**TABLE 2 Evidence Evaluation Table**

| Purpose of article or review | Design / Method / Conceptual framework | | Sample / setting | | Major variables studied with definitions | | | Measurement of major variables | Data analysis | | Study findings | Level of evidence  Conclusion(s) |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Adler-Milstein, J., Raphael, K., O'Malley, T. A., & Cross, D. A. (2021). Information sharing practices between US hospitals and skilled nursing facilities to support care transitions. *JAMA Network Open*, *4*(1), e2033980. <https://doi.org/10.1001/jamanetworkopen.2020.33980> | | | | | | | | | | | | |
| To measure the completeness, timeliness, and usability of information shared by hospitals when discharging patients to SNFs, and to identify relational and structural characteristics associated with better hospital-SNF information sharing. | | **Design:** Quantitative structured survey  **Methods:** Surveys were mailed to DONs of selected SNFs. The study was approved by the IRB.  **Framework:** American Association for Public Opinion Research (AAPOR) reporting guideline for survey studies. | **Sample:** 500 SNFs  Respondent n= 265 SNFs, representing 471 SNF-hospital pairs  **Setting:** Across U.S. | | | **IV 1**: Hospital relationship  -Formal integration (ownership/colocation)  -Informal integration (shared staffing across sites)  **IV 2**: Information sharing  -23 specific categories  **IV 3:** Facility and IT characteristics  **DV:** Information sharing in the dimension of completeness, timeliness, and usability | | For each dimension, a 5-point Likert scale from 1 to 5 was used. Independent variables were assessed using “always/often,” “sometimes,” or “rarely/never.”  For relational characteristics, eight binary measures were used. | | Descriptive statistics for hospital-SNF pair overall performance. Detailed measurement by bivariate models and multivariate logistic regressions Results were presented using odds ratios (ORs). Analysis was conducted using SAS software, 9.4 (SAS Institute Inc). | Having a hospital clinician at the SNF, formal integration of SNF with hospital, and participation in an ACO showed statistically significant completeness and timeliness of information.  SNFs reported spending mean (SD) of 6.5 (8.2) hours per week communicating with the hospital to obtain missing information.  with the hospital, | **LOE: III- A**  The collaborative efforts to improve IT infrastructure and clinician spanning both sites are significant factors for information sharing. The findings of the study are important for nursing, medical and IT leadership. Since the study uses self-reported data, the responses were subjective. |
| Definition of abbreviations: SNF: Skilled nursing facility, DON: Director of Nursing, IRB: Institutional Review Board, OR: Odds Ratio, CI: Confidence Interval | | | | | | | | | | | | |
| Boykin, A., Wright, D., Stevens, L., & Gardner, L. (2018). Interprofessional care collaboration for patients with heart failure. *American Journal of Health-System Pharmacy*, *75*(1), e45–e49. <https://doi.org/10.2146/ajhp160318> | | | | | | | | | | | | |
| To describe the collaboration between healthcare professionals during transition from hospital to the home setting. | **Design:** Quality improvement project  **Method:** Team-based approach- Advance care practitioners, Community paramedics and TOC pharmacists.  **Framework:** IHI Triple Aim goal: to improve patient experience, outcomes, and per-capita cost. | | **Sample:** 86 patients discharged under HF collaborative care model  compared to 596 patients with usual care over a 7-month period.  **Setting:** 855 beds community teaching hospital | | **IV:** Interdisciplinary interventions:  TOC pharmacist,  Community Paramedic program for high-utilizers and high- risk readmission cases, ACP- Heart Strong program, and HF RN- 1:1 education, care coordination and medication adjustment  **DV**: 30-day readmission rate for HF population | | | 30-day readmission rate of patients with primary diagnosis of HF | Internal administrative data  Shared EMR | | The 30-day readmission rate under collaborative care model was 10.5% as compared to 23.5% with usual care during 7-month period. | **LOE: V-B**  A team-based approach to manage high-risk HF patients, and real-time information sharing with shared EHR ensures continuity of care and positively impacts readmission reduction. |
| Definition of abbreviations: IV- Independent variable, DV- Dependent variable, IHI- Institute for Healthcare Improvement, HF- Heart Failure, TOC- Transition of Care, EMR- Electronic Medical Records, GDMT- Guideline Directed Medical Therapy, ACP- Advance care practitioners, SDOH- Social Determinants of Health | | | | | | | | | | | | |
| Driscoll, A., Meagher, S., Kennedy, R., Hay, M., Banerji, J., Campbell, D., Cox, N., Gascard, D., Hare, D., Page, K., Nadurata, V., Sanders, R., & Patsamanis, H. (2016). What is the impact of systems of care for heart failure on patients diagnosed with heart failure: A systematic review. *BMC Cardiovascular Disorders*, *16*. <https://doi.org/10.1186/s12872-016-0371-7> | | | | | | | | | | | | |
| Examine systems of care for heart failure that reduce hospital readmissions and/or mortality | **Design:** Systematic review  **Method**-  Studies from January 2008 to August 2015 included were: RCTs, non-RCTs, observational and cohort studies that reported systems of care for patients diagnosed with HF and aimed at reducing hospital readmissions and/or mortality.  **Framework:** Cochrane Highly Sensitive Search Strategy | | **Sample**: Search yield (N= 520) articles  n=29 met eligibility criteria (see Method for types of study designs)  **Setting:** Worldwide | | **IV**: Systems of care in the following  1: Specialist workforce,  2: primary care,  3: In-hospital care  4: Transitional/ Community based care  5: Nurse-led medication titration  6: Outpatient clinics  7: Telemonitoring/ telehealth  **DV**  1: Readmission rates  2: Mortality rates | | | Quality of evidence assessed by: Newcastle-Ottawa Scale (NOS) for non-RCTs and GRADE rating tool for RCTs  Cochrane Collaboration tool for risk of bias for randomized trials | Three authors selected articles independently based on inclusion and exclusion criteria.  Disagreements were resolved by discussion and consensus between the three authors.  PRISMA flow diagram | | Care provided by heart failure service reduces hospital readmissions and mortality.  - PCP and cardiologist collaboration also improved patient outcomes compared to a primary physician only.  - Nurse-led clinics, and early outpatient follow-up reduced hospital readmissions. | **LOE: III-B**  The evidence could be used for designing pre & post discharge interventions and for developing partnership with PCP, outpatients & post-acute care facilities. It also warrants further study on telemonitoring and telehealth and involvement of primary care providers, especially now when the pandemic has shifted the modes of communication between providers and patients. |
| Definition of abbreviations: QI- Quality Improvement, WHO- World health Organization, ICTRP- International Clinical Trial Registry Platform, PCP- Primary Care Physicians, f/u- follow-up, GWTG- Get with the Guidelines, BOOST- Better Outcomes for Older Adults through safe transitions, STAAR- State Action on Avoidable Rehospitalization, H2H- Hospital-to-Home program | | | | | | | | | | | | |
| Flanagan, N. M., Rizzo, V. M., James, G. D., Spegman, A., & Barnawi, N. A. (2018). Predicting risk factors for 30-day readmissions following discharge from post-acute care. *Professional Case Management*, *23*(3), 139–146. <https://doi.org/10.1097/NCM.0000000000000261> | | | | | | | | | | | | |
| a) Examine the relationship between individual-level determinants of health and readmitted residents  b) Identify and describe the risk factors of the residents readmitted within 30 days  c) Use the findings to inform and refine current practice to target the mutable risk factors correlated with 30-day hospital readmission. | **Design:** Descriptive Study  **Method:** Retrospective chart reviews of patients discharged from SNF to home and follow-up phone call to get 30-day readmission diagnosis.  **Framework:** Andersen's Behavioral Model for Health Services Use | | **Sample:** N=221  Patients ≥ 65yrs admitted to the SNF from Jan to Dec 2014 following hospitalization.  **Setting:** 180-bed SNF in Northeastern Pennsylvania. | | **IV:** Individual determinants of health, risk factors, and mutable risk factors.  **DV:** 30-day hospital readmission | | | Data collected by two nurses. Instrument developed specifically for the study that included  following tools: CAM,  Barthel Index,  BIMS, GDS,  Braden Scale,  fall risk instrument developed by SNF.  30-day readmission data were collected by follow-up phone call to patient. | Independent variables were cross tabulated with 30-day readmission, dichotomized as 30 days before  and after readmission,  To identify independent predictors, variables were entered into logistic regression model using forward Wald procedure. | | Odds of readmission within 30 days were three times greater in patients with CHF (p< 0.02);  Patients at "very high risk" on the Braden Scale were 20 times more likely to be readmitted before 30 days compared with those at low risk. | **LOE: III-B**  This is the first study that analyzed 30-day readmissions predictors after SNF discharge. CHF diagnosis again came as the top predictor for readmissions. Evidence could be used to develop leadership oversight and post-discharge best practices for SNF. |
| Definition of abbreviations: SNF- Skilled Nursing Facility, Hgb-Hemoglobin, HCT- Hematocrit, CAM- Confusion Assessment Method, BIMS- Brief Interview for Mental Status, GDS- Geriatric Depression Scale, CHF- Congestive Heart Failure, COPD- Chronic Obstructive Pulmonary Disease, TAE- Transdisciplinary Areas of Excellence | | | | | | | | | | | | |
| Gupta, S., Zengul, F. D., Davlyatov, G. K., & Weech-Maldonado, R. (2019). Reduction in hospitals’ readmission rates: Role of hospital-based skilled nursing facilities. I*nquiry: The Journal Of Health Care Organization, Provision, And Financing*, 56, 0046958018817994. <https://doi.org/10.1177/0046958018817994> | | | | | | | | | | | | |
| To examine the association between HBSNFs and hospitals’ readmission rates | | **Design:** Nonexperimental correlational study  **Methods:** Data sources included American Hospital Association Annual Survey, Area Health Resources Files, the Centers for Medicare and Medicaid Services (CMS) Medicare cost reports, and CMS Hospital Compare.  **Framework:**  a) Vertical Integration  b) Resource-Based View of the Firm | **Sample:** All nonfederal medical/surgical, acute-care hospitals in U.S. between 2007 and 2012  N= 24,556  AMI: n=8357  CHF: n=13,464  Pneumonia:  n= 14,114  **Setting:** Across U.S. | | | **IV:** Presence of HBSNF in a hospital  **DV:** 30-day risk-adjusted readmission rates for AMI, CHF, and pneumonia | | 30-day risk-adjusted readmission rates for AMI, CHF, and pneumonia for Medicare beneficiaries aged 65 years or more from Hospital Compare website  The presence or absence of an HBSNF in a hospital was measured based on number of HBSNF beds reported by the hospital in the AHA survey and Medicare Cost Reports. | | Bivariate analysis to assess the differences in the organizational and market characteristics between hospitals with and without HBSNFs. GEE models were used to examine the effect of HBSNFs on the overall variation in hospitals’ readmissions. SAS 9.3 and STATA 13 were used for data management and analyses | Between 2006 to 2012, 7% decrease in the proportion of hospitals with a SNF. The system-affiliated hospitals, as compared to the hospitals without affiliation, were associated with lower readmission rates for CHF (β = −1.30, P < .001). Higher proportion of SNFs to hospitals in the county had a significant association with lower readmission rates for CHF (β = −0.10, P < .001). | **LOE: III- A**  The study infers that the HBSNFs lower the readmission rates maybe through better integration of communication and IT resources between acute and post-acute care facilities. Evidence could be used to develop horizontal integration with the SNF when vertical integration is not feasible. As the market is shifting, the hospital and SNFs must develop interorganizational networks and work on reducing readmissions collaboratively. |
| Definition of abbreviations: HBSNF: Hospital-based skilled nursing facility, AMI: acute myocardial infarction, CHF: congestive heart failure, IRB: Institutional Review Board, U.S.: United States, GEE: Generalized estimating equation | | | | | | | | | | | | |
| Hinch, B. K., & Staffileno, B. A. (2021). Implementing a Heart Failure Transition Program to reduce 30-day readmissions. *Journal for Healthcare Quality*, *43*(2), 110–118. <https://doi.org/10.1097/JHQ.0000000000000268> | | | | | | | | | | | | |
| To improve the continuum of care by implementing HF transitional services, thereby decreasing 30-day HF readmissions. | | **Design:** Quality Improvement  **Method:** Monthly data  from November 2016 to September 2017, before and after HFTP implementation through hospital EHR and Vizient Clinical Data Base.  **Framework:** AHA Scientific Statement on Transitions of Care for Heart Failure Patients: Transitions of Care Recommendations for Clinical Practice | | **Sample:** N= 466 patients  **Setting:**  Large Midwest academic medical center in an urban setting with approximately 700 patients discharged with primary diagnosis of HF annually. | | **IV 1:** Comprehensive psychosocial evaluation by the SWCM within 24–48 hours of admission  **IV2:** patient education with RN and CM staff  **IV 3:** 7 to 10-day post discharge follow-up visit with HFNP  **IV 4**: post-discharge PCP visit within 30-day  **IV 5**: Post-discharge phone calls within 24-48hrs  **IV 6:** Bridge SW call within 5-7 days of discharge  **DV:** 30-day HF readmission | Readmission rates and discharge dispositions were obtained monthly through Vizient Clinical Data Base. All other data were extracted through the EMR retrospectively, 31 days after discharge, and stored in a secured database. | | Descriptive statistics were used to assess continuous variables, and frequencies were used to assess categorical variables. | | Post-HFTP cumulative readmission rate was 18.2% indicating improvement over the 11-month period. Among the readmissions, 57.3% were HF related.  Only 39.7% of the scheduled patients kept the appointment with HFNP. The 30-day PCP visit was scheduled at discharge in 36.7% of patients, and only 37.8% attended the first follow-up visit. The post-discharge calls by HFTP member were consistently high at 92.3%. | **LOE**: **V-A**  The HFTP protocol tested out the AHA framework that included clear guidelines for multidisciplinary team and was led by HFNP. The project resulted in reduction of HF 30-day readmissions. The study reiterates the importance of communication between inpatient and outpatient care teams, especially during the first week post-discharge when the chances of readmission are the highest. |
| Definition of abbreviations: HFTP: Heart Failure Transition Program, AHA: American Heart Association, SW: Social Work, CM: Case Management, NP: Nurse Practitioner, EMR: Electronic Medical Record | | | | | | | | | | | | |
| Jepma, P., Verweij, L., Buurman, B. M., Terbraak, M. S., Daliri, S., Latour, C. H. M., ter Riet, G., Karapinar - Çarkit, F., Dekker, J., Klunder, J. L., Liem, S.-S., Moons, A. H. M., Peters, R. J. G., & Scholte op Reimer, W. J. M. (2021). The nurse-coordinated cardiac care bridge transitional care programme: A randomized clinical trial. *Age and Ageing, 50*(6), 2105–2115. https://doi.org/10.1093/ageing/afab146 | | | | | | | | | | | | |
| To evaluate the effects of nurse-coordinated ‘cardiac care bridge (CCB) transitional care program’ on unplanned hospital readmission and mortality. | | **Design:** Single-blind, multicenter randomized clinical trial  **Method:** Study conducted between 5 June 2017 and 31 March 2020. Stratified block randomization to the intervention or control group, allocation ratio 1:1, was used with pre-stratification by study site and cognitive status (MMSE 15–23 vs ≥24).  **Framework:** None | **Sample**: 306 patients. Randomized (153/153)  Cardiac patients ≥ 70 years that met eligibility criteria  **Setting:** Six hospitals surrounding Amsterdam, The Netherlands | | | **IV: nurse coordinated** Cardiac Care Bridge Program  **DV 1:** All- cause unplanned readmissions at 3, 6 and 12 months after randomization  **DV 2:** Mortality at 3, 6 and 12 months after randomization | Mortality and readmission data collected from medical files and the Dutch National Personal Records Database. Also, included participants’ self-reported readmissions to other hospitals. Data collections were performed by research nurses who were blinded to the treatment allocation. | | Both univariate and multivariate analyses were conducted. The treatment effect was expressed as risk differences and risk ratios with corresponding 95% confidence intervals based on chi-square test. Analyses were performed with SPSS 25.0 and Stata Statistical Software. | | The incidence of the 6-month composite outcome of first all-cause readmission or mortality was 54.2% in the intervention group and 47.7% in the control group (RD 6.5%, 95% CI −4.7–18%, RR 1.14, 95% CI 0.91– 1.42, P = 0.341). The study found that the CCB program did not reduce hospital readmission or mortality within 6 months following hospitalization | **LOE:** **I-A**  **Worth to practice**: The nurse-coordinated transitional care interventions were not impactful on the high-risk older cardiac patients which indicates that the selected population may not be responsive to high-intensity preventive strategies and would benefit with more focus on quality-of-life efforts. Careful consideration should be given when implementing strategies for various age groups. |
| Definition of abbreviations: CGA: Comprehensive geriatric assessment, PT: Physiotherapy, CN: Community Nurse, MMSE: Mini-mental State Examination, CR: Cardiac Rehab, CCB: Cardiac Care Bridge | | | | | | | | | | | | |
| Naylor, M. D., Hirschman, K. B., Toles, M. P., Jarrín, O. F., Shaid, E., & Pauly, M. V. (2018). Adaptations of the evidence-based Transitional Care Model in the U.S. *Social Science & Medicine,* *213*, 28–36. <https://doi.org/10.1016/j.socscimed.2018.07.023> | | | | | | | | | | | | |
| **Primary aim:** Describe and classify common local adaptations of the Transitional Care Model (TCM).  **Secondary aim:** Examine transitional care (TC) practitioners' perceptions regarding the effectiveness of their organizations' TC programs, compared to standard care. | **Design:** Mixed-methods research  **Method:**  *Quantitative phase*- Deployment of survey that resulted in classification of TCM's 10 component's adaptation. Multiple recruitment strategies:  *Qualitative phase*: Additional data gathering by structured interviews of sample of survey respondents.  **Framework:** Stirman's System of Classifying Adaptations | | **Sample:** Online survey-  N= 582 respondents.  n= 342 (59%) that reported use of TCM.  n= 24 randomly selected for interview to expand understanding of nature reasons for TCM adaptations.  **Setting:** Respondents well distributed across U.S.  -Survey invitations sent by 32 national organizations to their members. | | **IV:** Implementation and adaptation of TCM contextual and content components.  **DV1:** Classification of TCM's component based on adaptations  **DV2:** Perception of effectiveness with total number of TCM adaptations as well as adaptations of individual components. | | | Quantitative data collected through survey. The qualitative data was collected via structured phone interview. Guide was developed by the project team. Interviews were recorded, transcribed, and verified for accuracy. | T-tests used to compare the total TCM components adapted based on the organizational types (eg. hospital vs non-hospital settings).  -STATA 14.0 software used for analyses.  -Atlas.ti software used for managing data. | | Qualitative findings: Two teams conducted the TC services-hospital staff identified high risk patients and community staff did telephone calls and home visits.  Quantitative findings: 4% of final sample implemented all 10 components.  96% reported wide range of adaptation.  - Top three adaptations were delivering services from hospital to home, relying on APPs and fostering care continuity. | **Quantitative:**  **LOE: III- A**  **Qualitative:**  **LOE: III-A**  **Worth to practice**: TCM is a well-known model. This study explores the adaptations of TCM model by the organizations as sometimes it’s not feasible to implement all components of a model. The knowledge of adaptation is critical as sometimes adaptations may improve outcomes. Also, the adherence to models may create discordance between fidelity and adaptations. |
| Definition of abbreviations: TC- Transitional Care, TCM- Transitional Care Model, APP- Advanced Practice Provider, EBI- Evidence-based Intervention | | | | | | | | | | | | |
| Raat, W., Smeets, M., Janssens, S., & Vaes, B. (2021). Impact of primary care involvement and setting on multidisciplinary heart failure management: A systematic review and meta-analysis. ESC Heart Failure, *8*(2), 802–818. <https://doi.org/10.1002/ehf2.13152> | | | | | | | | | | | | |
| Compare outcomes of different multidisciplinary HF DMPs in relation to their recruitment setting and involvement of primary care health professionals | **Design:** Systematic review and meta-analysis of RCTs  **Method:** Cochrane Collaboration methodology and PRISMA statement  - Databases: MEDLINE, Embase, and CENTRAL from 1st Jan 2001 to 31st December 2019.  **Framework:** None noted | | **Sample**: Search yield N= 3651 studies  n= 19 RCTs met eligibility criteria (7577 patients)  Thirteen (5243 patients) in hospital setting and six (2334 patients) in the community | | **IV 1:** Recruitment setting  **IV 2:** Involvement of PCP  **DV:**  1: All-cause readmission  2: HF readmissions  3: All- cause mortality  4: patient-reported outcomes  5: Costs | | | Quality of evidence was evaluated using Grading of Recommendations Assessment, Development and Evaluation approach. | Quality and risk of bias were assessed using *Cochrane Handbook for Systematic Reviews of Interventions.*  Meta-regression analysis using binary categorical covariates;  L'Abbé plots; meta-analyses with inverse variance weighting and random effects in RevMan version 5.3 | | Multidisciplinary HF DMPs that recruit in the hospital have significant effect on mortality and readmissions as compared to DMPs that recruit in the community.  -Multidisciplinary interventions compared with usual care,  reduced all-cause readmission, and HF readmissions.  PRO- Studies recruited in the hospital showed improvement in HF-specific QoL, depression scores and self-care. | **LOE: I-A**  PCPs are the key players in HF DMPs. These HF patients often have multiple comorbidities and require PCP oversight. Collaboration with PCPs will be key for successful TOC. |
| Definition of abbreviations: HF- Heart Failure, DMP- disease management programs, RCT- randomized controlled trial, QoL- Quality of Life, TOC- Transition of Care, PRO- Patient Reported Outcomes | | | | | | | | | | | | |
| Radhakrishnan, K., Jones, T. L., Weems, D., Knight, T. W., & Rice, W. H. (2018). Seamless transitions: Achieving patient safety through communication and collaboration. *Journal of Patient Safety*, *14*(1), e3–e5. <https://doi.org/10.1097/PTS.0000000000000168> | | | | | | | | | | | | |
| Describe a collaborative transitional care pilot program (Transitions Across Care Settings [TRACS]) between seven-hospital health system and post-acute senior care service provider. | **Design:** The article mentions it as Case Report  **Method:** Two healthcare organization partnered and implemented transitional care program (TRACS) for their mutual patients.  **Framework**: Coleman Care Transitions Intervention model | | **Sample**: N= 104 patients  **Setting:** In Texas, seven-hospital health system & one post-acute care provider with 4-SNF, 1-HH, 1- Hospice.  - Pilot over 12-month period | | **IV**: Bundle of one hospital visit, one home visit and three f/u telephone calls over four weeks.  **DV:** 30-day readmission rate of:  1: AMI  2: CHF  3: Pneumonia | | | - Patients could self-enroll in TRACS or referred by their physician.  -All referrals were received by TRACS coach through electronic referral system (Curaspan, Newton, MA).  -The coach maintained TRACS database, tracked transfers across the continuum & communicated information with SNF, HH, Hospice and hospital case management leaders weekly. | Using TRACS database  Excel (Microsoft, Seattle, WA) database | | Overall readmission rate- 4.8%.  Cohort specific readmission rates:  AMI- 0%,  CHF- 7.1%,  Pneumonia- 4.4%  There is no mention of readmission rate for non-TRACS cohort. | **LOE: V- B**  Evidence indicates that large health-systems and post-acute care providers can partner towards efficient TOC model. Post-acute care providers may invest in a dedicated coach/liaison to maintain database across systems and be the central point of communication.  Higher leadership commitment is key to undertake such collaboration. |
| Definition of abbreviations: SNF-Skilled Nursing Facility, HH- Home Health, AMI- Acute myocardial infarction, CHF- Congestive heart failure, FTE- full-time equivalents, TRACS- Transitions Across Care Settings | | | | | | | | | | | | |
| Samal, L., Dykes, P. C., Greenberg, J. O., Hasan, O., Venkatesh, A. K., Volk, L. A., & Bates, D. W. (2016). Care coordination gaps due to lack of interoperability in the United States: A qualitative study and literature review. *BMC Health Services Research, 16*, 1–8. https://doi.org/10.1186/s12913-016-1373-y | | | | | | | | | | | | |
| Determine, from a clinician perspective,  how care is coordinated and to what extent HIT is involved when transitioning patients between emergency  departments (ED), acute care hospitals (ACH), skilled  nursing facilities (SNF), and home health agencies  (HHA) in settings across the United States | | **Design:** Qualitative study with focus group interviews and structured literature review  **Method:** Clinicians and IT professionals were chosen from six regions of U.S. to participate in the focus group interviews.  **Framework:** Agency for Healthcare Research and Quality (AHRQ) Care Coordination Measurement Framework | | **Sample: N=**29 respondents.  N= 10 articles for literature review  **Setting:**  Respondents were distributed across U.S. | | **IV 1:** Focus group interviews  **DV:** Use of HIT for care coordination activities | Six one-hour ‘focus group-style interviews’ with clinicians and IT professionals.  The interviews were conducted between May and June 2012. Codes were assigned to variables. For reporting ease, the variables were categorized in three levels: provider-level, patient-level and system-level. | | Verbatim transcriptions of interviews were entered into QSR NVivo for coding and analysis.  The care coordination domains were categorized in three levels: provider-level, patient-level and system-level. The  interview responses were analyzed at each level for current capability of HIT and its future potential. | | Significant gaps in information transfer, systems to monitor patients, tools to support patients’ self-management goals and tools to link patients and their caregivers with community resources. Key barrier to effective HIT interventions is the lack of interoperability between EHRs, patient HIT tools, and community organizations’ HIT tools.  EHR are highly adopted in hospital, ED, SNF and HHA but it is not interoperable. | **LOE: III-B**  Interoperability challenges still exists even after a decade. With the advances in HIT, it is worth to pursue the solutions, especially around electronic transfer of information between facilities, linkage to community resources, and development care pathways. The evidence from the study should be used for HIT innovations across the continuum. |
| Definition of abbreviations: AHRQ: Agency for Healthcare Research and Quality, HIT: Health Information Technology, ED: Emergency Department, SNF: Skilled Nursing Facility, HHA: Home Health Agency | | | | | | | | | | | | |
| Summers, M. L., & Atav, S. (2020). Reducing hospital readmissions in Upstate New York: Teasing out the effective programs. *Professional Case* *Management, 25*(1), 26–36. https://doi.org/10.1097/NCM.0000000000000371 | | | | | | | | | | | | |
| Identify hospital programs, organizational characteristics, and levels of nursing involvement in hospital programs that contribute significantly to reductions in readmission rates and reimbursement penalties | | **Design:** Ex post facto design; Nonexperimental  **Method:** For the study, hospitals ranging from metropolitan to rural status were selected from upstate New York. Hospitals located near the New York City metropolis were excluded to ensure equitable representation.  **Framework:** Synthesis of Ecological and Synergy models | | **Sample:** N= 94 hospitals  **Setting:** Upstate New York (53 counties) | | **IV 1:** Hospital readmission reduction programs  **IV 2:** Organizational characteristics  **IV 2:** Levels of nursing involvement in hospital programs  **DV 1:** Hospital readmission rates  **DV 2:** Reimbursement penalties | Data from CMS, Agency for Healthcare Research and Quality, NYSDOH, and specific hospital websites. When specific data were not available from hospital websites, hospital personnel were contacted by phone. | | Bivariate analyses used to assess differences in mean readmission rates and reimbursement penalties. Pearson correlation coefficient used to calculate relationship between the number of HRRP initiatives and the various readmission and reimbursement outcomes. | | Hospitals collaborating with certified home health agencies showed lower overall readmission rates than hospitals that did not. When hospitals utilized a post discharge phone call, readmission rates related to heart failure were higher.  Hospitals utilizing house calls and higher number of HRRP initiatives showed lower reimbursement penalties. | **LOE: III- B**  Higher the number of HRRP initiatives, better outcomes in terms of readmissions and thus lower reimbursement penalties. Collaboration with home health agencies had positive impact on readmission reduction. The readmission reduction can be achieved mostly through the bundle of high-intensity interventions. |
| Definition of abbreviations: HRRP: Hospital Readmission Reduction Program, RN: Registered Nurse, NYSDOH: New York State Department of Health, CMS: Center for Medicare and Medicaid Services, HRRP: Hospital Readmission Reduction Program | | | | | | | | | | | | |
| Vedel, I., & Khanassov, V. (2015). Transitional care for patients with congestive heart failure: A systematic review and meta-analysis. *Annals of* *Family Medicine, 13*(6), 562–571. https://doi.org/10.1370/afm.1844 | | | | | | | | | | | | |
| Determine the impact of transitional care interventions (TCIs) on acute health service use by patients with congestive heart failure in primary care and to identify the most effective TCIs and their optimal duration | **Design:** Systematic review and meta-analysis of RCTs  **Method:** Cochrane Collaboration methodology.  Search from 1995 to Feb 6, 2014. Language- English & French.  Key words: Heart failure, transition, care planning & discharge.  Outcomes reviewed between TCI group and the usual care group.  **Framework:** PRISMA framework for reporting the results | | **Sample**: N= 11,423 studies  n=41 RCTs that met eligibility criteria (RCTs and participating patients with CHF diagnosis on discharge.  **Setting:** MEDLINE, PsycINFO, EMBASE, and Cochrane Database of Systematic Reviews databases | | **IV 1:** Transitional Care Interventions:Predischarge education by CHF nurse either via written material or video  **IV2:** Discharge plan (Med review, individualized care plan & DC letter to PCP/cardiologist)  **IV3:** Structured, proactive, and prearranged f/u.  **DV1:** All-cause readmission  **DV2:** All- cause ED visits | | | Quality of studies was assessed by critical appraisal, the Downs and Black Scale.  Team of experts created a taxonomy to classify TCI into homogenous group of interventions and their intensity. | Two reviewers independently examined the references based on the eligibility criteria. Full text of selected references was further reviewed per criteria.  Used random-effects models to study the effect of different interventions. I2 statistic used for measuring heterogeneity. | | -Two critical TC elements were home visits by a nurse, and number of follow-ups.  - Home visits led to a reduction of readmissions, whereas phone calls did not.  TCI reduces the risk of readmission by an average of 8%.  29% reduction in the risk of ED visits for TCI as compared with usual care (RR=0.71; 95% CI, 0.52-0.98). High-intensity interventions are efficacious at reducing the risk of readmission | **LOE: I-A**  High-intensity interventions and their durations impact risk of readmission. It would be beneficial to assess the frequency of such interventions.  High quality evidence on certain interventions when combined over a consistent period creates maximum benefit.  A combination of home visits with other types of follow-ups (telephone and/or clinic follow-up) or Telecare combined with prearranged direct contact with patients (e.g., home visits, telephone follow-up, video visits) |
| Definition of abbreviations: TCI- Transitional Care Interventions, CHF- Congestive Heart Failure, DC- Discharge, ED- Emergency Department, RCT- Randomized Control Trial | | | | | | | | | | | | |
| Weerahandi, H., Bao, H., Herrin, J., Dharmarajan, K., Ross, J. S., Jones, S., & Horwitz, L. I. (2020). Home health care after skilled nursing facility discharge following heart failure hospitalization. *Journal of the American Geriatrics Society*, 68(1), 96–102. <https://doi.org/10.1111/jgs.16179> | | | | | | | | | | | | |
| Study if home health care affects readmission during the transition from SNF to home after HF hospitalization | **Design:** Retrospective cohort study; Observational design  **Method:** Medicare Standard Analytic Files used to identify admissions to hospital & SNF. Merged with Medicare Denominator files that contained patient-level information.  **Framework:** None | | **Sample:**  N= 67,585  DC with HHC- 13,257 (19.6%)  DC without HHC- 54,328 (80.4%)  Beneficiaries, aged ≥ 65yrs with HF diagnosis discharged to SNF and then discharged home.  **Setting:** Fee-for-service Medicare database, 2012 to 2015 | | **IV 1:** Discharge from SNF to home with HHC  **DV 1:** Unplanned readmissions within 30-day of discharge to home from SNF  **DV2:** Readmission rate for patients with and without HHC services | | | Unplanned readmissions per CMS's methodology. | Comparison done using descriptive statistics, Elixhauser comorbidity scores. The time to unplanned readmission was compared using a multivariable Cox proportional hazards model. | | Readmission Rate for:  DC with HHC-22.8%  DC without HHC- 24.5%  The risk of readmission is lower in patients discharging with HHC than those discharged home without HHC.  The days between readmission is longer for patient discharged with HHC (11days) as compared to those without (9 days)(P < 0.0001). Only 20% received HHC services post SNF discharge. | **LOE:** **III-A**  HHC after SNF DC decreases the readmission risk. The transition from hospital to home and from SNF to home can be supported by home health care but the utility is very low. Only 20% of HF patients receive HHC after SNF discharge. |
| Definition of abbreviations: HHC- Home Health Care, SNF- Skilled Nursing Facility, AHRQ- Agency for Healthcare Research and Quality, LOS- Length of Stay | | | | | | | | | | | | |