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Reducing 30-Day Hospital Readmissions Through Interprofessional Collaboration/Multidisciplinary Team-Based Care Approach: A Benchmark Project

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Executive Summary

Hospital readmissions are a costly burden that hospitals often must sustain because of current reimbursement policies. The Hospital Readmission Reduction Program (HRRP), a value-based purchasing program, was established to reduce or penalize payment to hospitals for excessive readmissions (Centers for Medicare & Medicaid Services, 2020). Lower financial payments by payors often have a negative impact on a hospital's overall performance through the inability to purchase new and up to date equipment and materials, budget cuts, downsizing of personnel and departments, amongst all other things. Auerbach et al. (2016) estimate that approximately one-quarter or 26.9% of hospital readmissions were preventable. The purpose of the PICOT question "In patients being discharged from the hospital (P), how does a multidisciplinary team or interprofessional collaboration approach (I) compared to a PCP follow-up visit only approach (C) affect patients' readmission to a hospital (O) within 30 days of discharge? (T)" is to provide a possible avenue to lower hospital readmissions by looking for positive associations between a multidisciplinary team or interprofessional collaboration approach to patient care and rehospitalization.

Rationale for the Project

Health problems that patients present with when they seek help from health care providers have become more complex over the years. Patients with multiple coexisting diseases are associated with worse health outcomes, more complex clinical management, and increased health care costs (Valderas et al., 2009). The World Health Organization (2010) realizes there is a case for interprofessional education and collaborative practice for global health and also acknowledges the fragmented healthcare systems' struggle to manage unmet health needs throughout the world. There has been heightened academic interest and advocacy in the subject

of interprofessional collaboration (Paradis & Reeves, 2013, as cited in Schot et al., 2020) to provide a higher quality of care and better health outcomes in patients. Interprofessional collaboration in healthcare occurs when two or more professionals work collectively to achieve shared goals and is often utilized as a means for solving a variety of problems and complex issues (Green & Johnson, 2015). Healthcare organizations with a culture that promotes and values interprofessional collaboration actively experience optimal outcomes, particularly within the complexities of acute care (Zidek & Medland, 2020). The benefits of interprofessional collaboration or a multidisciplinary team-based approach can help curve rising health care costs and improve health outcomes through affecting the quality of care and reducing 30-day hospital readmission rates.

Project Goals

The goal of this benchmark project is to bring awareness of the benefits of interprofessional collaboration and multidisciplinary team care approach to patient care. Interprofessional collaboration is often defined within healthcare as a dynamic partnership between professionals from diverse backgrounds with distinctive professional cultures and possibly representing different organizations or sectors working together in providing services for the benefit of healthcare users" (Morgan, Pullon, & McKinlay, 2015, as cited in Schot et al., 2020). Improved patient outcomes with reduced rate of readmissions may be achieved by increasing interprofessional collaboration and leveraging the knowledge and skills of each profession and discipline in the hospital.

Eventually, the goal is the creation of an interprofessional/multidisciplinary team to collaborate and perform the discharge process for patients, with each clinican providing education and discharge instructions to patients according to their respective discipline.

Literature Discussion to Support Project

Guided by the PICOT question, a systematic literature search was conducted from January 2020 to September 2021. The databases searched included the Cumulative Index to Nursing and Allied Health Literature (CINAHL), Cochrane Database of Systematic Reviews (CDSR) and PubMed. Keyword and controlled searches included the following terms: *interprofessional; interprofessional collaboration; multidisciplinary; multidisciplinary team; readmission; and rehospitalization.* The literature search yielded several articles with varying levels of evidence, which includes systematic reviews/metanalyses, meta-synthesis, quasi-experimental, cohort studies, case studies, process improvements and evidence-based practice (EBP) projects. Twelve articles supporting the PICOT question, with publication dates within the past three years, were chosen to be critically appraised and reviewed.

All ten quantitative studies show that implementation of interprofessional collaboration or utilization of a multidisciplinary team-based care approach on patients resulted in a reduction in 30-day hospital readmission rates (Bailey et al., 2019; Baldino et al., 2021; Horne et al., 2019; Miller et al., 2020; Nall et al., 2020; Opper et al., 2019; Otsuka et al., 2019; Shah et al., 2018; Snyder et al., 2020; White-Williams et al., 2021). The systematic review by Shah et al. (2018), observational cohort study by Horne et al., (2019), and comparative case study by White-Williams et al., (2021) focused primarily on heart failure patients and the role of the interprofessional care team in lowering hospital readmission rates, while all other studies included in this review of literature had an all-cause admission diagnosis population (Bailey et al., 2019; Baldino et al., 2021; Miller et al., 2020; Nall et al., 2020; Opper et al., 2019; Otsuka et al., 2019; Snyder et al., 2020).

The studies featured multiple disciplines and health care professionals being part of the interprofessional team: physicians (MD/DO) (Baldino et al., 2021; Horne et al., 2019; Nall et al., 2020; Opper et al., 2019; Otsuka et al., 2019; Shah et al., 2018; Snyder et al., 2020; White-Williams et al., 2021) advanced practice nurses (APRN) and physician assistants (Bailey et al., 2019; Horne et al., 2019; Snyder et al., 2020); registered nurses (RN) (Bailey et al., 2019; Baldino et al., 2021; Horne et al., 2019; Nall et al., 2019; Opper et al., 2019; Otsuka et al., 2019; Shah et al., 2018; White-Williams et al., 2021); licensed practical nurses (LPN) (Bailey et al., 2019; Otsuka et al., 2019); pharmacists (PharmD or RPh) (Bailey et al., 2019; Horne et al., 2019; Miller et al., 2020; Nall et al., 2020; Otsuka et al., 2019; Shah et al., 2018; Snyder et al., 2020; White-Williams et al., 2021); pharmacy technicians (CPhT) (Bailey et al., 2019; Miller et al., 2020; Snyder et al., 2020); social workers or case managers (Bailey et al., 2019; Baldino et al., 2021; Horne et al., 2019; Nall et al., 2020; Otsuka et al., 2019; Shah et al., 2018; White-Williams et al., 2021); and dieticians (Horne et al., 2019; Shah et al., 2018; White-Williams et al., 2021).

Other outcomes that are common among the studies are (1) decrease in emergency department (ED) visits after discharge (Bailey et al., 2019; Nall et al., 2020; Opper et al., 2019; Otsuka et al., 2019; Shah et al., 2018); (2) reduction in mortality rate (Baldino et al., 2021; Horne et al., 2019; Shah et al., 2019); (3) decrease in hospital length of stay (LOS) (Shah et al., 2019; White-Williams et al., 2021); and (4) reduction in health care cost or expenditures (Bailey et al., 2019; Shah et al., 2019; White-Williams et al., 2021).

In a meta-synthesis study by Xychiris et al. (2018) that examined published studies from the last decade to elicit current usage of terms related to interprofessional working, four themes emerged and mapped out their typology and suggested classification tool of interprofessional work activity: *networking*, *coordination*, *collaboration*, and *teamwork*. Xyrichis et al. (2018),

form their concluding comments, challenge future academics and scholar to use and apply their classification tool to assist in making decisions about designing, classifying, and evaluating interprofessional activities and interventions.

Lastly, in a systematic review of literature by Schot et al. (2020), three themes emerged from their exploration of how healthcare professionals contribute to interprofessional collaboration: (1) *bridging* professional, social, physical, and task-related *gaps*; (2) *negotiating overlaps* in roles and tasks; and (3) *creating spaces* to be able to do so. The authors suggested that the more professionals actively deliberate with each other results in experiences of collaborative and high-quality care, as well as improvement in the integration of practice (Schot et al., 2020).

Project Stakeholders

The primary stakeholders for this project include patients and their families. Since one of the aims of the change project is to foster and cultivate more interprofessional collaboration across all healthcare professions, every staff member in the hospital will be affected by the project. All directors of hospital inpatient and outpatient units, including the ED, as well as directors of pharmacy; respiratory therapy; rehabilitation services; food and nutritional services; care transitions management (CTM); quality, patient safety, and risk management; and medical staff services, will act as key stakeholders for this proposed change. Permission for the change project will be requested from the executive team consisting of the hospital president, chief nursing officer (CNO), chief medical officer (CMO), associate chief nursing officer (ACNO) and vice president (VP) of operations and support services. Help for the planning, implementation, and evaluation of the change project will be solicited from clinical nurse leaders (CNL) of each department, as well as Texas Health HEB's dedicated nurse scientist and EBP champion.

Implementation

Texas Health Hurst-Euless-Bedford (HEB) Hospital will be the site for this change project. Texas Health HEB is one of the hospital entities of Texas Health Resources, a faith-based, non-profit, healthcare organization that serves North Texas.

The proposed change project will be 12 months long and will be implemented in four phases. The first phase will cover the data gathering of the current 30-day hospital readmission rate of the hospital, as well as it's consequent financial costs. This phase will take up to one month and its data will be used as comparison for the evaluation of the project. The second phase will focus on the creation of an interprofessional/multidisciplinary team to plan and organize a new approach to the discharge process and perform a cost-analysis of the proposed project. During this phase, roles and tasks for each discipline will be formulated and designed. This phase will approximately take one to two months to provide ample time for collaboration and consulting within each discipline. The third phase will consist of the presentation of the change project proposal to key stakeholders and, if approved, the implementation of the change project. Evaluation of the project will also be performed during this phase which will take six months. The last phase for this change project will focus on the presentation of results and dissemination of findings to key stakeholders and the executive team, as well as the push for integration of the practice change into current practice.

Foreseeable barriers include, but are not limited to, the unwillingness of staff to participate, COVID-19 restrictions regarding in-person meetings, and personality differences between healthcare professions. To remedy these barriers, the team for this change project will (1) build excitement and demonstrate the link between the proposed change and desired patient outcomes (Melynk & Fineout-Overholt, 2019); (2) utilize a virtual team meeting instead of in-

person for discussions; and (3) promote experience sharing by different healthcare professionals within the hospital to emphasize the need for change and positive outcomes of the change project (Melynk & Fineout-Overholt, 2019).

Julius Solis, BSN, RN, CEN will lead this proposed project change and will be assisted by the directors of the units and departments that will be involved in this project. Texas Health HEB's nurse scientist and EBP champion will also be consulted in this change project.

EBP Change Model

The Iowa Model for EBP to promote excellence in healthcare will serve as the framework for this change project. The Iowa Model is appropriate for this change project as it is very practical to apply and has a pragmatic multiphase change process with feedback loops (Melynk & Fineout-Overholt, 2019). The Iowa Model features designing and piloting a practice change with a goal of being integrated and sustained as a new standard of practice (Melynk & Fineout-Overholt, 2019). The proposed change project aims to pilot an interprofessional collaboration/multidisciplinary team-based care approach to the discharge process of patients to lower 30-day hospital readmission rates, with a long-term goal of better integration of interprofessional collaboration in Texas Health HEB.

Timetable/Flow Chart

The project will take up to 12 months to provide sufficient time for planning, implementing, and evaluating the proposed intervention. The first step consists of gathering, appraising, and synthesizing evidence from current literature to support the case for an interprofessional collaboration/multidisciplinary team-based approach to the patient discharge process. The next step is to collect data about the hospital's current best practices being used to lower hospital readmissions, as well as current hospital readmission rate and its financial cost to

the organization. These initial steps will be the foundation to build a strong business case for the project. Afterwards, consultation with different profession/discipline leaders will be done, as well as a cost-analysis of the project. The next step is the recruitment and assembly of the interprofessional care team to plan, discuss, and redesign the discharge process. Once this is done, the team will present the project proposal to the executive team to get buy in and approval to implement the practice change. Implementation will then happen for 6 months, and evaluation will happen in 60-day intervals. The team will then push for the practice change to be integrated into current practice if data from the implementation shows supports a reduction of 30-day hospital readmissions.

If for some reason, the proposed change project cannot be enacted, a well-written article highlighting interprofessional collaboration and its benefits toward the quality of care and patient outcomes based on current evidence and literature will be composed. This will be submitted to the Texas Health Resources corporate office for possible posting on the organization's intranet homepage for all staff to read.

Data Collection Methods

Patients discharged from the hospital who went through the interprofessional/ multidisciplinary discharge process will be included in the sample and a review of their chart will be performed to identify any hospital readmission event. A comparison of these results will be performed with baseline data collected from the pre-intervention phase of the project. To evaluate the process of the change project, an evaluation tool, most likely a questionnaire, will be developed and designed by the interprofessional/multidisciplinary team regarding patient responses to each of their intervention(s). For example, for pharmacy performing medication reconciliation, a possible evaluation question can be "I know all the medications I have to take

when I get home" and answers will be in the form of "Strongly agree," "Agree," "Neither agree or disagree," "Disagree," and "Strongly disagree." The complete questionnaire for this evaluation tool is currently unavailable as input from all disciplines involved is required. Formulation of the final questionnaire to evaluate the process of the change project will be done in the second phase.

Cost/Benefit Discussion

The proposed project change will have minimal cost compared to the potential financial savings it will yield in the long run. The paid participation and materials associated with the training and education of hospital staff about interprofessional collaboration will be the main resource needed for this change project. The possibility of an external consultant, specializing in interprofessional collaboration, to conduct staff education will also be considered. The development of a redesigned discharge process, which may result in additional full-time equivalent employees (FTEs), will complete the resources needed for this change project. Potential benefits of the project include (1) reduced 30-day hospital readmissions, which will lower financial penalties the hospital receives from payors; and (2) better integration of interprofessional collaboration within the organization which can improve patient and staff satisfaction, safety, quality of care, and costs.

Discussion of Results

There has not been a formal evaluation of this project currently. However, the manager of the discharge lounge has been very receptive to the idea of incorporating more interprofessional collaboration in the process of discharging patients. Additionally, peers from previous classes, and from this class, have given positive feedback on this proposed practice change.

Recommendations

The first recommendation is the inclusion of pharmacists and/or pharmacy technicians in the discharge process of patients. Baldino et al. (2021) demonstrated a decrease in 30-day hospital readmissions, as well as patient mortality through utilization of pharmacists to provide medication reconciliation and education throughout in-hospital stays and just prior to discharge. Bailey et al. (2019) revealed that inclusion of pharmacists and pharmacy technician in a transition of care program helped reduce 30-day readmissions, ED visits, and healthcare costs. Horne et al. (2019) also showed a lower 30-day readmission and mortality of heart failure patients with the inclusion of medication reconciliation by a pharmacist in the care of patients. The pharmacy-led transition of care in Miller et al. (2020) and Snyder et al. (2020) also showed a decrease in 30-day hospital readmission.

The second recommendation is the addition of licensed social workers/case managers in the discharge team. Utilization of social workers to assess psychosocial needs of patients and ensure proper and timely follow-ups are scheduled was shown to help decrease 30-day hospital readmissions and ED visits (Nall et al., 2020). A decrease in 30-day readmissions and ED visits, with the inclusion of social workers/case managers performing appropriate patient referrals, were also evident in Otsuka et al. (2019). The assessment of social determinants of health by a social worker was also part of the interprofessional team in White et al. (2021), which showed a positive impact on 30-day readmissions, hospital length of stay, and healthcare costs.

Lastly, although limited to certain diagnoses such as diabetes and heart failure, the addition of registered dieticians in the interprofessional/multidisciplinary discharge team is recommended. Inclusion of diet and nutrition counseling was shown to help reduce 30-day readmissions and ED visits in heart failure patients (Shah et al., 2018), as well as patient hospital length of stay and costs (White-Williams et al., 2021).

The proposed change project not only provides a solution based on current evidence that ensures quality, safe, and ethical care, but also fosters a better relationship between healthcare staff through interprofessional collaboration and teamwork. The minimal cost for this change project, relative to the healthcare expenditure it can prevent through lowering 30-day hospital readmission rates, makes it a very practical and suitable practice that the hospital can implement.

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Appendix A – Synthesis Table

Studies	Design	Sample	Intervention	Outcome
A	Quasi-experimental	N=2235	IP TOC	Decrease in 30-day readmissions Decrease in ED visits Decrease in costs
B	Cross-sectional case study	N=1373	IP TOC	Decrease in 30-day readmissions Decrease in mortality
C	Observational cohort study	N=6182	IP team-based care process	Decrease in 30-day readmissions Decrease in 30-day mortality
D	Case study	N=776	Pharmacy-led IP TOC	Decrease in 30-day readmissions
E	Prospective cohort study	N=203	IP TOC	Decrease in 30-, 60-, and 90-day readmissions
F	Evidence-based project	N=413	IP health team communication process	Decrease in 30-day readmissions Decrease in ED visits
G	Retrospective cohort study	N=660	IP TOC	Decrease in 30-day readmissions Decrease in ED visits
H	Systematic review of literature, meta-synthesis	N=64 articles	N/A	*Bridging* professional, social, physical, and task-related *gaps*; *negotiating overlaps* in roles and tasks; *creating spaces* to be able to do so.
I	Systematic review, meta-analysis	N=10 articles	IP care team	Decrease in 30-day readmissions Decrease in ED visits Decrease in mortality Decrease LOS
J	Retrospective cohort study	N=871	IP TOC	Decrease in 30-day readmissions
K	Comparative case study	N=840	IP TOC	Decrease in 30-day readmission Decrease in LOS Decrease in costs
L	Systematic review of literature, meta-synthesis	N=20 articles	IP PACT	Networking, coordination, teamwork, collaboration

Legend: A = Bailey et al., 2019, B = Baldino et al., 2021, C = Horne et al., 2019, D = Miller et al., 2020, E = Nall et al., 2020, F = Opper et al., 2019, G = Otsuka et al., 2019, H = Schot et al., 2020, I = Shah et al., 2018, J = Snyder et al., 2020, K = White-Williams et al.., 2021, L = Xyrichis et al., 2018, ED = emergency department, LOS = length of stay, IP = interprofessional, TOC = transition of care

	A♦	B	C	D	E	F
30-day reAdm	↓*	↓*	↓	↓	↓	↓
ED visits	↓*	NE	NE	NE	↓	↓
LOS	NE	NE	NC	NE	NE	NE
Mortality	NE	↓	↓	NE	NE	NE
Cost	↓	NE	NC	NE	NE	NE

	G	H	I♦	J	K	L
30-day reAdm	↓	NA	↓	↓*	↓	NA
ED visits	↓	NA	↓	NE	NE	NA
LOS	NE	NA	↓	NE	↓*	NA
Mortality	NE	NA	↓	NE	NE	NA
Cost	NE	NA	↓	NE	↓*	NA

Legend: A = Bailey et al., 2019, B = Baldino et al., 2021, C = Horne et al., 2019, D = Miller et al., 2020, E = Nall et al., 2020, F = Opper et al., 2019, G = Otsuka et al., 2019, H = Schot et al., 2020, I = Shah et al., 2018, J = Snyder et al., 2020, K = White-Williams et al.., 2021, L = Xyrichis et al., 2018, NA = Not applicable, NC = No change, NE = Not evaluated

* = statistically significant findings

♦ = higher level evidence

Appendix B – Timetable/Flow Chart

Overview of plan: to create and utilize an interprofessional/multidisciplinary team in the discharge of patients to reduce 30-day hospital readmission.

PHASE 1

Step 1: Gather, appraise, and synthesize evidence from current literature to support case for an interprofessional/multidisciplinary collaboration approach to the discharge process. Utilize different databases and online libraries in literature collection. (Month: 0-1)

Step 2: Collect data and information regarding current best practices being used in the hospital in preventing hospital readmissions, as well as current hospital readmission rates and their financial cost to the organization. Consult with patient quality department. (Month: 0-1)

PHASE 2

Step 3: Consult with different profession/discipline leaders and do a cost-analysis of the change project. (Month: 0-1)

Step 4: Assemble an interprofessional/multidisciplinary team to plan and organize a new approach to transition of care, with concrete definitions of roles each discipline would be responsible in performing. Here, specific goals of the project will also be established, as well as how to evaluate the performance of the project. This will take roughly two months with suggested weekly meetings. (Month: 1-3)

PHASE 3

Step 5: Present the proposal to hospital stakeholders. (Month: 3)

Step 6: If approval is obtained, perform change project. If approval is not obtained, revisit the plan, and strengthen the business case of the project. (Month: 4-10)

Step 7: Evaluate the project. 60-, 120-, and 180-day evaluation is suggested to provide ample time for data collection and synthesis. (Month: 4-10)

PHASE 4

Step 8: If goals are achieved, present and disseminate findings to hospital stakeholders, and integrate change project in current practice. (Month: 10-12)