that was maintained in the patient’s chart. To understand why some patients choose to receive telehospice services and others refuse, nurses were required to administer a survey to all patients refusing service. Finally, in-depth, open-ended interviews were conducted with 35 patients to gather qualitative data. | 2 |
| **Results** | | | **Conclusion** | | |
| Nurses initiated 87% of all telehospice visits; other providers initiated 12%, patients initiated less than 1%. Nurses participated in more than 90% of the televisits, with almost 30% including more than 2 people. Almost 70% of televisits were conducted for a routine follow-up. Unscheduled calls (typically made to check up on patients) accounted for 29% of the visits, physical assessments accounted for nearly half, with teaching, support, and pain assessments each accounting for a significant percentage. More than 70% of the 751 forms for patients refusing service were completed by a nurse, meaning that these patients were never given the option of service. The 282 surveys completed by a patient revealed 5 reasons for declining: 1) lack of interest, 2) patient not interested now, maybe later, 3) patient had enough things to worry about already, 4) apprehension about technology, 5) telehospice was not necessary. When asked if receiving telehospice care was different from in-person care, 77% said yes. For 60%, the best thing about telehospice care was the immediate access they had to providers. More than 70% responded that they would change nothing about the service; 25% said they would change some aspect of the equipment. Almost 60% of patients felt that telehospice had positively influenced their end-of-life care. When asked if they would use telehospice again, more than 70% said yes, 11% said no, and 17% said it depends or that they couldn’t think of a reason why not. | | | This study found high satisfaction on the part of patients who used telehospice. The equipment was successfully employed to provide a wide array of services, though most were routine rather than emergent. The authors suggest that the findings reveal important considerations for future telehealth endeavors. First, even though nurses were the providers who most commonly use this technology, a number of patients expressed frustration that the system was not used more frequently. Patients may prove less of a barrier in telehospice use than providers. Second, timing is a crucial issue. Perhaps it is best to wait until after a patient has been successfully enrolled before offering this intervention. Finally, access issues should be considered when rolling out a telehealth project. Even though more urban patients were enrolled, there were actually more televisits provided for rural patients because of the distances between these patients and their hospice providers. | | |

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| **Non-Experimental Studies (N=72)** | | | | | |
| **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 |
| 161. Zhang X, Grabowski DC. Nursing home staffing and quality under the nursing home reform act. *The Gerontologist.* 2004;44(1):13-23.[161](#_ENREF_161) | To examine whether the Nursing Home  Reform Act (NHRA) improved nursing home (NH) staffing and quality. | Data was taken from nursing homes (N=5,092) in the following states: Arkansas, Arizona, California,  Delaware, Idaho, Louisiana, Maryland,  Minnesota, New Jersey, New Mexico, Nevada,  New York, Ohio, Oklahoma, Oregon, Pennsylvania,  Tennessee, Texas, Virginia, Washington, Wisconsin, and West Virginia. | Quantitative  Cross-Sectional | Nursing home data were linked across the 1987 Medicare/Medicaid Automated Certification System and the 1993 Online Survey, Certification and Reporting system. Three separate quality measures were used to represent the quality of care in NHs. The outcome-oriented measures of quality were the number of residents with pressure ulcers, the proportion of residents with catheters, and the proportion of residents with physical restraints. Because labor constitutes 60–70% of NH costs, these procedures may be used as labor-saving practices on the part of NHs with potential negative consequences for resident health. Immobility resulting from the use of physical restraints may increase the risk of pressure ulcers, depression, and mental and physical deterioration; it may increase the risk of mortality as well. Urethral catheterization places the resident at greater risk for urinary tract infection, which may result in hospitalization. Other long-term complications include bladder and renal stones, abscesses, and renal failure. | 3 |
| **Results** | | | **Conclusion** | | |
| After controlling for other facility, resident, market, and state factors, there was a significant decrease in the proportion of residents with pressure ulcers, physical restraints, and urinary catheters following NHRA implementation. Researchers tested the association between a dummy variable representing the NHRA and NH quality, controlling for facility, resident, market, and state factors. The NHRA had a negative and statistically significant effect (p<0.05) on all three quality measures and was associated with a decline in: pressure ulcers (0.2 percentage point), rate of physical restraints (16.8 percentage point), and catheter use (2.5 percentage point). In the unadjusted descriptive statistics, the pressure ulcer rate increased by 0.5 percentage points. However, after controlling for the noted factors, the pressure ulcer rate was found to decrease by 0.2 percentage points. The increase in staffing was not directly related to quality improvements, but there was a positive relationship between registered nurse staffing and quality for facilities that were particularly deficient prior to the NHRA. RN hours per resident day increased 18% from 1987 to 1993. LPN hours per resident day increased 30% from 1987 to 1993. NA hours per resident day increased 24% from 1987 to 1993. | | | This study found some support for higher staffing and quality under the NHRA adopted in 1990. However, researchers were unable to link higher staffing under the NHRA to better quality except in certain cases where homes had substandard staffing in the pre-NHRA period. In light of the continued quality of care problems within the nursing home industry, these results are quite important for policymakers considering further actions such as increased regulatory oversight and a minimum staffing standard. The authors suggest that future research will be necessary to examine this issue and link the increased costs of such policies with the perceived quality gains and other potential benefits. | | |

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