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EVALUATION AND MODIFICATION OF A DISCHARGE

COMMUNICATION PROCESS BETWEEN ACUTE

AND PRIMARY CARE PROVIDERS

By

Steven M. Malarchick, MSN, RN, CFRN, CTRN, NRP

A scholarly project

submitted in partial fulfillment

of the requirements for the degree of

Doctor of Nursing Practice in the Department of Nursing.

Colorado Mesa University

Grand Junction, Colorado

Spring 2021

EVALUATION AND MODIFICATION OF A DISCHARGE COMMUNICATION PROCESS BETWEEN ACUTE AND PRIMARY CARE PROVIDERS

Steven M. Malarchick, MSN, RN, CFRN, CTRN, NRP

The final copy of this scholarly project has been examined by the signatories and we find that both the content and form meet acceptable presentation standards of scholarly work in the Department of Health Sciences. It has, therefore, been approved as meeting the requirements for the degree of Doctor of Nursing.
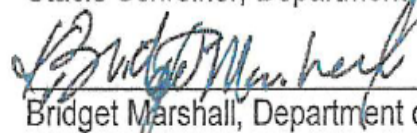
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ABSTRACT

EVALUATION AND MODIFICATION OF A DISCHARGE

COMMUNICATION PROCESS BETWEEN ACUTE

AND PRIMARY CARE PROVIDERS

The purpose of this quality improvement project was to evaluate the discharge communication process between an acute and primary care setting and modify it if necessary. Evidence from an integrated literature review supported three best practices, 1) electronic discharge communication methods, 2) discharge communication on the day of discharge, and 3) using more than one method of discharge communication. Transition theory by Afaf Meleis and the Model for Improvement provided the theoretical frameworks. Plan-Do-Study-Act cycles were utilized to compare best practices with actual practice and then to modify the discharge communication process. The implications of this project have the potential to improve patient morbidity, mortality, reduce readmissions, and add to the body of evidence supporting the importance of timely and effective discharge communications between acute and primary care providers.

Keywords: discharge communication, acute care, primary care, transition of care.

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SUBJECT: IRB Determination of Human Subject Research

DATE: October 19, 2020

STUDY: Protocol 21-10: Evaluation and Modification of a Process to Improve
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Determination Date: October 19, 2020

If you have any questions, please feel free to contact me at irb@coloradomesa.edu.

Best wishes on your project.

ACKNOWLEDGEMENT

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SECTION 1

INTRODUCTION

Ineffective communication during transitions of care (TOC) expose the

patient to increased risks of morbidity and mortality (Auerbach et al., 2016; Sheu

et al., 2015; Wiest et al, 2019). Transitions of care represent time intervals and/or

movements of a patient between care settings and/or healthcare practitioners

(The Joint Commission [TJC], 2012). Discharge from an acute care setting (ACS)

to home is an example of a TOC. Ineffective discharge communication between

acute and primary care providers (PCPs) can lead to undesirable health system

outcomes including costly readmissions to the ACS and lost revenue (Auerbach

et al., 2016; Sheu et al., 2015; Wiest et al., 2019). Effective communication

during discharge from an ACS has been linked with improved patient and health

system outcomes and increased patient and provider satisfaction (Sheu et al.,

2015). The purpose of this project is to evaluate and modify, if necessary, a

health system's discharge communication process to support patients' safe TOC

back to primary care settings (PCS).

Background of the Problem

Poor discharge communication between ACSs and PCSs leads to

negative patient and health system outcomes (Auerbach et al., 2016; Bell et al.,

2009; Sheu et al., 2015; Wiest et al., 2019). The most common negative outcomes include injuries from medication errors, post-procedure complications, infections, and patient falls (Kim & Flanders, 2013). Approximately half (49%) of the patients experiencing complications required some type of intervention including evaluation in the emergency department (ED) or clinic, additional diagnostic studies, or readmission to the ACS (Kim & Flanders, 2013).

ACS readmission rates and the associated costs are often used as a metric of negative health system outcomes. According to the Agency for Healthcare Research and Quality, patient readmission to the ACS within 30 days is one key measure indicating healthcare quality in the United States (Barrett et al., 2019). Readmissions are associated with higher costs to the healthcare system. Initial hospital stays average $12,500 compared to an average of $14,400 for the readmission stay (Barrett et al., 2019). Estimates put the cost of readmission in the United States at $12-$44 billion per year (Hansen et al., 2011).

According to TJC (2013), ACSs also evaluate the effectiveness of their TOC processes through evaluation of readmission data. The most recent data on readmission rates in the United States are displayed in Table 1.1. Root causes of a portion of these readmissions are secondary to ineffective discharge communication (Auerbach et al., 2016). Auerbach et al. (2016) identified several risk factors related to discharge communication that contributed to increased 30-day readmission rates to ACSs. These risk factors and the degree to which they attributed to readmission are listed in Table 1.2.

Table 1.1

Rate and Number of 30-day Readmissions in 2010 & 2016 by Insurance Type

Payer	2010 rate of readmission	2016 rate of readmission	2010 number of readmissions	2016 number of readmissions
Medicare	18.3	17.1	2,615,000	2,447,000
Medicaid	13.7	13.7	804,000	862,000
Private	8.8	8.6	735,000	641,000
Self-pay	10.4	11.8	169,000	137,000

Note. Adapted from "Characteristics of 30-day All-cause Readmissions, 2010-2016" by M. K. Bailey, A. J. Weiss, M. L. Barrett, and H. J. Jiang, 2019, *Healthcare Cost and Utilization Report, February 2019*, p. 3 (https://www.hcup-us.ahrq.gov/reports/statbriefs/sb248-Hospital-Readmissions-2010-2016.jsp).

Table 1.2

Discharge Factors Associated with Readmissions

Risk factor	% Attribution.
Lack of planning for discharge follow-up appointment	16.4%, (p .001)
Inappropriate amount of time between discharge and a follow-up appointment	14.9%, (p <.001)
Lack of patient awareness of who to contact after discharge	18.6%, (p <.001)

Risk factor	% Attribution.
Patient not aware of the follow-up appointment	8.9%, (p 001)
Ineffective communication to outpatient healthcare providers	10.8%, (p <.001)
Failure to pass on important information to the outpatient provider	aOR[a], 4.19; 95% CI, 2.17-8.09
Inability of the patient to keep their discharge appointment	8.3%, 95% CI; 4.1%-12.0%

Note. Adapted from "Preventability and Causes of Readmissions in a National Cohort of General Medicine Patients" by A.D. Auerbach, S. Kripalani, E.E. Vasilevskis, N. Sehgal, P.K. Lindenauer, J. P. Metlay, G. Fletcher, G.W. Ruhnke, S.A. Flanders, C. Kim, M.V. Williams, L. Thomas, V. Giang, S.J. Herzig, K. Patel, J. Boscardin, E.J. Robinson and J.L. Schnipper, 2016, *JAMA Internal Medicine*, *176*(4), 484–493 (https://doi.org/10.1001/jamainternmed.2015.7863).

[a] Adjusted odds ratio.

Primary care providers are tasked with the coordination of patient services, medication management, chronic illness management, and providing preventative services and screening (Healthcare.gov, n.d.). In the past, PCPs coordinated patient care during inpatient admissions and did not need communication of a patient's discharge. Currently, with the use of hospitalist providers, it is important for the PCPs to have timely and accurate discharge

communications when their patients leave the ACS (Kattel et al., 2020). Many

PCPs express dissatisfaction with the discharge communication process,

including its completeness and timeliness (Sheu et al., 2015). Effective discharge

communication processes not only improve patient outcomes and save

healthcare dollars, they also improve PCP satisfaction (Auerbach et al., 2016;

Sheu et al., 2015).

Clinical Practice Gap

Some healthcare systems lack an embedded and elucidated discharge

communication process for the transition of care between an ACS and PCS

(Auerbach et al., 2016; Bell et al., 2009; Kim & Flanders, 2013; Leyenaar et al.,

2015; Wiest et al., 2019). Gaps in healthcare exist as measured by patient and

health system factors (Auerbach et al., 2016; Barrett et al., 2019). A recent

systematic review (Kattel et al., 2020) of discharge summaries revealed that a

median of 55.1% where completed and transferred to the PCP within 48 hours

and 85.25% within four weeks. Most summaries included the primary diagnosis

(median, 98.95%) and secondary diagnosis (median, 82.4%). However, only

23% of PCPs were informed of discharge and a median of 41.9% had a follow-up

plan noted. The Centers for Medicare and Medicaid Services (CMS), recognizing

the value to patient safety, made discharge communications part of their

Condition of Participation within the CMS Interoperability and Patient Access final

rule (CMS, 2020). In 2013, the American Medical Association added the current

procedure terminology (CPT) codes that reimburse PCPs for transitional care

management. These codes incentivize discharge communication between ACSs and PCPs (Bloink & Adler, 2013).

Purpose and Project Overview

The purpose of this Doctor of Nursing Practice (DNP) scholarly project is to evaluate and modify, if necessary, a health system's ACS discharge communication process to support patients' safe TOC back to PCS. A doctoral student in nursing, in partnership with community stakeholders and university faculty, will evaluate and modify the process for discharge communication between an ACS and primary care. A health system located in the western United States is implementing a TOC communication process between ACS and PCS. This project will evaluate the TOC process and modify it, if necessary, using a time-series design. As project outcomes are achieved evidence demonstrates that there will be an improvement in the primary care follow-up of patients following their stay in an ACS resulting in reduced readmissions, better health outcomes, improved reimbursement and increased patient and provider satisfaction. The terms used in this project are defined in Table 1.3.

Table 1.3

Definitions

Term	Definition
Acute care system	Medical care provided on an inpatient basis including surgical and healthcare services for short term illness or medical conditions (CMS, 2020).

Term	Definition
Communication	The process of information delivery and exchange through different mechanisms such as verbal, written, and electronic routes (Merriam-Webster, 2020). For the purposes of this project communication refers to notification of discharge between acute and primary care providers.
Discharge	The point when a patient is transitioned from an inpatient at an ACS to a lower level of care such as their residence, rehabilitation center, skilled nursing facility, or other care environment (Encyclopedia of Surgery, n.d.). For the purposes of this project, discharge refers to the TOC of a live patient from the ACS to their home.
Evaluate	Appraising or studying a process to determine its efficacy, validity, or function (Merriam-Webster, 2020).
Modify	Make a change to a process that alters it in a basic it or fundamental way (Merriam-Webster, 2020).
Primary care	Health services that patients usually access for basic needs including wellness exams, treatment for common illnesses, management of chronic health conditions, preventative services, and the coordination of care with healthcare specialists (Healthcare.gov, n.d.).

Term	Definition
Process	A series of interrelated activities that are designed to provide a desired outcome (Merriam-Webster, 2020). For the purposes of this project process refers to the activities of communication between acute and primary care providers of a patient's discharge.
Provider	A designated person that is authorized by law to supply healthcare to patients such as a nurse practitioner, physician, physician assistant, chiropractor, nurse-midwife, social worker, dentist, etc. (UC Berkeley, 2020). For the purpose of this project, provider refers to inpatient physicians and outpatient clinic nurse practitioners, physicians and physician assistants.
Transition of care (TOC)	Represent changes in the location, level of care, or providers of care within healthcare (Kim & Flanders, 2013).

SECTION 2

REVIEW OF THE LITERATURE

The purpose of this scholarly project is to evaluate and modify, if necessary, a health system's discharge communication process to support patients' safe TOC back to PCS. An integrated literature review is conducted to gather pertinent literature and evidence to support the evaluation and possible modification of the existing discharge communication process.

Databases utilized for this review included the Cumulative Index of Nursing Allied Health Literature (CINAHL), Academic Search Complete and MEDLINE which is maintained by the National Library of Medicine. The search string used was "patient discharge AND ("communication" OR "notification") AND ("primary care" OR "primary health care" OR "primary care provider") AND ("quality improvement" OR "process change" OR "process improvement" OR "system improvement" OR "system change")". Table 2.1 displays inclusion and exclusion criteria used to select articles for the review.

Table 2.1

Inclusion and Exclusion Criteria

Inclusion criteria	Exclusion criteria
Published between 2010 and 2020	Published prior to 2010
Conducted in humans	Not conducted in humans
Published in English	Not published in English
Discussed discharge communication process change(s) between ACS and PCS	Involved discharge communication between different entities than ACS and PCS

Note. ACS = acute care setting; PCS = primary care setting.

The article selection process, detailed in Figure 2.1, was adapted from the Preferred Reporting Items for Systematic Reviews and Meta-Analysis (PRISMA) method (Moher et al., 2009). The initial search returned 77 articles. One additional systematic review article was identified, resulting in 78 articles. Twenty duplicate articles were removed. After title and abstract review, an additional thirty-six articles were removed. Eighteen articles were excluded as they did not address discharge communication between ACS and PCS. Sixteen articles were excluded as they were not related to discharge communication process changes. Two additional articles were not available through interlibrary loan.

Figure 2.1

PRISMA Diagram

Identification

Records identified through
database searching
(n = 77)

Additional records identified
through other sources
(n = 1)

Records after duplicates removed
(n = 57)

Screening

Abstract Screening
(n = 57)

Records excluded
(n = 36)

Eligibility

Full-text articles assessed
for eligibility
(n = 21)

Full-text articles excluded
(n = 12)

Included

Studies included in
synthesis
(n = 9)
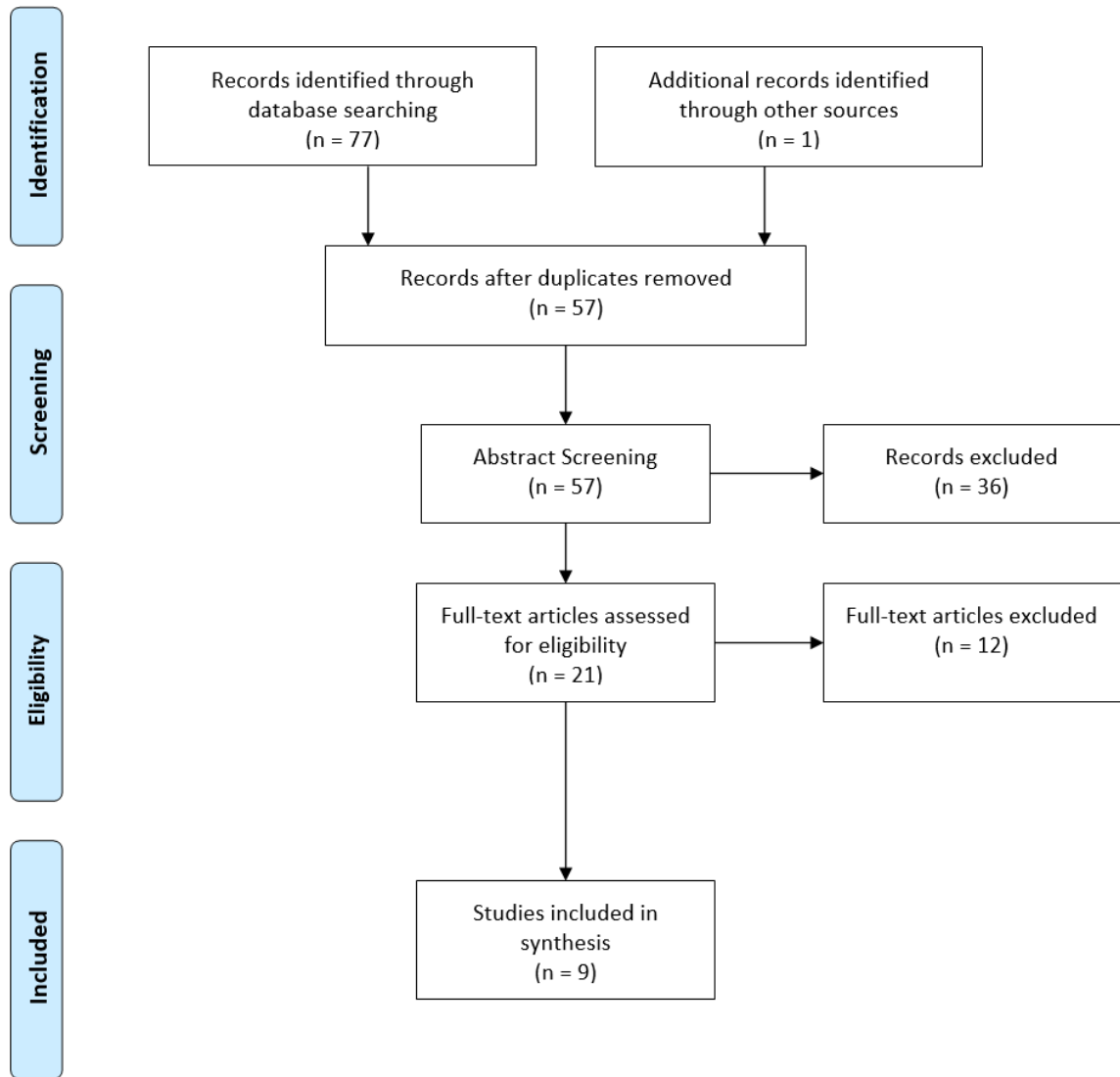
Note. Adapted from "Preferred reporting items for systematic reviews and meta-analyses: The PRISMA statement." by D. Moher, J. Tetzlaff, D.G. Altman, D. Altman, G. Antes, D. Atkins, V. Barbour, N. Barrowman, J.A. Berlin, J. Clark, M. Clarke, D. Cook, R. D-Amico, J.J. Deeks, P.J. Devereaux, K. Dickerson, M. Egger, E. Ernst, and P. Tugwell, 2009, *PLoS Medicine, 6*(7) (https://doi.org/10.1371/journal.pmed.1000097).

Twenty-one full text articles were reviewed for exclusion criteria. Twelve articles were excluded related to: being a review of another article already in the synthesis (n=1), being a commentary on articles published prior to 2010 (n=1), not discussing discharge communications from ACS to PCS (n=4), and not discussing discharge communication process change(s) (n=6). Nine articles were included in the synthesis.

Summaries for seven articles analyzed for this project are displayed in Table 2.2. The authors, article objective/aim, nature of discharge communication, the discharge communication format, and time frames for discharge communications are identified. Each article was reviewed to determine if the article was a discharge communication process evaluation, modification, or both.

Table 2.2

Intervention Articles

Author, year	Objective/aim	Nature of discharge communication	Discharge communication format	Time frame	Evaluation or modification
Bischoff et al., 2013	Increase discharge summaries completed on the day of discharge to at least 75%	ACS resident to PCP staff	EDC	DOD	Both
Destino et al., 2017	Increase verbal communication between PCP and pediatric medical services to at least 80%	ACS provider to PCP staff	V	DOD	Both
Harlan et al., 2010	To improve the timeliness, content and success of discharge information communicated to PCPs	ACS provider to PCP staff	EDC, AFDC	48h	Both

Author, year	Objective/aim	Nature of discharge communication	Discharge communication format	Time frame	Evaluation or modification
Libbon et al., 2019	Improve TOC of veterans from community hospitals to back to Veterans Health Administration PCPs	ACS case manager to PCP staff	MFDC	DOD	Both
Moyer & McGillen, 2018	Develop and implement a transitional care pilot program on the inpatient medical service	Discharge nurse to PCP staff	V	48h	Both
Shen et al., 2013	Achieve documentation of discharge communication with PCP with 2 days of patient discharge ≥ 90% of the time.	ACS hospitalist to PCP staff	EDC, AFDC, V	48h	Both
Tejedor-Sojo et al., 2015	Improve hospitalist communication with PCPs at discharge.	ACS hospitalist to PCP staff	V	DOD	M

Note. ACS = acute care setting; AFDC = auto fax discharge communication; DOD = day of discharge; EDC = electronic

discharge communication; M = modification; MFDC = manual fax discharge communication; PCP = primary care provider;

TOC = transition of care; V = verbal.

Discharge communication formats include electronic discharge communication (EDC) (Bischoff et al., 2013; Harlan et al., 2010; Shen et al., 2013), auto fax discharge communication (AFDC) (Harlan et al., 2010; Shen et al., 2013), manual fax discharge communication (MFDC) (Libbon et al., 2019), and verbal discharge communication (V) (Destino et al., 2017; Moyer & McGillen, 2018; Shen et al., 2013; Tejedor-Sojo et al., 2015). Discharge communication time frames include day of discharge (DOD) (Bischoff et al., 2013; Destino et al., 2017; Libbon et al., 2019; Tejedor-Sojo et al., 2015) and within 48 hours of discharge (48h) (Harlan et al., 2010; Moyer & McGillen, 2018; Shen et al., 2013). Articles are further categorized as being an evaluation (E) of a discharge communication process, a modification (M) (Tejedor-Sojo et al., 2015), or both (B) (Bischoff et al., 2013; Destino et al., 2017; Harlan et al., 2010; Libbon et al., 2019; Moyer & McGillen, 2018; Shen et al., 2013). Article summaries for two systematic reviews are displayed in Table 2.3. Table 2.4 displays the QI models utilized and outcomes related to discharge communication between the ACS and PCS.

The majority of the reviewed articles acknowledged the adverse effects of ineffective discharge communication on patient safety and outcomes (Harlan et al., 2010; Hesselink et al., 2012; Libbon et al., 2019; Moyer & McGillen, 2018; Shen et al., 2013). Many reiterated that poorly executed, delayed, and/or inaccurate ACS discharge processes negatively affected patients (Harlan et al., 2010; Libbon et al., 2019; Moyer & McGillen, 2018). Many of the interventions were designed to address these risks.

The two systematic reviews analyzed 76 articles related to interventions that included discharge communications (Hansen et al., 2011; Hesselink et al., 2012). Hansen et al. (2011) determined that five bundles of care including timely discharge communication between ACS and PCPs were related to decreased 30-day readmission rates. Two of these were statistically significant. Hesselink et al. (2012) included two randomized controlled trials that demonstrated statistically significant effects related to electronic discharge communication to PCPs and access by PCPs to web-based discharge summaries. These systematic reviews found relationships between discharge communications between ACS and PCPs to be related to better patient outcomes.

Process outcomes in the selected studies included timeliness of discharge communication (Bischoff et al., 2013; Libbon et al., 2019; Shen et al., 2013), quality of the discharge communication (Bischoff et al., 2013; Shen et al., 2013), rates of patients attending scheduled post-discharge appointments with PCPs (Libbon et al., 2019), and verbal communication rates between ACS and PCPs (Destino et al., 2017). Much of the research included pre-intervention, intervention, and post-intervention data. Table 2.4 includes outcome data for selected outcomes related to discharge communications.

Table 2.3

Systematic Reviews

Author, year	Purpose	Data synthesis	Conclusions
Hansen et al., 2011	Describe interventions evaluated in research studies to reduce 30-day readmissions.	43 articles divided into three domains of intervention. Predischarge: medication reconciliation, discharge planning, patient education, scheduling follow-up appointment prior to discharge. Post discharge: follow-up phone calls, timely communication with PCP, home visits post discharge, and patient activated hotlines	No intervention by itself was associated regularly with decreased 30-day readmission. Five studies researched timely communication between hospital and PCP. Three described electronic DS transmittal, one electronic admission communication and 1 described verbal communication directly between providers.

Author, year	Purpose	Data synthesis	Conclusions
		Bridging: PCP continuity from inpatient to outpatient setting, transition coaches, patient-centered discharge instruction	
Hesselink et al., 2012	Review interventions to improve discharge handover from hospital to PCP.	Included 36 studies of which 25 (69.4%) demonstrated significant effects in the intervention groups. 34 (94.4%) were multicomponent interventions. Interventions found to be effective included: electronic tools to generate structured DS quickly and clearly, medication reconciliation, shared involvement	Positive effects on patient care are seen with many interventions. Firm conclusions cannot be drawn pinpointing which interventions may have these effects related to the complexity of the interventions and their measures.

Author, year	Purpose	Data synthesis	Conclusions
		of community and hospital providers, discharge planning.	

Note. DS = discharge summary; PCP = primary care provider

Table 2.4

Intervention Articles QI Models and Impacts

Author, year	QI model used	Impact on discharge communication
Bischoff et al., 2013	PDSA	Average time from discharge to discharge summary (DS) completion 3.5 to 0.61 days (p<0.001); DS % complete on day of discharge 38% to 83% (p<0.001); PCP sees patients prior to DS available 38% to 4% (p<0.01)
Destino et al., 2017	Lean Process	Discharge had documentation of: Attempted or completed PCP communication 59.1% to 76.7% (p<0.001) Communication attempts with PCP 21.4% to 31.5% (p<0.001) Communication with PCP 37.0% to 45.2% (p<0.001)
Harlan et al., 2010	PDSA	Success of discharge information transfer to PCPs 63.9% to 72.6% (p=0.05)

Author, year	QI model used	Impact on discharge communication
		Timeliness of transfer of discharge information to PCPs 25.3% to 71.4% (p<0.01)
Libbon et al., 2019	PDSA	DS arriving prior to post discharge appointment 0% to 83%. Follow-up appointment within 30 days of discharge 25% to 71%.
Moyer & McGillen, 2018	None	Direct discharge communication with PCP 31%.
Shen et al., 2013	None	Rate of DS communication to PCP within 2 calendar days of discharge 57% to 85%. 5 of 7 health systems achieved aim of ≥ 90%.
Tejedor-Sojo et al., 2015	None	Rate of communication attempt or success at discharge: preintervention 57% (95%, CI=51% to 63%), after feedback 84% (95%, CI=89% to 97%), and after incentive bonus 93% (95%, CI=93% to 97%)

Note. DS = discharge summary; PCP = primary care provider; PDSA = plan do study act cycle; QI = quality improvement

Several of the intervention studies involved quality improvement development processes to guide the design of the interventions. Table 2.4 lists the quality improvement models used by the authors. Three articles used PDSA cycles, one used Lean methodology and three others did not list a model. Bischoff et al. (2013) had physician residents brainstorm and refine processes using PDSA cycles to design a template-based electronic discharge summary. Libbon et al. (2019) used PDSA cycles to create interventions that led to improved timeliness of discharge documentation to PCPs and improved veteran attendance at follow-up appointments. In Shen et al. (2013) the participating facilities engaged in parallel improvement projects using site-specific quality improvement tools such as process mapping and key driver diagrams to develop the primary outcome. Harlan et al. (2010) used fishbone diagrams, brainstorming, and identified opportunities for improvement to support the design of the intervention. Destino et al. (2017) used Lean A3 problem solving methodology to investigate poor discharge communication between ACS and PCPs. The most prevalent quality improvement model used was the PDSA model by the Institute for Healthcare Improvement (IHI).

Several of the interventions used various methods to foster improvement. For some, incentives and feedback were the interventions. One group of residents were provided feedback on discharge timeliness (measured as discharge summaries completed within one day of ACS discharge 75% of the time) and if they met their goal, ACS providers, received financial incentives (Bischoff et al., 2013). As seen in Table 2.2 completion time from ACS discharge

decreased from 3.5 days to 0.61 days (p<0.001) and PCPs reported a lower occurrence of the summary not being available at the time of follow-up (38% to 4%, p<0.001). One of the sites in Shen et al. (2013) included an undisclosed financial incentive. In Destino et al. (2017), the incentive provided to the residents was a voucher to the hospital coffee shop. The whole intervention improved ACS to PCS discharge communication from 59.1% to 76.7% (p<0.001). In Tejedor-Sojo et al. (2015), pay-for-performance included the measure of communicating with the patient's PCP at least 90% of the time. This incentive payment amounted up to $4,500. The baseline measurement was 57% which increased to 84% with audit feedback and increased to 93% following the addition of the financial incentive. All the studies with incentives provided feedback to participants detailing their performance measures.

Six studies demonstrated statistically significant positive outcomes in their selected measures. Veterans attended follow-up appointments more often (25% to 71%) and the PCPs at those visits had the discharge documentation at that time (0% to 83%) (Libbon et al., 2019). Timely discharge communication to PCPs within two days of discharge was increased from 57% to 85% (Shen et al., 2013). In Destino et al. (2017), timely verbal discharge communication increased from 59.1% to 76.7% (p<0.001). Documentation of hospitalist to PCP communication in the chart improved from 57% (95% CI=51% to 63%) to 93% (95% CI=89% to 97%) (Tejedor-Sojo et al., 2015). In Bischoff et al. (2013), measures of timely completion of discharge summaries, quality of the discharge summaries and availability of the summaries at the time of follow-up all significantly improved.

Harlan et al. (2010) demonstrated significant improvements in successful faxing of discharge summaries (63.9% to 72.6%; p=0.05) and timeliness of receipt of discharge summaries (25.3% to 71.4%; p<0.01).

In order to provide effective transitions for patients from ACSs to PCSs, evidence supports interventions that support timely discharge communications. Verbal communication was the most often utilized method of discharge communication studied (Destino et al., 2017; Moyer & McGillen, 2018; Shen et al., 2013; Tejedor-Sojo et al., 2015). Using only verbal discharge communication resulted in increased communication between ACSs an PCSs to 45.2% (Destino et al., 2017), 31% (Moyer & McGillen, 2018), and 74% (Tejedor-Sojo et al., 2015). EDC was the next most often used (Bischoff et al., 2013; Harlan et al., 2010; Shen et al., 2013). One of the studies utilized a multi-component process which included both verbal, EDC, and autofax (Shen et al., 2013).

Evidence supports utilizing EDC as the method of discharge communication (Bischoff et al., 2013; Harlan et al., 2010; Libbon et al., 2019). Using more than one method is also supported by evidence (Shen et al., 2013). Discharge communication should occur on the day of discharge (Bischoff et al., 2013; Destino et al., 2017; Libbon et al., 2019; Tejedor-Sojo et al., 2015). Utilizing PDSA cycles was the most frequently used quality improvement model to drive discharge process change (Bischoff et al., 2013; Harlan et al., 2010; Libbon et al., 2019).

SECTION 3

THEORETICAL FRAMEWORK

The foundation of nursing is based on relationships formed with clients

during their health journey (Zaccagnini & Waud White, 2017). One role of the

advanced practice nurse within these relationships is to provide the knowledge,

skills and support to navigate transitional times (Meleis, 2020). Discharge from

the ACS to PCS is a critical point in patients' TOC. This project utilized

Transitions Theory (TT) as a framework, which is a middle-range nursing theory

by Afaf Meleis (Meleis, 2020). In addition, the Model for Improvement (MI) by the

Associates in Process Improvement (API) served as an organizing framework for

the quality improvement process (Moran et al., 2020).

Transitions Theory

Meleis defined transition as "a passage from one life phase, condition, or

status to another" (Chick & Meleis, 1986). The change event is an external event

whereas the transition is an internal event. In this case, the change event is the

process change of discharge communication from an ACS to PCS and is a

critical turning point. How the TOC is managed and experienced can effect

outcomes (Meleis, 2020). TT may be applied in many different ways to the

discharge communication project. Meleis speaks of change events being

transition triggers and include events such as developmental (reaching a

developmental milestone), situational (a change in an entities situation, including

discharge), a change in health or illness status, and/or a change on the

organizational level (Meleis, 2020). The transition process during a change event

includes the anticipating stage, waiting for the transition to occur, experiencing,

marked by the transition event, and completing which is defined as reaching the

end of the transition process (Fawcett, 2017). An illustration of TT as adapted

from Meleis' work is presented in Figure 3.1.

Figure 3.1

Transition Theory Concept Map
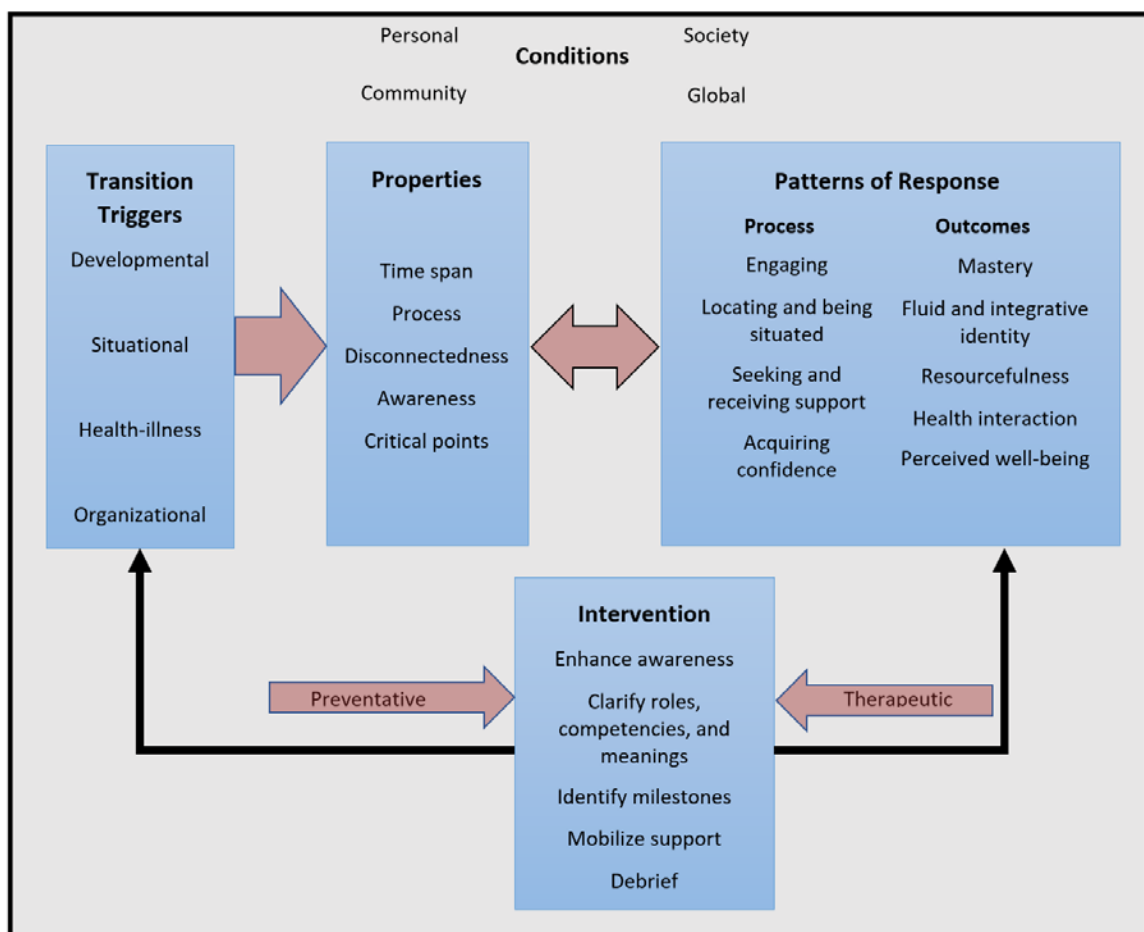
Transitions occur and are conditioned by the contexts in which they occur

(Meleis, 2020). These conditioning contexts can be experienced on many levels

of abstraction, including personal, community, societal and global. This is

consistent with the social-ecologic model which defines similar influencing factors

on health (Larsen, 2019). For example, this transition was conditioned by the

Covid-19 pandemic which influenced conditions on all four levels.

TT begins with the triggering event. In this project, that change event is

discharge communication from ACS to PCS. This event can be considered both

situational (for the client) and organizational (for providers). For this project, the

transition will be analyzed through the lens of an organizational trigger event.

This organizational change is a new process (discharge communication) and is

being evaluated and possibly modified. Stakeholder's experience this change

and transition, including the providers at both the ACS and PCS ends of the

discharge spectrum. These transition triggers are modified and cause various

responses throughout the transition process. Table 3.1 describes how various

facets of TT relate on the organizational level.

Table 3.1

Relationship Between Discharge Communication and TT Concepts

Concept	Organizational trigger
Properties	
Time span	Begins with discussion of change in discharge communication process, ends with comfort in new process achieved by stakeholders.
Process	Steps between initiation of discharge communication change to the time it is being utilized as visualized.
Disconnectedness	Stakeholders may experience disconnectedness during the transition between the old (known) process and the new discharge communication process.
Awareness	As the discharge communication process change is implemented stakeholders process the change, its meaning, and implications to their practice.
Critical points	ACS providers – decision to discharge, ordering the discharge, completing discharge summary.
	PCS providers – Discharge communication receipt, patient follow-up visit.

Concept	Organizational trigger
Conditions	
Personal	Affects providers on a personal level.
Community	Affects community of providers from both ACS and PCS. Potentially improves provider satisfaction and reimbursement.
Societal	Potentially improves outcomes and reimbursement.
Global	Potentially improves outcomes.
Patterns of Responses	
Process Patterns	
Engagement	Engagement in the discharge communication process.
Location, being situated	Being aware of one's place within the discharge communication process.
Follow up	PCPs have mechanism for timely follow-up of patients' post-discharge.
Acquiring confidence	PCPs gain confidence in the process of discharge communication creating follow-up opportunities with their patient population.
Outcome Patterns	

Concept	Organizational trigger
Mastery	ACS and PCS providers successfully being engaged, confident in the process, enabling timely follow-up leads to mastery of the discharge communication process.
Fluid/integrative identity	Displayed by providers adapting to process change and successfully making the discharge communication process operate effectively.

Note. ACS = acute care setting; PCS = primary care setting; TT = transition theory.

Properties that affect the experience and response to the triggering event include the time span of the event, the process the event follows, the amount of disconnectedness experienced during the process, awareness and knowledge of the details surrounding the event and critical points, or milestones, that occur in the transition process (Meleis, 2020). The trigger event, conditions, and properties inform the patterns of response. The patterns of response include the processes the entity uses to respond to the change event and those actions lead to the outcomes that are experienced. At any point, especially critical points, advanced practice nursing interventions can ease the transition (Meleis, 2020). Discharge TOC relates to the process of follow-up and the outcome of connection. Timely follow-up related to the triggers, including processes and interventions, help achieve expected outcomes (Meleis, 2020). In the case of discharge TOC, follow-up is measured by the variable of timeliness of discharge communication between ACS and PCS. The outcome of connection is related to health-interactions and resourcefulness (Meleis, 2020). Timely discharge communication sets the stage for the variable of interaction and connection with the PCP. This meaningful connection will, in turn, help a patient access internal and external resources.

Model for Improvement

MI has its roots in quality improvement work by Walter Shewhart and W. Edwards Deming (Joshi et al., 2014). MI is an evolution based upon Plan Do Check/Study Act (PDSA) concepts utilized by Shewhart and Deming. The model

consists of 3 focus questions to define the need for the quality improvement

followed by PDSA cycles to test and refine improvements. Table 3.2 details the

steps of API's MI.

Table 3.2

MI Steps for Quality Improvement

Step	Description
Focus question 1	What is trying to be accomplished?
Focus question 2	How will it be determined that the change is an improvement?
Focus question 3	What changes can be made that will result in improvement?
Plan	Plan the cycle of implementing the process change including assigning roles and timelines. Make predictions of the effectiveness the process change will make.
Do	Educate and train participants followed by implementing the plan. Take note of problems and observations.
Study	Measure the effect of the change to determine success and compare to the predictions from the Plan step. Note lessons learned and determine what subsequent actions are needed.

Step	Description
Act	Act on what has been learned. Modify process, if needed, and restart the PDSA cycle.

Note. Adapted from "The Healthcare Quality Book: Vision, Strategy and Tools" by M. Joshi, E. Ransom, D. Nash, and S. Ransom, 2014.

This framework is used to guide the evaluation and implementation of this quality improvement project. Stakeholders are involved in answering the focus questions to determine the objectives, outcomes, and measures. Through this process, a direction for the subsequent PDSA cycles is charted.

The science of nursing is integrated with organizational science in this practice application-oriented project through the further investigation of concepts and dimensions contained within TT. The project supports care transitions as critical inflection points in patient care. Timely discharge communication reinforces the concepts of patterns of responses and intervention frameworks (Meleis, 2020). Evidence suggests that by improving the discharge communication process between ACS and PCS, patient and health system outcomes improve, congruent with TT. All eight DNP essentials (AACN, 2011), as set forth by the American Association of Colleges of Nursing (AACN) for advanced practice nurses, are operationalized by this scholarly project as detailed in Table 3.3.

Table 3.3

AACN DNP Essentials

DNP essential	Evidence of operationalization
Essential I – Scientific underpinnings for practice.	The DNP project integrates nursing science with organizational science by using advanced strategies such as nursing theories and quality improvement models including TT and MI.
Essential II – Organizational and systems leadership for quality improvement and systems thinking.	The DNP project focuses on the needs of a target population to improve the quality of the discharge TOC by using quality improvement strategies and policy evaluation/modification. Multi-disciplinary collaboration is used to identify system issues and facilitate quality improvement and patient safety while being mindful of fiscal considerations.
Essential III – Clinical scholarship and analytical methods for evidence-based practice.	The scholarship of discovery and integration is operationalized by performing an integrated literature review which leads to evidence-based practice which is analyzed to determine best practices for

DNP essential	Evidence of operationalization
	improving the quality of the discharge communication process. Quality improvement methods are evaluated, analyzed and selected to implement the process change to result in timely, safe, efficient, effective and equitable patient care.
Essential IV – Information systems/technology and patient care technology for the improvement and transformation of healthcare.	Collaboration with information technologists provided the opportunity to evaluate and monitor discharge communication processes to support the quality improvement process.
Essential V – Healthcare policy for advocacy in healthcare.	Healthcare policy on the local system level is critically analyzed, evaluated, and modified in collaboration with healthcare stakeholders. The signing of the Affordable Care Act in 2010 lead to tracking of meaningful use measures and incentive funding for quality measures.

DNP essential	Evidence of operationalization
Essential VI – Interprofessional collaboration for improving patient and population health outcomes.	Effective communication skills were used in a collaborative style with the group of interprofessional stakeholders in the evaluation and modification of the discharge communication process.
Essential VII – Clinical prevention and population health for improving the nation's health	The project supports population health on the community level. The process modifications are classified as clinical prevention as they reduce the health risks of individuals, families, and the community.
Essential VIII – Advanced nursing practice.	The project utilizes conceptual and analytical skills to use system thinking to translate evidence in practice. This is done in an interdisciplinary way and brings nursing science to bear on the process evaluation and modification.

Note. Adapted from "The Essentials of DNP of Doctoral Education for Advanced Nursing Practice" by AACN, 2011.

SECTION 4

METHODS

     The purpose of this DNP project was to evaluate and modify, if necessary, a health system's ACS discharge communication process to support patients' safe TOC back to PCS. The project was completed in a healthcare system with both ACS and PCS. This quality improvement project utilized the MI created by the API. This model utilizes three focusing questions followed by PDSA cycles (Moran et al., 2020). As related in the literature, potential improved outcomes of the project included reduced readmissions, better health outcomes, increased attendance at post-discharge follow-up appointments with the PCP, improved reimbursement and increased provider satisfaction (Auerbach et al., 2016; Bischoff et al., 2013; Hansen et al., 2011; Hesselink et al., 2012; Libbon et al., 2019; Moyer & McGillen, 2018; Sheu et al., 2015b).

Setting and Sample

     The setting for the project was a metropolitan community non-profit healthcare system in the western United States. The system includes a 198-bed acute care hospital and 14 outpatient clinics. The ACS and one outpatient PCS were the specific implementation sites of the project. The PCS recorded 2,517 patients over the age of 16 years as of May 1, 2020 (Malarchick, 2020). Seventy

percent of the patients were over the age of 50 years. Provider staff included four nurse practitioners and two physicians. The ACS and the PCS share a common, integrated electronic health record (EHR) (Malarchick, 2020). Stakeholder communication of support for the project is in Appendix A.

The principal stakeholder was a nurse practitioner who worked in the PCS. Other stakeholders included the PCS manager, the network director of outpatient clinics, the ACS discharge planning manager, information technologists from both the PCS and the ACS, the managers of other outpatient clinics, PCPs from the other clinics, PCS ancillary staff, discharge planners, and ACS hospitalists (Malarchick, 2020).

The project facilitator (PF) conducted a strengths-weakness-opportunity-threat analysis (Appendix B) prior to the implementation of the scholarly project. This component was part of a larger needs assessment of the system specific to discharge communications. Stakeholders being in the action change stage was identified as a strength. Identified weaknesses included a discharge communication process that was fragmented and inconsistent. Opportunities consisted of a process change leading to a positive effect on outcomes, performance measures and revenue. The lone threat identified was the complexity of the information system processes.

An Ishikawa cause and effect diagram (Appendix C) was included in the needs assessment to elucidate the facets of the causes contributing to the problem. The categories included materials, stakeholders, processes, and

technology. The causes led to the effect of discharge communications that were inconsistently and unreliably delivered to the PCPs (Malarchick, 2020).

This needs assessment revealed a gap in clinical practice. The process of discharge communication between the ACS and PCS was often unreliable and inconsistent (Malarchick, 2020), and at times, non-existent. A committee of providers and quality improvement staff started work on a quality improvement process to narrow the gap. The DNP project began at the waypoint at which their quality improvement efforts had attained.

Improvements from discharge communication from the ACS to PCS is only successful if the PCP is documented correctly in the EHR. This concern by the stakeholders was mentioned in another study (Harlan et al., 2010). Cursory inspection of records revealed not only PCPs being listed in this capacity, but also emergency department providers, obstetricians, cardiologists, etc. Prior to the implementation of the process, the PF assisted the organization in providing education to registrars on the meaning and importance of the PCP field. Additionally, the PCP field was changed in the EHR to always be blank upon registration to force the registrar to query the patient about their PCP. This was also set as a hard stop within the EHR registration conversation. Additionally, PCPs were given the authority to change the PCP listed in the EHR if they noted it was wrong during a clinic appointment. Finally, if a patient did not have a PCP, they were assigned a code that would alert the organization to follow-up to assist the patient to establish a PCP.

Ethical Considerations

Request was made to the Colorado Mesa University's Institutional Review Board (IRB) for determination of human subject research. It was determined that the project met the criteria as quality improvement. The project was conducted as a quality improvement initiative, and as such, was not formally supervised by the IRB per its policies. The project did not include any patient interaction. The PF was strictly in a role to facilitate the evaluation of the discharge communication process and recommend and coordinate changes in the process if indicated.

Procedures

Focus questions and PDSA cycles of the MI process were used as the framework for the project. Table 4.1 lists the details and timeline of each of the steps in the PDSA cycles. Actions taken prior to the first MI cycle included the certification of training in human subject research by the Collaborative Institutional Training Initiative, the needs assessment including a SWOT and cause and effect analysis which led to the identification of a clinical gap, an extensive integrated literature review on the topic, receipt of IRB approval from the academic institution, education associated with correct identification of PCP by registrars, and a conceptual model for the project framework was identified.

Table 4.1

Proposed PDSA Cycle Progression

PDSA cycle and step	Week	Description
Plan 1	1	Stakeholder meeting. Focusing questions. Identify policies, procedures, and practices. Identify units.
Do 1	2-3	Observe DC process. Follow discharge planners, providers, and nurses. Document in notebook.
Study 1	4	Synthesize findings. Synthesize conditions that affected cycle.
Act 1	4	Update stakeholders on findings and the next PDSA cycle. Complete PSS.
Plan 2	4	Plan for comparison of actual practice findings to evidence-based best practice.
Do 2	5	Compile DDS. Compare procedures, policies, and actual practice to best practices.
Study 2	5	Synthesize identified discrepancies in policies, procedures, and practice to evidence-based practice. Synthesize conditions that affected cycle.
Act 2	5	Meet with stakeholders. Identify action items (anything from DDS with a no) and prioritize action items. Complete PSS.

PDSA cycle and step	Week	Description
Plan 3	6	Determined by the stakeholder priority of action items.
Do 3	7-8	Expectation for a) policy generation/modification, b) procedure generation/modification, and/or c) stakeholder process education.
Study 3	9	Develop blueprint for chosen action item in a-c. Synthesize conditions that affected cycle.
Act 3	10	Begin implementation of priority item and plan for continuation. Complete DDS and PSS form.

Note. DDS = discrepancy data sheet; PDSA = Plan do study act cycle; PSS = process satisfaction survey.

PDSA cycle one involved the stakeholders identifying existing policy and procedures. A determination of the best ACS units to observe were chosen. The PF observed every facet related to the discharge communication process that could be identified. PDSA cycle two compared policy, procedure, and actual observed practices with the evidence based best practices. These observations were recorded on the DDS. This information was reported out to the stakeholders. Determinations of potential opportunities for modification and improvement were made and the stakeholders prioritized these. These priorities informed the work and objectives for PDSA cycle three.

Data Collection and Planned Analysis

At the end of each PDSA cycle, a Process Satisfaction Survey (PSS) was conducted to measure satisfaction with the previous PDSA cycle (see Appendix D). Following PDSA cycles two and three, a Discrepancy Data Sheet (DDS) was completed (see Appendix E). These data evaluated discharge communication policy, procedure, and actual practice and compared it with best practices as abstracted from the evidence. Appendix F displays the Microsoft Excel spreadsheets used for tabulation of data. Data were entered using a double entry method. The data were analyzed for missing, out-of-range, or invalid values. Data were securely stored on an encrypted data storage device which was secured in the PF's office. The field notebook was secured in a locked file cabinet when it was not with the PF. Table 4.2 details the levels of measurement of data collected during the project. Planned analysis for ordinal data included synthesizing responses on the PSS, determining responses, and synthesizing observations from the DDS. Additionally, conditions affecting outcomes tracked during the PDSA cycles were synthesized to compare with conditions cited by Meleis (2020) that influence outcomes.

Table 4.2

Levels of Measurement and Planned Analysis

Datum	Level	Analysis
Process satisfaction survey	Ordinal	Frequency, percentage
Discrepancy data sheet	Ordinal	Frequency, percentage
Conditions	Nominal	Frequency

SECTION 5

RESULTS

The purpose of the project was to evaluate and modify a healthcare

setting's discharge communication process between ACS and PCS. A total of

three PDSA cycles were performed over the period of 10 week. Process

outcomes were evaluated and considered in relation to project findings.

Process Evaluation

In Transitions Theory Afaf Meleis (2020) discussed the fact that conditions

may affect the ability to successfully transition a change. These conditions may

be of a personal, community, society, or global nature. Various conditions

affected the three PDSA cycles included in the ten-week discharge

communication project. Two PDSA cycles were defined prior to project

implementation and one was developed by the group of stakeholders during the

project. The process evaluation of the project comparing the original project plan,

the project progression as it occurred, and the conditioning factors that affected

the cycles are displayed in Table 5.1.

Table 5.1

Project Process Evaluation

Week	Project Plan	Actual Plan Progression	Conditioning Factor
	PDSA 1		
1	Stakeholder meeting. Focusing questions. Identify policies, procedures, and practices. Identify units.	Initial meeting occurred with three stakeholders. Three focusing questions considered. Existing policies and procedures identified. Areas of observation at ACS chosen.	
2-3	Observe DC process. Follow discharge planners, providers, and nurses. Document in notebook.	Followed discharge planners, case management, discharge nurses, and providers. Weekly meetings poorly attended.	

Week	Project Plan	Actual Plan Progression	Conditioning Factor
4	Synthesize findings. Synthesize conditions that affected cycle.	PSS completed. Discharge communication findings synthesized. Conditions synthesized.	Covid-19 pandemic • Disrupted patient flow through ACS and PCS. Competing priorities within ACS and PCS. Difficulties getting stakeholders at the same meeting. Held asynchronous meetings. Resulted in the TT property of disconnectedness. All meetings held online vs. face-to-face.
4	Update stakeholders on findings and the next PDSA cycle. Complete PSS.	Lack of meeting attendance related to conditioning factors necessitated holding asynchronous meetings to better	

Week	Project Plan	Actual Plan Progression	Conditioning Factor
		meet schedules and availability of stakeholders. Sent video communication to stakeholders to keep them updated on the project progression.	
	PDSA 2		
4	Plan for comparison of actual practice findings to evidence-based best practice.	Completed.	
5	Compile DDS. Compare procedures, policies, and actual practice to best practices.	Completed.	
5	Synthesize identified discrepancies in policies, procedures, and	Completed.	

Week	Project Plan	Actual Plan Progression	Conditioning Factor
	practice to evidence-based practice. Synthesize conditions that affected cycle.		
5	Meet with stakeholders. Identify action items (anything from DDS with a no) and prioritize action items. Complete PSS.	EHR vendor announces that new module will provide discharge notification and is 1-2 months from being installed. Stakeholders prioritize PCP accuracy during registration as a top priority.	
	PDSA 3		
6	Determined by the stakeholder priority of action items.	Interim process to improve discharge communication between ACS and PCS by using existing processes and duplicating it in other clinics.	

Week	Project Plan	Actual Plan Progression	Conditioning Factor
7-8	Expectation for a) policy generation/modification, b) procedure generation/modification, and/or c) stakeholder process education.	Training module for customer service representatives and nurse navigators developed.	
9	Develop blueprint for chosen action item in a-c. Synthesize conditions that affected cycle.	Blueprint for interim discharge communication developed for approval from stakeholders.	Electronic Health Record vendor chose to update to a new admission, discharge, transfer notification module after the project completion timeline. • Stakeholders determined it was necessary to hold implementation of discharge communication

Week	Project Plan	Actual Plan Progression	Conditioning Factor
			process until new module was installed and tested.
			ACS and PCS stakeholder timeline did not match project timeline.
			• ACS required more time to be spent on assuring PCP accuracy during registration before implementing discharge communication module.
10	Begin implementation of priority item and plan for continuation. Complete DDS and PSS form.	Interim discharge communication developed and disseminated. Continuity plan for continuing progress towards establishment of electronic discharge	

Week	Project Plan	Actual Plan Progression	Conditioning Factor
		communication between the ACS and PCS developed.	

Note. ACS = acute care setting; DC = discharge communication; DDS = discrepancy data sheet; EHR = electronic health record; PCP = primary care provider; PCS = primary care setting; PDSA = plan, do, study, act; PSS = process satisfaction survey; TT = transition theory.

Project Outcomes

Project outcomes consisted of the results from three process satisfaction surveys (PSS), two discrepancy data sheets (DDS), and identification of conditioning factors. The PSS was completed at the end of each of the three PDSA cycles. The PSS measured the satisfaction of the stakeholders with the preceding PDSA cycle as measured by one item using a 5-point Likert scale (Appendix D). Table 5.2 displays the results of the PSS. Data was tabulated in Microsoft Excel (Microsoft Corporation, Redmond, WA) using a double-entry method. The DDS (Appendix E) demonstrated that the ACS had no policy or procedures in place that described a process for discharge communication between ACS and PCS. One policy on the timeliness of discharge summary creation was found within provider policies. This was viewed as a parallel policy rather than a policy that related directly to discharge communication. Evaluation after PDSA cycle 2 identified that discharge communication between the ACS and PCS was not occurring. Evaluation of the second DDS after the completion of PDSA cycle 3 accounted for the interim process of discharge communication between the ACS and certain, in-network, primary care clinics using a process of telephone communication between the discharge case manager assistants at the ACS and the nurse navigators at four of the ACS affiliated primary care clinics. However, at the end of PDSA 3, the best practices of electronic discharge communication, on the day of discharge, by more than one method was not occurring. Future PDSA cycles were planned to continue to monitor the interim

process developed in PDSA cycle 3 and to implement and evaluate the new EHR

module for discharge communication when available.

Table 5.2

Process Satisfaction Survey (PSS) Results

PSS	Results	Frequency	Relative frequency
PSS 1	5	3	1.0
PSS 2	5	3	1.0
PSS 3	5	3	1.0

Accuracy of the PCP data that was collected during registration

conversations was a priority of the stakeholders. Harlan et al. (2010) had noted

this as a priority within their project. Discharge communication from the ACS to

the PCS can only improve outcomes if it is going to the correct PCS. A plan

parallel to this project was to phase discharge communication into place after

reeducation of registrars throughout the health system on accurate PCP entry

and release of a process to allow case managers at the ACS and providers

throughout the system to easily update the listed PCP at the point of care if it was

found to be inaccurate. This was accomplished during the time frame of the

project and the PF was utilized to develop staff training and assist in auditing to

evaluate the success of the process changes.

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SECTION 6

DISCUSSION

The purpose of this project was to evaluate, and modify if necessary, a

health system's ACS discharge communication process to support patients' safe

TOC back to PCS. There are four evidence-based reasons to have a timely,

electronic discharge communication between an ACS and PCS. Foremost,

patient outcomes are improved (Auerbach et al., 2016; Kim & Flanders, 2013;

Sheu et al., 2015b; Wiest et al., 2019) and patient readmission rates are

decreased (Auerbach et al., 2016) when the PCP manages the patient's TOC

between the ACS and PCS. Patient and provider satisfaction increase with

discharge communication (Sheu et al., 2015b). Medicare reimbursement is

related to discharge communication and TOC between ACS and PCS. New CMS

interoperability rules, scheduled to go into effect in 2021, associates ACS

incentive payments/penalties to the ACS having an electronic ADT process in

place to notify PCS of patient admission, discharge, or transfer (U. S.

Department of Health and Human Services, 2020).

Prior evidence suggested that there are three best practices related to

discharge communication. Discharge communication should be in an electronic

format (Bischoff et al., 2013; Harlan et al., 2010; Libbon et al., 2019), should

include more than one method (Shen et al., 2013), and should occur on the day

of the patient's discharge from the ACS (Bischoff et al., 2013; Destino et al., 2017; Libbon et al., 2019; Tejedor-Sojo et al., 2015). The initial project DDS evaluation identified that there was not a current electronic discharge communication process in place and discharge communication was not occurring on the day of discharge. This was in part attributed to a recent implementation of a new EHR and the inaccuracy of the PCPs within the EHR. The EHR vendor has developed a module that will provide electronic discharge communication on the day of discharge, but it had not been activated by the end of the project time frame.

The project related to what Meleis described as triggering change events. The discharge communication process involved an organizational process change. Table 3.1 predicted how concepts of TT may affect the organization and stakeholders. Conditioning factors affected the change transition. The conditioning factor with the most outsized affect was the delay by the EHR vendor to implement the admission, discharge, and transfer (ADT) module for notification between the ACS and PCS, and specifically, discharge communication. The delay in module delivery resulted in the stakeholder group deciding to delay discharge communication. The third PDSA cycle reflected the use of an existing system within one primary care clinic and replicating it within the three other primary care clinics as a bridge until the ADT module became active. Other conditioning factors experienced during the project included the Covid-19 pandemic and the stakeholder priority that processes be put in place to ensure PCP accuracy within the EHR. These conditioning factors culminated in

delaying the implementation of the electronic discharge communication process. Properties such as time span, process, disconnectedness, awareness, and critical points of transition were all observed by the PF during the project. The process pattern of engagement was challenged by the conditioning factors. However, Meleis' concept of intervention is designed to help move the change transition towards mastery. PDSA cycle 3 was the interim modification that aided in moving towards the successful transition of discharge communiation. The objective of intervention within TT on an organizational level would be to facilitate, initiate, support, and inspire the transition (Meleis, 2020). The stakeholder group involved with the project are change agents that will ensure that the transition will occur and be successful.

PDSA cycle 3, which was developed in conjunction with stakeholders, was meant to be an interim bridge discharge communication process until the ADT module was activated. This process built on an existing process where a case worker assistant at the ACS called the customer service representative at the PCS on the day of discharge for a follow-up appointment for the patient. The process implemented was for this information to be printed out and given to the PCS nurse navigator who would contact the patient to begin the transitional care process. This process met one of the best practices of discharge communication, occurring on the day of discharge.

One limitation (conditioning factor) was the project occurring during the pandemic. In-person meetings became online video conference meetings. The project occurred during a surge of the pandemic leading to competing priorities

within the stakeholder group. To overcome this conditioning factor, the PF held

asynchronous meetings with the stakeholders and sent out electronic updates.

Another limitation is that an electronic discharge communication process was

scheduled to be in place prior to the project starting which could have been

evaluated for effectiveness and compared to best practices. This process

implementation was delayed. This was mitigated by coming up with a process

that will bridge the gap until the ADT module was activated.

This project is transferrable to other clinical settings and populations.

Using TT as an organizing framework and MI as a quality improvement process

tool is useful in evaluating and modifying processes. Interdisciplinary teams can

be organized by nurses to lead process change based on evidence-based best

practices.

A plan for the continuation and sustainability of the implementation of the

discharge communication process was developed with stakeholder involvement.

The PF, as an employee of the organization, will continue to coordinate the

implementation of the process until its completion.

The DNP Scholarly Project met all eight DNP Essentials as detailed in

Table 3.3. Seven Colorado Mesa University DNP goals related to the DNP

Essentials were also met during the administration of the project. Additionally, the

project met the six Colorado Mesa University's DNP program outcomes. The

DNP Essentials, DNP Goals, and DNP program outcomes complement and

support each other in the effort to produce advanced practice nurses who base

their specialized skills in evidence to promote health and improved outcomes for patients, families, and communities.

Summary

The purpose of the project was to evaluate and modify, if necessary, a health system's ACS discharge communication process to support patients' safe TOC back to PCS. Poor discharge communication between ACS and PCS leads to negative patient and health system outcomes (Auerbach et al., 2016; Bell et al., 2009; Sheu et al., 2015b; Wiest et al., 2019). The evidence from the literature review suggested that electronic discharge communication on the day of discharge is the best practice for PCS notification of patient discharge from an ACS.

Within the TT framework, the MI quality improvement process was used to construct three PDSA cycles to execute the project. The project evaluated the existing discharge communication process and modified it with an interim process until a more permanent solution was implemented. A sustainability plan for the completion of the objectives, establishing a timely, electronic discharge notification between the ACS and PCS has been approved. The process is transferrable to other quality improvement projects within health care.

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Appendix A

Stakeholder Support Letter

Shawna Frost, CNP
San Juan Health Partners Internal Medicine
801 W. Maple
Farmington, NM 87401

November 10, 2020

Dear Steven Malarchick,

This letter is in support of your DNP scholarly project that will evaluate and modify, if necessary, our health system's process of discharge notification between the hospital and our PCPs at the clinics. This is urgently needed process improvement. Having a reliable and consistent discharge communication process will help improve care coordination for our patients and may lead to improved outcomes and decreased morbidity and mortality.

I am happy to be the principle stakeholder in this process and for your DNP Scholarly Project. Please keep me updated regularly regarding your progress.
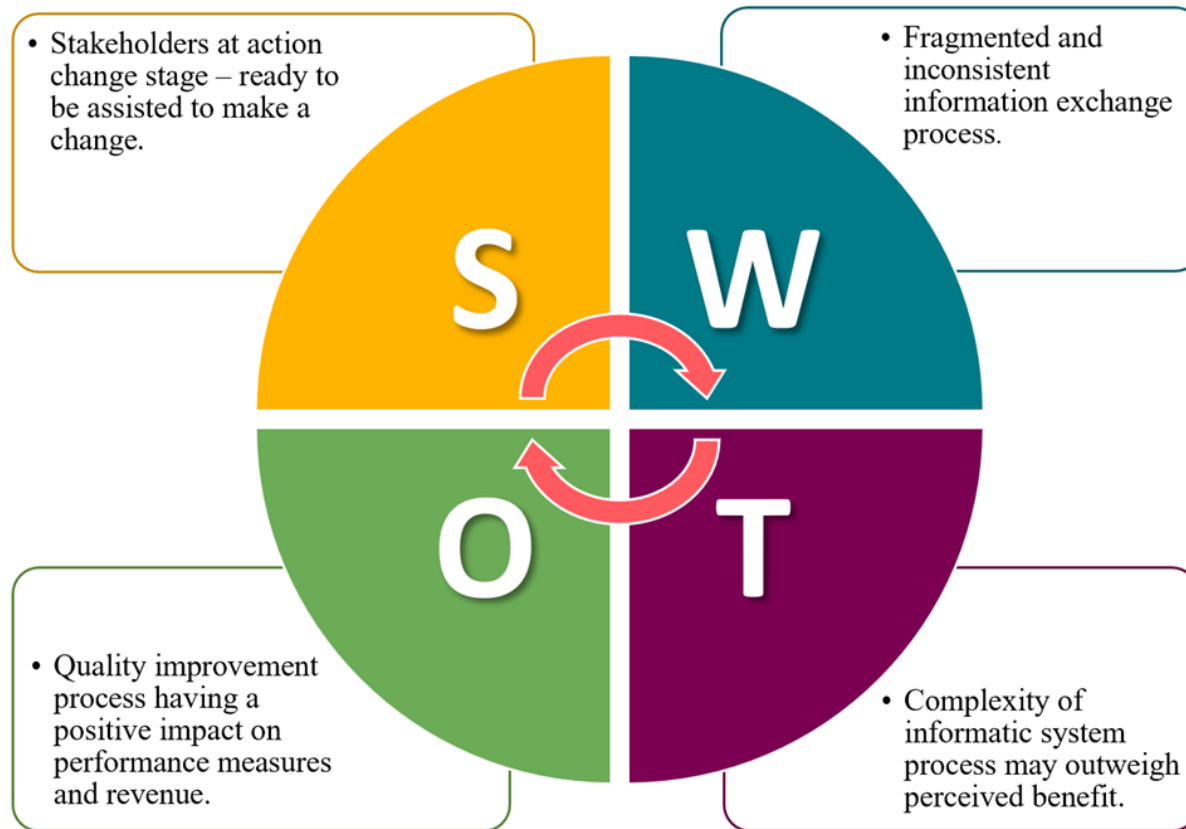
Sincerely,

Shawna Frost, CNP

Appendix B

Strength, Weakness, Opportunity, Threat Analysis

- Stakeholders at action change stage – ready to be assisted to make a change.

- Fragmented and inconsistent information exchange process.

S **W**

O **T**

- Quality improvement process having a positive impact on performance measures and revenue.

- Complexity of informatic system process may outweigh perceived benefit.

Appendix C

Ishikawa Cause and Effect Diagram

Materials
Transfer order
Admission notice
Networks
H & P
Medication Reconcilation
Discharge orders

Process
Admission PCP collection
Discharge orders
Discharge planners
Pt initiated request PCP
Request from PCPs
Admission/Transfer/DC
Urgent care/ED visit

Problem

Inconsistent and unreliable delivery of discharge notices to Primary Care Providers

Compliance Officer
Chronic Disease Nurse
Clinic staff
Health Information Mng
Discharge/case Mng.
Nurses
Cerner IT
Hospitalists
Network PCPs
Private PCPs
Patients
Admissions
Stakeholders

FYI subscriptions
Cerner bots for sending
Electronic Fax
Email
PCP fax machines
Private PCP software
Cerner
Technology

Appendix D

PDSA Cycle End Process Satisfaction Survey

1. How satisfied are you with the results of Plan-Do-Study-Act cycle _____

   recently completed?

Very Poor	Poor	Acceptable	Good	Very Good
1	2	3	4	5

Malarchick DNP SP

PDSA 2 & 3

Discrepancy data sheet (DDS).

Best Practice	Written Policy	Written Procedure	Actual Practice	Comments
Discharge communication in electronic format?	□ Yes □ No	□ Yes □ No	□ Yes □ No	
More than one method of discharge communication?	□ Yes □ No	□ Yes □ No	□ Yes □ No	
Discharge communication on day of discharge?	□ Yes □ No	□ Yes □ No	□ Yes □ No	

Date: _____

Appendix F

Microsoft Excel Data Collection Spreadsheets

Figure F.1
Spreadsheet for PSS Data

Figure F.2
Spreadsheet Used for DDS

	A	B	C	D	E
	G27		f_x		
1					
2			DDS Summary		
3					
4	**Best Practice**	**Written Policy**	**Written Procedure**	**Actual Practice**	**Comments**
5	DC in electronic format?				
6	Mor than one method of DC?				
7	DC communication on DOD?				
8	Yes Total	0	0	0	
9	No Total	0	0	0	
10					
11					
12					
13					
14					
15					
16					
17					
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29					
30					
31					

PDSA 2 SE | PDSA 2 DE | PDSA 3 SE | PDSA 3 DE | PPS SE | PPS DE | ⊕