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Medication Reconciliation: Protecting the Geriatric Population

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Medication Reconciliation: Protecting the Geriatric Population

by

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Date   Date

Abstract

This project was designed to address the issue of medication errors that occur during the transition from an acute care setting to an assisted living setting. Geriatric adults are often supported by a complement of medical specialists and subspecialists. As a result, reconciling medications following a hospital discharge can be challenging. To further complicate the problem, oftentimes, the primary care provider is not highly engaged with the specialists and subspecialists. The World Health Organization (WHO) has prioritized this issue through the introduction of the Medication Without Harm initiative. This initiative is focused on reducing adverse drug reactions (ADRs) and adverse drug events (ADEs) resulting from improper reconciliation during transitions of care. In an effort to reduce the risk of medication-related harm to the geriatric population residing in an assisted living environment, this project presents a standard operating procedure (SOP) with supporting documents and tools designed to identify medication discrepancies resulting from transitions in care. This is supplemented with a specific communication tool for primary care providers to assist in the clarification and reconciliation of transitional medication orders.

Acknowledgments

My scholarly project was not created in a silo. There are several individuals that had a considerable influence on my foundational knowledge and skillfully prepared me for the task at hand. On a large scale, I would like to thank Gardner-Webb University for fostering a learning environment that is incredibly invested in the success of the students. Two members of the university faculty were particularly instrumental. Dr. Kathy Williams, DNP, RN showed me the importance of the nursing theory and the theorists that have helped shape nursing. Dr. Marcia Miller, Ph.D., RN taught me the methodology of research. I would also like to express my deepest gratitude to my project chair, Dr. Candice Rome, DNP, RN, CNE whose clear guidance, patience, and encouragement made this an enjoyable process.

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CHAPTER I

Introduction

The geriatric population, adults ages 65 and older, are often diagnosed with multiple health conditions. These conditions are clinically managed by subspecialists, such as cardiologists, endocrinologists, and nephrologists. Providers utilizing electronic documentation systems are restricted to the system's standard of their respective employer. Currently, not all electronic health systems have interoperable capabilities of communication. This creates a significant medication risk for the geriatric population, as often the subspecialists are not aware of the prescribing practices of a patient's comprehensive health care team. To further complicate the situation, when a geriatric patient changes health care settings, such as transitioning from home to the hospital for an acute stay, or from the hospital to a rehabilitation setting for a therapy stay, the hospital practitioners prescribe a comprehensive medication regimen that may or may not be consistent with the intent of the subspecialists. These transitions subsequently expose the patients to potential medication errors, such as duplication of medications, potential drug interactions, or the discontinuation of critical and necessary medications. As a substantial portion of the geriatric population takes five or more medications, these errors can be life-threatening. The purpose of this project was to evaluate the care transitions experienced by the geriatric population and develop a standardized process for medication reconciliation during these transitions to minimize the risk for adverse drug reactions (ADRs) and adverse drug events (ADEs).

Problem Statement

Overprescribing practices in adults ages 65 and older is a significant problem, "with 40% taking five to nine medications and 18% taking 10 or more" (Fixen, 2019, p. 42). Much of this medication issue is a result of geriatric adults diagnosed with multiple medical conditions managed by a collective group of subspecialist providers (Halli-Tierney et al., 2019). Polypharmacy, frequently identified as the administration of more than four medications, often leads to ADEs or ADRs, which may involve medication administration errors, drug-to-drug interactions, and falls (Fixen, 2019). "One out of every 30 urgent hospital admissions in patients ages 65 and older is related to an ADR" (Barclay et al., 2018, p. 38).

Significance

In 2017, the World Health Organization (WHO) released the estimated cost of medication errors, which was $42 billion annually. This accounted for 0.7% of all health expenditure worldwide (Donaldson et al., 2017). A study revealed a range of unintended discrepancies post-hospital discharge to be as wide as 14% - 93.5% (Alqenae et al., 2020). Given the significance of errors and the financial impacts, WHO introduced the Medication Without Harm initiative, with the objective of reducing the number of severe medication-related harm events by 50% with a specific focus on transitions of care (Donaldson et al., 2017).

Purpose

Medication reconciliation has proven to effectively reduce medication errors (Marinović et al., 2021). The purpose of this MSN project was to explore polypharmacy in the geriatric population. The research will evaluate current practices and develop a

standardized operating procedure (SOP) to improve medication reconciliation as patients

transfer from acute care settings to post-acute care and long-term care settings.

Theoretical/Conceptual Framework

The theoretical framework for this project is Dr. Afaf I. Meleis' Theory of

Transitions. The foundation of Meleis' theory draws attention to events that individuals

experience across the healthcare continuum, as they transition from one setting to another

or experience events that require new medical interventions. Meleis notes that transition

is a "passage from one life phase, condition, or status to another" and "a multiple concept

embracing the elements of process, time span, and perception" (Meleis, 2010, p. 25). The

geriatric population experiences many transitions, and Meleis (2010) indicates transition

is a product of complicated interactions between the person and the environment. While

one is facing a new diagnosis of dementia, and another is being admitted to the hospital,

another may be experiencing a discharge to a post-acute care setting. Due to multiple

people involved in the admission and discharge process, these transitions each present an

opportunity for duplication of medication prescriptions, often leading to polypharmacy,

ADRs, or ADEs; therefore, making this theory appropriate for this research project.

Meleis' Theory of Transitions is defined by four key characteristics: Process,

disconnectedness, perception, and patterns of response (Meleis, 2010). The process

encompasses the event from beginning to end. Disconnectedness occurs when elements

of a person's security are disrupted. When one's security is compromised, there is often a

separation between their comfort with the situation and their comfort with self, resulting

in fear, anxiety, and often insecurity. Disconnectedness also involves "loss of familiar

reference points, incongruity between expectations based on the past and perceptions

dictated by the present, and discrepancy between needs and the availability of, as well as access to, means for their satisfaction" (Meleis, 2010, p. 26). Perceptions summarize the meanings individuals associate with transition events. Situations, environments, and cultures influence a person's perception and therefore affect the outcomes. Awareness underscores the reality that a person experiencing a transition must have a level of awareness that change is occurring. Finally, patterns of response "arise out of the observable and non-observable behaviors during the process of transition that…are not random occurrences" (Meleis, 2010, p. 27).

Meleis' Theory of Transitions is composed of various assumptions. The key assumptions that are important to this research are (a) an individual's responses and outcomes are influenced by those involved in the care of the individual, (b) both preventative and therapeutic interventions can shape the individual's outcome, and (c) an individual's care requires the collaboration of the individual, families, and the health care community (Smith, 2019). Meleis (2010) notes that admission procedures and discharge planning are receiving attention in discussions of transitions. While a transition is not a static event, but a fluid occurrence, the objective is to identify specific moments within the transition that create the greatest risk for the individual. This allows for the deliberate and intentional focus to be placed on mitigating the specific risks (Meleis, 2010). The discharge process is a moment of vulnerability for patients. The medication care plan is a specific point of concern. The engagement of an individual's complete support system provides multiple opportunities for review of discharge instructions for geriatric patients transitioning between health care settings. By thoroughly conducting medication reviews in the transition phase, healthcare providers can mitigate medication complications. This

is measured through evaluation of the discharge process and experience compared to the incidence ADEs and ADRs. These events often result in hospital readmissions, stressful situations for the individual, and financial burdens on the healthcare system.

Beyond the assumptions, there are several components to Meleis' Theory of Transitions: Transition triggers, properties of transition, conditions of change and transitions, and patterns of responses (Smith, 2019). This research will consider transition triggers, which involve situational transitions, and evaluates "experiences and responses to situational changes such as admission to or discharge from a hospital or rehabilitation institution" (Smith, 2019, p. 356). Properties of transition will also be considered in this research project. While an event that triggers a transition may be static, the transition is not. Significant medical events and conditions are often managed through medications and involve ongoing evaluation of compliance. Additionally, patterns of responses will be considered, as one of these process patterns is a follow-up to the health care recommendations (Smith, 2019). This follow-up involves new orders, including medications and additional services such as therapy. Ensuring all medications are reconciled against the admitting medication regimen and with the involvement of subspecialists is important. This may involve layers of communication prior to, during, and following discharge.

For this project, the theoretical variables will focus on medication reconciliation for geriatric patients transitioning between health care settings. Understanding the conceptual components of trigger events that initiate a change in settings and the necessary steps to ensure a safe transition to a sub-acute setting directly affects the

patient's outcomes. The empirical variables for this project are ADEs, ADRs, and hospital readmissions (Figure 1).

Figure 1

Conceptual-Theoretical-Empirical Diagram
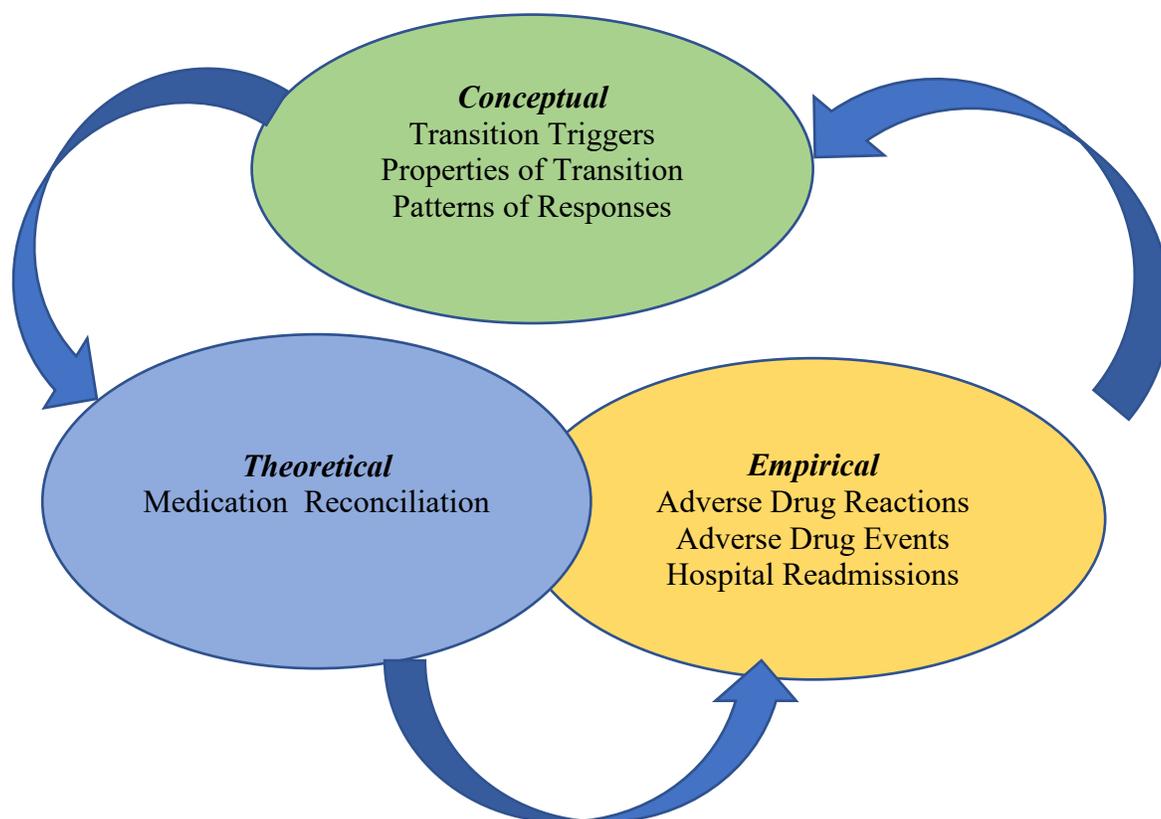
Definition of Terms

To ensure clarity among readers, certain terms referenced in the project development need to be defined. Those terms are adverse drug event, adverse drug reaction, geriatric adults, medication error, medication reconciliation, polypharmacy, and standard operating procedure. Below, each term is defined according to its use in this project.

- Adverse drug event: an injury that results from taking a medication

- Adverse drug reaction: an unintended effect of a medication that is harmful or uncomfortable

- Geriatric adults: adults aged 65 and older

- Medication error: an error in the prescribing, dispensing, or administration of a drug

- Medication reconciliation: the process for ensuring a patients' medication list is free from errors

- Polypharmacy: the administration of five or more medications

- Standard operating procedure: a set of step-by-step instructions to safely and consistently perform a task

Conclusion

Geriatric adults are often diagnosed with multiple medical conditions. The health of these adults is managed by multiple subspecialists, which often results in the prescription of medications. As health care has embraced electronic medical practices, not all electronic health systems have interoperability capabilities. Subsequently, subspecialist providers are not always aware of the complete medication regimen of their patients. This often leads to overprescribing practices and exposes patients to medication errors, adverse drug events, and adverse drug reactions often leading to hospitalization. As the geriatric adults are discharged from the hospital, as many as 93.5% are subject to discrepancies in their prescribed medication regimen (Alqenae et al., 2020). This underscores the importance of proper medication reconciliation practices upon transition from an acute care setting to a post-acute setting. An evidence-based SOP will be developed to address this vulnerability in the discharge process for geriatric adults.

CHAPTER II

Literature Review

Polypharmacy, medication discrepancies, adverse drug reactions (ADR), and adverse drug events (ADE) are threats to the geriatric population. Overprescribing coupled with poor medication reconciliation practices as they navigate the health care continuum, and transition through the various settings have been noted to increase the risk for harm in this population. These patients are often diagnosed with multiple medical conditions and consequently, followed by multiple subspecialists that do not often interface. As a result, a centralized procedure to review the medication regimens for this population is essential. The following literature review demonstrates the magnitude of the problem and the substantial impact of a formalized medication reconciliation process.

Research was conducted utilizing the Cumulative Index for Nursing and Allied Health Literature (CINAHL) and PubMed databases. While researching literature, the following keywords were explored: Meleis' Transitions Theory, medication errors upon admission and discharge, adverse drug events (ADEs), adverse drug reactions (ADRs), World Health Organization (WHO) initiatives, and polypharmacy in the geriatric population.

Literature Identifying and Supporting the Problem

The challenges presented by polypharmacy have been reviewed by many researchers. A study by Chiatti et al., (2012) evaluated the substantial burden of improper prescribing practices, noncompliance to drug regimens, and ADEs in geriatric adults. Chiatti et al. (2012) noted that the geriatric population is one of the largest groups in society, underscoring that this population is challenged with multiple comorbidities,

polypharmacy, varying degrees of cognitive functioning, and various levels of education. All of these variables pose a risk for medication errors and ADEs. The study demonstrated that as many as 40% of the geriatric adults received at least one inappropriate medication prescription, increasing the risk of the need for advanced healthcare services by as much as two times (Chiatti et al., 2012). It further emphasized that inappropriate prescribing practices and preventable ADEs cost the healthcare system approximately $100 billion (Chiatti et al., 2012).

Research has gone on to quantify the impact of polypharmacy on the geriatric population. Gabauer (2020) authored a research article discussing some of the factors that influence the prevalence of polypharmacy. Gabauer (2020) notes that in 2005-2006, 31% of the geriatric population were experiencing polypharmacy, with 8.4% being prescribed medications that posed risk for drug-to-drug interactions. This number increased to 36% experiencing polypharmacy and 15% exposed to drug-to-drug interactions by 2010-2011 (Gabauer, 2020). Gabauer (2020) notes that five or more medications may be justified to manage the multiple comorbidities often seen in the geriatric population, but also emphasizes that the number of medications a patient takes poses the greatest threat to an ADE. The article goes on to identify care coordination among subspecialists and the inherent risk of polypharmacy, ADRs, and ADEs as significant causes of polypharmacy.

The challenges of polypharmacy, as well as the barriers to deprescribing practices, were studied by Halli-Tierney et al. (2019). Halli-Tierney et al. (2019) noted that when a patient receives five or more medications, they are at a higher risk for falls with injury increases, they experience a decrease in their quality of life, non-compliance, and drug-to-drug interactions, and increased dependence on the health care system. Halli-

Tierney et al. (2019) cited multiple factors that lead to polypharmacy; chronic mental health diagnoses, and even residential settings such as long-term care facilities. Halli-Tierney et al. (2019) also underscored the reluctance of patients to have a primary care physician discontinue or change a medication that is prescribed by a subspecialist. Halli-Tierney et al. (2019) noted that polypharmacy is not simply a risk at the patient level, but also in health care systems. Examples provided include poor record maintenance resulting in the oversight of discontinued medications which are then refilled automatically by the pharmacy, or physicians receiving requests for a medication refill when the medication has been discontinued (Halli-Tierney et al., 2019). Halli-Tierney et al. (2019) then discussed mitigation measures and evaluation tools for polypharmacy. A combination of a formalized medication reconciliation process and utilization of industry-accepted tools is recommended (Halli-Tierney et al., 2019). Tools, such as the screening tool for older people's prescriptions (STOPP), the screening tool to alert to the right treatment (START), and the Beers Criteria for Potentially Inappropriate Medication Use in Older Adults are all suggested Halli-Tierney et al. (2019). Given the significance of polypharmacy in the geriatric population, Halli-Tierney et al. (2019) proposed that medication reconciliation should occur at every visit and patient interface, as time allows, to address inappropriate medications, medication duplications, drug-to-drug interactions, and adjustments necessary for various disease states.

Alqenae et al. (2020) completed a systematic review of 54 qualitative studies published between 1990 and 2019 to evaluate the prevalence of harm to patients discharged from a hospital setting as a result of medication errors, discrepancies, drug-to-drug interactions, and ADEs. Alqenae et al. (2020) determined that an aggregated median

of 53% of patients studied experienced medication errors and medication discrepancies post-discharge. While multiple studies have been published to evaluate the effectiveness of interventions such as medication reconciliation, electronic medical record interfacing, and the involvement of community pharmacies in reducing ADRs and ADEs, inconsistent outcomes have been noted (Alqenae et al., 2020).

Research in Search of Solutions

There have been many studies evaluating various approaches to medication reconciliation, including the heavy involvement of pharmacy personnel. One such systematic review and meta-analysis study evaluating the effect of pharmacy-led reconciliation programs demonstrated a reduction in medication discrepancies (Mekonnen et al., 2016). In this study, Mekonnen et al. (2016) analyzed 19 studies that involved 15,525 adult patients experiencing a hospital transition; either an admission, discharge, or an intra-hospital transfer. Mekonnen et al. (2016) noted that greater than 50% of hospital medication errors occurred at either admission or discharge from the hospitals in the studies, and "one-third could have the potential for misadventure and harm". Mekonnen et al. (2016) concluded their meta-analysis by noting that pharmacy-led medication reconciliations at either time of admission or discharge yielded a reduction in medication discrepancies, serving as an effective method to improve the safety of transitions for patients.

In a prospective observational study, conducted over the span of 2 years, Belda-Rustarazo et al. (2015) analyzed risk factors associated with medication reconciliation during care transitions for 814 geriatric patients experiencing polypharmacy. Belda-Rustarazo et al. (2015) identified at least one medication error in 64.5 % of patients upon

hospital admission and 32.4% upon discharge. It is further noted by Belda-Rustarazo et al. (2015) that while the cost of medication reconciliation ranges from $11 - $64 at admission, this pales in comparison to the $2,000 - $4,700 resulting from an ADE. Consistent electronic records shared across internal and external health care platforms would assist in minimizing medication errors during reconciliation (Belda-Rustarazo et al., 2015). Belda-Rustarazo et al. (2015) identified that medication errors increased proportionately with the number of medications a patient was prescribed at admission and discharge. As pharmacists led the reconciliation process, it is noted that their professional involvement is critical to improving patient safety at points of transition (Belda-Rustarazo et al., 2015).

Sakiris et al. (2020) conducted a systematic review of five studies evaluating the prevalence of ADEs and ADRs in a select group of geriatric patients. Sakiris et al. (2020) identified that 58% of ADRs experienced upon admission and throughout the hospital stay are preventable. It is also noted by Sakiris et al. (2020) that as many as 24% of the patients in the studies experienced ADRs, and one study noted ADEs to be 81.5%. Most commonly noted were ADEs and ADRs associated with psychotropic, antihypertensive, and analgesic medications (Sakiris et al., 2020). Sakiris et al. (2020) acknowledged that increased prescribing practices in the hospital setting place patients at a higher risk for an ADE or an ADR. Upon evaluating specific medication reconciliation tools, such as the STOPP and START tools reduced ADRs by 23.9% (Sakiris et al., 2020). In evaluating the five studies, Sakiris et al. (2020) noted that when a pharmacist participated in medication and chart reviews, questionnaires, and patient interviews, in partnership with health professionals also conducting chart reviews and laboratory reviews, a 21%

reduction in ADRs was realized. This was also validated in a meta-analysis conducted by Gray et al. (2017), as they noted that the risk of an ADR was decreased by 35% when a pharmacist-led review was introduced. This is significant, as they also noted that 9% of geriatric hospitalizations are a result of ADRs (Gray et al., 2017).

In 2013, Buckley et al. conducted a study comparing the effectiveness of pharmacist-led medication reconciliation to those conducted by other health care providers. Buckley et al. (2013) found that pharmacy teams identified at least one error in 97% of the patients' orders that were not identified by the other providers. Buckley et al. (2013) concluded that while a formal medication reconciliation is an effective approach to reducing medication errors, the involvement of pharmacy personnel is essential to maximize the outcomes. The results of this study were consistent with a randomized study by Marinović et al. (2021) which also concluded that an integrated approach to medication reconciliation, led by a pharmacist, reduces medication discrepancies as patients experience health care transitions. This study, conducted by Marinović et al. (2021), which was designed to support the World Health Organization (WHO) 'Medication Without Harm' project, identified that more than 50% of all medication errors that occur during health care transfers (admission, discharge, or intrahospital transfers) are a result of a medication discrepancy. More specifically, "a lack of professional coordination of pharmacotherapy information in the health system" (Marinović et al., 2021, p. 1327). The results of the study revealed a decrease of 57.1% ($p<0.001$) in medication discrepancies during hospital discharge (Marinović et al., 2021).

As noted, the WHO recognized this to be a global problem (Marinović et al., 2021). A European study conducted by Barbadillo et al. (2016) highlighted the

importance of pharmacist involvement in medication reconciliation during the admission and discharge process. In their study, Barbadillo et al. (2016) sorted data into three groups: (1) medications taken at home that were not prescribed upon admission or discharge (omission), (2) medications not taken at home that were prescribed upon admission without an indication upon admission or discharge (initiation), and (3) medications prescribed intrahospital stay that were not prescribed upon discharge (discrepancy). In their study, Barbadillo et al. (2016) included a retrospective review of electronic health records for patients admitted and subsequently discharged from the hospital was conducted by pharmacists. The pharmacists noted that 26.5 % of prescriptions upon admission, 22.7% during a hospital stay, and 30.5% at discharge were erroneous (Barbadillo et al., 2016). With the most mistakes occurring upon discharge, Barbadillo et al. (2016) emphasized the critical importance, as these errors are forwarded to the primary care physicians who may or may not recognize the discrepancies. Barbadillo et al. (2016) also suggested a consistent record-keeping platform be adopted to ensure all providers are fully informed.

Understanding the deficits in medication reconciliation is a key step to safeguarding the geriatric population as they experience transitions. Meleis et al. (2000) noted that changes in a person's medical condition may expose that person to increased risk for enhanced illness. Meleis' Transitions Theory frames the approach to evaluating the many risks encountered during transitions across the health care continuum, which include the significant risk of medication errors. Whether being admitted to or discharged from a hospital, receiving a new medical diagnosis involving changing treatment regimens, or moving from a home setting to an assisted living environment, each of these

events initiates a transition process (Meleis, 2018). Health-illness transitions involve individuals experiencing gradual changes in their overall wellness or acute changes in their health (Meleis, 2010). Meleis further notes that during these transitions, it is important to consider the patient in relation to all other individuals involved in the transition, such as a physician, nurse, pharmacist, or others directly involved in the patient's health care network (Meleis, 2010). As the geriatric population moves through these various settings, their network often changes. Disconnectedness is often a result of these significant transitions (Meleis, 2010). As an individual experiences a health care transition, they must adjust to an unfamiliar environment, and often new providers are introduced to the individual's wellness team and previous providers may no longer be involved (Meleis, 2010). Meleis' Transitions Theory has driven acute care settings to evaluate their admission and discharge processes to ensure proper support during these transitions (Meleis, 2010). Meleis' (2018) asserts that the individuals responsible for the ongoing support and care of individuals post-discharge must receive accurate information to ensure proper recovery and self-care management. The Transitions Theory triggers an assessment of key moments during an individual's recovery process and identifies the appropriate actions for each of these moments (Meleis, 2018). This theory serves as a solid foundation for conducting research on medication errors during the transitions experienced by the geriatric population.

Strengths and Limitations of Literature

There have been multiple research studies evaluating the risk of medication errors during hospital admission and discharge. These studies have been evaluated over varied periods of time and across many regions globally. The WHO 'Medication Without Harm'

project prompted an intense review of medication reconciliation during these transitions and the literature strongly reflects the money and energy invested in this project. While the existing literature profoundly supports the effectiveness of structured medication reconciliation processes, utilizing pharmacy personnel, fails in evaluating the transition into a long-term care facility post-hospital discharge. Upon returning to an assisted living community, the geriatric population is again placed at an elevated risk for medication errors, as this triggers a new admission transition. Research must be conducted to identify the prevalence of medication errors and potential processes to mitigate this risk. This research will provide guidance to the safe and healthy return of this population to an assisted living environment prior to hospitalization.

Concluding with a Future Plan for a Present Problem

As medical advances continue, leading to early diagnosis of health conditions, and new interventions are realized, the geriatric population is going to increase over time. Given this forecast, it is paramount that a health care system designed to protect the well-being of these individuals focuses on safe and effective medication regimens. Protecting the integrity of medication management for this population is essential; however, current practices are flawed. Research demonstrates that the problem is real, and this author selected a diverse cross-section of research studies to validate the problem and explore solutions. Further research is needed to more clearly identify a process to remediate medication discrepancies encountered during transitions of care and properly protect the vulnerable geriatric population.

CHAPTER III

Needs Assessment

The World Health Organization (WHO) expressly acknowledged the significance of medication errors that occur during transitions between health care settings. One study revealed unintended discrepancies in patients discharged from the hospital to be as high as 93.7% (Alqenae et al., 2020). As a result, in 2017, the WHO launched the Medication Without Harm initiative, specifically targeting transitions of care, with the goal of reducing adverse drug events by 50% over a 5-year period (Donaldson et al., 2017). As Donaldson et al. (2017) stated, the financial burden imposed on the health care system, identified in 2017 to be $42 billion annually underscores the importance of this issue.

Population and Setting

The geriatric population is at significant risk for adverse drug events (ADEs) and adverse drug reactions (ADRs) because they are subject to multiple comorbidities requiring pharmacological interventions for management. With 40% of adults 65 years old and older taking five to nine medications, and 18% prescribed 10 or more, it is critical that a process is in place to reconcile medications as these geriatric adults transition through the health care continuum (Fixen, 2019). It is further noted that ADRs are a significant cause of hospitalizations for adults ages 65 and older (Barclay et al., 2018). This research project will focus on developing medication reconciliation process for the geriatric population. To best influence nursing practice and ensure positive outcomes for the selected population, the setting will be restricted to an assisted living environment. An assisted living organization with a presence of 215 facilities located across 27 states will serve as the targeted setting.

Sponsors and Stakeholders

In order for this project to be successful, it is critical to identify the multiple sponsors that will be leveraged. These will consist of the Chief Medical Officer, the Senior Vice President of Clinical Operations, the Vice President of Compliance, the Divisional Vice President of Clinical Services (DVPCS), and the Regional Director of Clinical Services (RDCS). The Chief Medical Officer will be leveraged to provide objective guidance as the educational components are presented across the enterprise. The Senior Vice President of Clinical Operations will champion the expectations and serve as a guide and influencer to the nursing staff of the selected communities, and the Vice President of Compliance will guide the communities' consistent execution of the recommended process. The DVPCS and the RDCS will be intimately involved in the training at the community level. All of these roles are critical, as clear expectations and formidable execution will present the most reliable outcomes.

In addition to the sponsors, there are several groups of stakeholders that will be affected by the project. The internal stakeholders will include the nursing staff in the assisted living facilities, the medication aides (MAs), and the residents receiving medication assistance. The nursing staff in the selected facilities will be responsible for performing the formalized medication reconciliation process, the MAs will be responsible for ensuring discontinued medications are removed from the medication carts, properly administering the correct medications as noted on the medication administration record (MAR), and promptly and accurately documenting the administration. Residents are inherently invested in the project, as they are the primary beneficiaries of an accurate and successful medication regimen. The external

stakeholders include residents' primary physician groups, the pharmacy provider, and acute care settings that receive residents following a harmful ADR or ADE. The primary physician groups are pivotal in the success of the project, as the nursing staff will communicate directly with the primary care physician when a resident returns from an acute care setting to the assisted living residence. This communication will serve to clarify any new medications ordered, any discontinuations that have been ordered, and any continuing medications. This interaction will identify and correct duplication of medications, unwanted medication to medication interactions, and prevent ADRs and ADEs. The pharmacy has a personal stake in accurate medication orders prior to delivering the medications to the community, as this will avoid unnecessary waste in medications that have been discontinued. Additionally, the pharmacy will utilize its internal computer program to identify any drug-to-drug interactions, as well as medications that are contraindicated for specific residents based on comorbidities and allergies. The final stakeholders in this project are the acute care settings. Educating the transition teams in the acute care settings will establish clear expectations for residents returning to their respective assisted living communities. Consistent compliance with the communication tools will allow the execution of a standard process of reconciling medications for the residents being discharged to their residence.

As with any project, proper education, delineation of responsibilities, and standardized expectations will be essential to the success of a safe and consistent medication reconciliation process in the selected assisted living communities.

SWOT Analysis

A streamlined process for reconciling medications when an assisted living resident returns from an acute stay will be developed for this project. In order to effectively introduce and evaluate the effectiveness of a process within an organization, it is essential to conduct an analysis of internal strengths, internal weaknesses, external opportunities, and external threats (SWOT analysis) to the process' adoption (Figure 2).

Figure 2

SWOT Analysis

Internal Strengths Experience Technology Provider relationships	Internal Weaknesses Employee turnover Technology Standardization
External Opportunities Multidisciplinary clinical resources Technology Pharmacy involvement	External Threats Multiple providers prescribing medications Technology compatibility Prescriber dissent

Internal Strengths

The greatest internal strengths involve experience, technology, and provider relationships. Within the organization, the clinical teams in each of the communities selected for the project are led by a registered nurse (RN). This level of education, training, and experience will be invaluable while ensuring proper education to the community teams regarding the reconciliation project. All MAs must be certified by the state with demonstrated proficiency in reading physician orders, accepting verbal orders, administering medications, and receiving and validating medications delivered from the

contracted pharmacy. To further strengthen the experience and oversight of the project, both a DVPCS and RDCS support the community RN, and collectively, this team provides ongoing monitoring and oversight of the medication program within the communities.

Technology represents another strength to the communities and the medication reconciliation project. All resident medication orders are entered into an electronic medication administration record (e-MAR) by the contracted pharmacy. Additionally, the program is designed to accommodate bi-directional communication (pharmacy to physician and physician to pharmacy, along with pharmacy to community and community to pharmacy), which provides visibility to all providers involved in the medication program. The program also crosswalks key medication drug classes to ensure residents are not prescribed medications that are contraindicated.

Provider relationships represent the final key strength that will contribute to the success of the project. The communities selected have key primary care provider groups that oversee the health of the residents residing in assisted living environments. This is important to the success of the project, as this will streamline medication clarification and reconciliation for residents returning from an acute care setting. While each resident is subject to subspecialists, the primary care providers are responsible for the comprehensive oversight of their respective residents. With a minimal number of primary care providers, the communities will build a stronger relationship and have an efficient means of clarifying and reconciling medications for residents.

Internal Weaknesses

Understanding the internal weaknesses of the project will support developing proactive interventions to minimize the impacts. Employee turnover represents a significant challenge to the overall health care industry. When this is combined with the challenges of the novel coronavirus pandemic and the isolation requirements for those employees exposed to or contracting the virus, inconsistent MAs administering medications to residents poses a risk to safe, consistent, and efficient practices. When communities experience unexpected MA vacancies, the clinical teams must recruit, orient, train, and ensure state certification. Additionally, acquainting themselves with each resident's interdisciplinary team, including the pharmacy provider, takes time. This process exposes the community to a gap that may negatively impact the project.

While technology is noted as a strength, it also presents a weakness. The technology required for this project is dependent on internet connectivity to support timely communication between systems. The current system lacks the necessary bandwidth to promote efficient electronic transmission of information between the pharmacy, providers, and the communities. An additional weakness is the ability to remain current with the ever-changing technology requirements. As technology advances, updates are required within operating systems. These updates are often essential to ensure adequate paired communication between provider systems.

Standardization poses the final key internal risk to the project. Community teams are trained and efficient in the current medication program. The project will introduce additional steps to the medication program, specifically centered around the medication reconciliation process. As this project is presented to the divisional and regional teams,

and trained at the community level, ensuring consistent message content and delivery is critical. Further, each RN and MA may not currently follow the same process when clarifying physician orders and may not be intimately involved in the reconciliation process. Ensuring a comprehensive plan is provided to each community, with return demonstration and ongoing, timely follow-up will be critical. Additionally, making sure that all providers in the residents' health care teams are consistent in their engagement in the medication reconciliation process is important. A break in a consistent process will compromise the credibility of the project and its outcomes.

External Opportunities

Residents in the AL environment often have multiple comorbidities which are followed by multiple subspecialists. Partnerships with these subspecialists will serve as great resources to further educate the community staff on the importance of medication reconciliation. Additionally, engaging the residents' comprehensive interdisciplinary team comprised of primary care physicians, subspecialists, nurse practitioners, therapists, and pharmacists, will result in a collaboration that will promote the project and mitigate medication errors resulting from acute care transitions. The partnership with a consistent pharmacy provider will further support an effective medication management program during this project.

Technology provides an opportunity to enhance the reconciliation of medications as residents return from acute care settings. Many electronic programs exist which identify drug interactions and reject duplicative orders pending clarification. This presents a stopgap for external providers, including acute care providers prescribing medications for residents. Also, the technology accommodates telehealth visits with

providers. This vehicle allows community staff immediate access to providers to efficiently reconcile medication orders and ensure accuracy.

The third external opportunity, and most important, is the involvement of the contracted pharmacy. The pharmacy serves as the pivotal line of communication between the communities and the prescribing health care providers. All orders must be entered electronically to the pharmacy, at which time the pharmacy verifies the order, requests clarification when necessary, enters the order into the e-MAR, and confirms there are no duplications, drug interactions, or contraindications due to noted diagnoses or drug allergies.

External Threats

Awareness of external threats to the project will protect the integrity of the project. The most notable threat is the presence of multiple providers prescribing medications to individual residents. To further compound this threat, when a resident requires an acute care visit, a new team of providers becomes engaged in evaluating the overall health and prescribing medications to manage the resident's needs. This may or may not be consistent with the plan of care created by the resident's primary care team. Additionally, in the AL environment, residents often leave the community to attend appointments with specialists. While the communities ensure a current medication administration record (MAR) accompanies the residents to their appointments, often these residents have multiple specialists on the same day. While the resident is able to provide a comprehensive list of medications current at the time of leaving the community, a second or third specialist may not be aware of new medications prescribed

by the specialist seen before them. This exposes the residents to potential medication for interactive prescriptions, duplicative prescriptions, or conflicting prescriptions.

Available Resources

A successful execution of this project will require multiple resources. The project will be founded on a Standard Operating Procedure (SOP) developed by the Project Leader. Personnel resources needed for this project include a member from the organization's leadership and development team, a member from the organization's marketing team, and divisional and regional nursing leadership for the specific communities. As there are many noted stakeholders and interdisciplinary practitioners affected by this project, standard educational materials will be required. This will ensure a consistent understanding of the process and the expectations of each member involved. Members of the organization's leadership and development team will be provided the SOP and tasked with developing the training materials. These materials will include printed materials and a training video to be uploaded into the organization's electronic learning system with restricted access to the communities assigned to the project. This electronic training will consist of the expectations of an overview of the project and the details of the SOP. The Vice President of Leadership and Development advised that the development of the training video and competency exam will require 8 hours of the team's time. The average hourly rate for this team is $30.00. The organization's marketing team will be tasked with developing marketing materials for all resident providers and discharge planners at the local hospital settings, outlining the process for medication reconciliation with an emphasis on the importance of resident safety as the underpinning to this expectation. This is projected to require 4 hours of formatting

following receipt of the information and the average hourly rate for this team is $27.00.
The organization has advised that the training time will be absorbed into the existing
budget and will not require any additional funding. Additionally, the community follow-
up will be provided on a consistent basis by the RDCS during routine site visits occurring
no less than monthly.

Desired and Expected Outcomes

In 2019, it was noted that 40% of the geriatric population were prescribed five to
nine medications while 18% were taking 10 or more (Fixen, 2019). In a Global Health
and Aging report, the WHO stated "the number of people aged 65 or older is projected to
grow from 524 million in 2010 to nearly 1.5 billion in 2050" (Garza, 2016, para. 1).
When viewing both statistics simultaneously, the presence of polypharmacy in the
geriatric population is and will continue to be significant. The AL environment is often
the residence of choice for this population, as they are supported by a staff to assist with
medication management. For this population to be safeguarded against harm, it is
necessary that ALs have strategic systems in place to reduce the risk of ADRs and ADEs.
The purpose of this project was to standardize medication reconciliation for assisted
living residents returning from an acute care setting. The education, tools, and system for
follow-up are expected to create consistency, with the ultimate goal of reducing the harm
resulting from medication errors. Proper medication reconciliation and clarification have
demonstrated a successful reduction in medication discrepancies by as much as 57%
(Marinović et al., 2021).

Team Members

Once the SOP, training materials, and educational/marketing materials are completed, the project will require the engagement of team members externally and within the selected. External team members required for successful project execution are the DVPCS and the RDCS. These team members will ensure the proper training is completed and the SOP is followed consistently through community visits. These visits will include medication audits, medication reconciliation observations, and medication pass observations. Additional external partners that have a personal stake include the pharmacy personnel and the multidisciplinary care teams for the residents. Community team members that will be involved in the project will include the Executive Director (ED), the RN, and the MAs. All community team members involved in the project will complete the required training. They will also complete a baseline knowledge evaluation at the beginning of the project and will complete the same evaluation at the conclusion of the project.

Cost/Benefit Analysis

Evaluating both the costs associated with a project and the benefits resulting from the project are important steps in determining the value of completing the project. Standardizing the medication reconciliation process for AL residents returning to the AL community from an acute care setting is designed to minimize the risk for medication errors, ADEs, and ADRs. While the benefits may be difficult to quantify, it is expected that there will be a reduction in the number of medications prescribed to the residents in the communities. This will have a positive monetary impact on the health system. Additionally, the reduction of ADEs and ADRs resulting in hospital visits will have a

positive financial effect on the health care system. The WHO published the estimated

cost of medication errors to be $42 billion annually (Donaldson et al., 2017). This

financial burden resulting from errors is significant. While the sample size of the project

does not lend to an estimated financial benefit to the global health system, if successful,

the project will lend to practice changes that may have incremental financial benefits for

the organization. Beyond the financial benefits, the intangible benefits such as reduction

in falls, improved quality of life, and potentially the length of life are all immeasurable

yet incredibly important to the AL population. The initial costs associated with the

project are captured in the table below with the total cost equaling $473.00 (Table 1).

Table 1

Budget

Item	Units	Cost Per Unit	Total Cost
Labor (development of training)	8 hours	$30 / Hour	$ 240.00
Labor (development of marketing materials and employee survey)	4 hours	$27 / Hour	$ 108.00
Marketing materials	500 Copies	$25 / 100	$ 125.00
Total			$ 473.00

Conclusion

The WHO is charged with evaluating health practices, needs, and opportunities.

Once this evaluation is complete, the WHO recommends initiatives and strategies to

improve health outcomes across the globe. One such initiative is the Medication Without

Harm initiative, which was introduced in 2017. This recommendation was a result of multiple studies and root-cause analysis research, which identified significant risk factors when patients transitioned into and out of acute care settings. More specifically, the risks were identified with medication management during these transitions. This project, which is the development and implementation of an SOP, is strategically focused on the geriatric population residing in an AL setting. As geriatric adults navigate the health care continuum between acute care settings and AL settings, the prescribing practices of multiple healthcare providers pose a significant risk for medication discrepancies and medication errors. There are multiple individuals with a personal stake in the project: senior leaders, clinical leaders, primary care providers, and subspecialists, as well as the geriatric adults residing in the AL setting. Garnering the engagement of all of these professionals is pivotal to the success of the project.

Beyond engaging the stakeholders, a firm situational awareness of the project's internal strengths and weaknesses, and external opportunities threats to the project will ensure strategic approaches are adopted to maximize the success of the project. The SWOT analysis is crucial in understanding the available personnel and developing the necessary materials to implement the project. By understanding these components, a cost-benefit analysis indicates minimal costs to the organization, offset by the potential for substantial benefits. These benefits are measured by a reduction in ADEs and ADRs, fewer hospital readmissions, and improved length of stay. While all of these benefits will impact the health care system as a whole, more importantly, they will improve the quality of life for geriatric adults by minimizing the risk of harm and optimizing their quality of life.

CHAPTER IV

Project Design

Geriatric adults are vulnerable as they transition between health care settings. These transitions are often complicated by changes in the medication regimen. Physicians in the hospital setting, managing acute medical conditions, prescribe medications to address the admitting diagnosis. Upon discharge, patients return to their community setting and their ongoing health care oversight is completed by a primary care physician and specialized practitioners such as cardiologists, endocrinologists, orthopedists, and neurologists. Ensuring a patient's comprehensive health care team is informed and in agreement with the care plan, including medications, is critical. The complexities of multiple prescribing practitioners have created significant challenges for patients transitioning from acute care to an assisted living (AL) setting. Caleres et al. (2019) reviewed the discharge summaries for more than 900 geriatric patients with five or more medications prescribed upon discharge. This study revealed a prevalence of discrepancies in 38% of the patients upon discharge (Caleres et al., 2019). Given the frequency of medication errors upon discharge from an acute care setting, a standard and consistent approach to reconciling medications for the geriatric population is paramount.

Goal

This project was designed to identify medication discrepancies for patients discharged from a hospital setting to an AL setting and reconcile these orders to minimize the risk of harm. Through the development of a standard operating procedure (SOP), the goal of this project was to create a standard for systematically reconciling discharge medication orders, clarifying discrepancies with the primary care physicians, and

ensuring that any other practitioners are involved in the care of the AL patients are fully informed. Standardizing the medication reconciliation is an approach to reducing the number of adverse drug reactions (ADRs) and adverse drug events (ADEs), and hospital readmissions while increasing the residents' length of stay in the AL and maximizing their quality of life.

Objectives

Medication discrepancies as a result of a transition from an acute care setting to an AL setting pose significant risks to the patients during this period of transition. There are multiple goals noted which will be addressed with one strategic objective: Standardizing the medication reconciliation process for the respective residents. The effectiveness of the standard process will be measured by three key metrics. First, is the number of medication discrepancies identified during the reconciliation process. The second is the incidence of ADRs and ADEs that are observed following the introduction of the process. And finally, the effect was noted on the length of stay for residents that have transitioned from acute care settings. Through the development of a standard process, proper education of direct care staff on the medication reconciliation tool, and timely collaboration with the interdisciplinary care teams for identified residents, recognizing, and clarifying medication discrepancies upon return to the AL setting is a realistic and attainable objective. While the process has been developed, the creation of training materials and a competency exam will require 8 hours. Once the materials are developed, the education of the direct care staff will require 1 hour of employee time, which can involve multiple employees during the training session. Additionally, education of the interdisciplinary team, which will occur in an electronic communication

will require minimal time and will be supplemented with marketing materials. The creation of the marketing materials is expected to require 4 hours. Following initiation, the key element to ensuring consistent compliance will be a medication audit conducted by the Regional Director of Clinical Services (RDCS), during quarterly visits, to residents that have experienced acute care transitions.

Plan and Material Development

Research has identified the significant risk to the geriatric population as they transition from an acute care setting to an AL setting. Medications pose one of the highest risks to these individuals. Chhabra et al. (2012) noted that medication errors account for as much as 56% of ADEs that occur during transitions from one care setting to the next. Evidence further reveals that as much as 20% of hospital readmissions are a result of ADRs and 13% result from ADEs (Alqenae et al., 2020). Globally, approximately $42 billion are spent on medication errors, and in 2007, it was noted that $3.5 billion was spent in the United States (Donaldson et al., 2017). These statistics highlight the importance of reconciling medications during transitions from the hospital setting to the AL setting.

In an effort to influence the risk for ADRs and ADEs during transitions from an acute care setting to an AL setting, it is important to have a standard approach to evaluating discharge summaries and clarifying medication orders. As a product of this project, a standardized tool to be used by identified AL communities has been developed and can be found in Appendix A. The tool provides a station to document the resident's medications at the time of discharge to the acute care setting and at the time of discharge from the acute care setting in return to the AL. Through documenting both sets of

medication orders, the team will visually recognize new orders, duplications, and discrepancies. This information will be shared with the resident's primary care provider for review and clarification. A standard tool for communication will be used when communicating with the provider (Appendix B). An SOP has been developed to ensure consistent utilization of the tools and to minimize the risk of oversight during the medication reconciliation process (Appendix C).

While introducing a standard process and tools to ensure consistent execution, the most critical component to promote behavior change amongst the direct care staff is training. The established training will be conducted in person and will be uploaded into the electronic learning system (ELS) by the training and development team of the identified organization. Employee competency will be captured in an evaluation. From the initiation of the project implementation, the following timeline has been developed. The initial time allotted for the development of the training materials, uploading the materials, and conducting the training with the direct care staff in the selected communities is 30 days. The next step is the implementation of the process. Since the RDCSs conduct routine quarterly visits, at the 90-day mark, and quarterly thereafter, the RDCS will conduct an audit of medication reconciliation for all residents that experienced an acute care stay during the prior 90 days (Figure 3). This process will evaluate ongoing compliance with the SOP.

Figure 3

Timeline

Days 1-30
Development of Training and Initial Staff Training

Days 30 -120
Implementation of Medication Reconciliation Process, Community Compliance Audit Completed on Day 120

Days 120 -210
Ongoing Implementation of Medication Reconciliation, Community Compliance Completed on Day 220 and Every 90 Days Thereafter
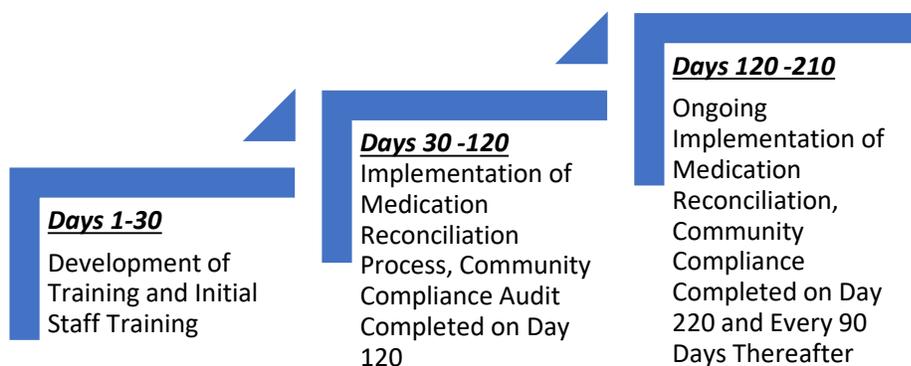
Budget

There are specific costs necessary to successfully implement the project. These costs are specific to the development of training and marketing materials, followed by the printing costs of the marketing materials. The organization utilizes an ELS to conduct, track, and evaluate employee training. Each training is followed by an online competency evaluation. The development of the online learning materials, which includes the competency evaluation, and the electronic uploading is expected to require 8 hours of labor. This will be completed by a member of the learning and development team, which has an average hourly rate of $30. The cost totaled $240.00. The complement of marketing materials supporting the education and the medication reconciliation tools will require 4 hours of labor to complete the formatting and proper branding, including the organization logo. The marketing team's average hourly rate is $27, which equates to a total cost of $108. Following the development of the tools, an initial printing of 500 copies to be divided amongst the selected communities will cost $125. The summation is a total of $473 (Table 1). This does not incorporate the costs of community labor, as the

education will be built into the standard training, and the labor for the RDCS to conduct the ongoing compliance audits will be absorbed in the budgeted labor for quarterly visits, which are an existing organization expectation.

Evaluation Plan

As ADEs and ADRs have been cited as significant risks to the geriatric population as they experience care transitions, it is of utmost importance that a multi-faceted approach to evaluating the medication reconciliation tool is identified. The initial evaluation presents at the completion of the electronic training. Following the training, a competency exam will be completed to ensure a proper understanding of the medication reconciliation process, the utilization of the formal medication reconciliation tool and proper physician communication to clarify any identified discrepancies. Once an employee demonstrates proficiency in the process, ongoing evaluations will be conducted by the RDCS. As RDCSs are required to complete quarterly site visits to evaluate compliance with all care practices, compliance with the medication reconciliation process will be incorporated into the existing site visit tool. This will involve a thorough review of all residents that have experienced a hospital stay and subsequent return to the AL community. The RDCS will review the active medication regimen prior to hospital admission, the hospital discharge summaries, and the communication provided to the primary care physician. This review will evaluate the effectiveness of the medication reconciliation SOP in identifying and resolving medication discrepancies resulting from the care transitions. In addition to the evaluation of compliance, ADEs and ADRs resulting in hospitalizations for the prior year will be compared to the same period of the

current year during which the communities are utilizing the SOP. This will offer some quantifiable data to evaluate the effectiveness of the process.

Conclusion

The success of a project was dependent on its foundation. This requires specific, measurable, attainable, realistic, and timebound (SMART) goals combined with clear objectives, standard materials for education and execution, and a consistent follow-up plan. This project is specifically designed to address the complications of medication discrepancies resulting from transitions from an acute care setting to an AL setting. The materials developed will cross-reference medication regimens prior to an acute care stay as compared to the discharge medication orders upon return to the AL environment. The standard approach will guide the clinical teams as they identify discrepancies and subsequently seek clarification prior to the implementation of the new orders. Training on this approach will evaluate the competency and a follow-up process is established to ensure consistent medication reconciliation practices. A further measure to monitor compliance is seen in the quarterly monitoring to be conducted by the RDCS, at which time any residents that have experienced an acute stay in the prior 90 days will be reviewed. This review will involve a thorough evaluation of the medication reconciliation process upon return to the AL community. Additionally, the effectiveness of the standard approach will be assessed by measuring the number of ADRs, ADEs, and hospital readmissions for residents that have returned from an acute care stay. A final measure of the overall impact on the organization will be seen through the impact on the length of stay in the AL environment for those residents that have experienced acute events requiring hospital visits.

CHAPTER V

Dissemination

This master's project was designed to address the problem of medication errors

that occur when geriatric adults transition from an acute care setting to an assisted living

(AL) setting. Members of an interdisciplinary team within an acute care setting manage

the health care oversight of these patients during their hospital stay. As they return to the

AL environment, their primary care team, comprised of a primary care provider and a

team of subspecialists, resume the responsibility of managing the care for these patients.

Recognizing the challenges of reconciling the medication orders at the time of acute care

discharge with the medication regimen directed by the team of providers in the AL

setting, this project presents a standardized operating procedure (SOP) designed to

identify and clarify medication discrepancies efficiently and accurately. This will assist

the care teams in managing the medications for this population, with the ultimate goal

being the reduction of adverse drug reactions (ADRs) and adverse drug events (ADEs)

resulting in hospital readmissions.

Dissemination Activity

The engagement of stakeholders is a fundamental step in successful execution. To

ensure clear understanding, strategic collaboration, and partnership, combined with

organizational buy-in, a presentation has been shared with the Chief Medical Officer

(CMO) of the organization selected to engage the SOP. Additionally, a standardized tool

designed to identify medication discrepancies (Appendix A), a standardized

communication tool for medication clarification (Appendix B), and an SOP outlining the

complete process (Appendix C) have been developed and shared. The tools, SOP, and

problem outline were presented in the form of a PowerPoint. In the following presentation to the CMO and prior to future implementation, recommendations to improve the project work plan will be incorporated, as this will ensure a mutual commitment to implementation.

Limitations

Instituting a new process that involves additional tools is not always an easy task. Within the organization that has been selected, there is a limited electronic health record (EHR). The medication management system is a subset of the EHR and is also bound by restricted bi-directional communication with the contracted pharmacy. These limitations minimize the flexibility to use electronic reconciliation and dictate an antiquated paper process. This interferes with the speed of communication between the care team, the physician provider groups, and the pharmacy. Reliance on a fax transmission or a scanned document delivered over a secured network introduces an element of time that may delay the clarification process. As many medications are time-sensitive, a delay may pose a risk to the patient.

Beyond technology, the stability of personnel introduces a limitation. The health care industry has long struggled with consistent staffing across all platforms. The AL environment does not require that an individual be a licensed nurse in order to administer medications. While most states have formalized medication trainings to ensure baseline competency of staff responsible for administering medications, the clinical acumen of these employees is often limited. This limited knowledge, coupled with significant turnover in the AL environment, poses a challenge for ensuring ongoing compliance with the process. Although these employees are not licensed nurses, licensed nurses supervise

them. These nurses are required to conduct consistent, routine, and reinforced education amongst the care team.

Implications for Nursing

In the AL environment of the organization that is selected for this project, nurses are responsible for oversight of the medication management program. A standard approach to reconciling medications upon a patient's return from an acute care stay will reduce the risk of medication errors resulting from medication omissions, medication duplications, and medication interactions. This will minimize the amount of time necessary to clarify orders identified over time, as they will be completed in one communication, utilizing one consistent tool. Additionally, this will reduce the time nurses spend addressing ADRs and/or ADEs and minimize rehospitalizations as a result of such events. While the patient's care is a priority, the administrative tasks involved with managing these events are extremely cumbersome. Lessening the frequency of such events will decrease the number of times nurses participate in the associated documentation and communication. This time will now be available for employee education and patient oversight, resulting in improved quality of care. An additionally anticipated implication for nursing is the impact this process will have on employee engagement. The ability to improve the quality of care and the quality of life for the AL population will certainly increase job satisfaction for all involved in the process.

Recommendations

Practice change cannot occur in a silo. In an effort to ensure the proposed SOP and tools represent a specific, measurable, attainable, realistic, and timely (SMART) approach to introducing the project, the CMO of the pilot organization was educated on

the project. This involved a PowerPoint presentation that was complemented with a practice exercise demonstrating the use of the tools and the expected follow-up communication with the primary care provider and extended interdisciplinary team. During the interactive presentation, the CMO, while incredibly supportive of the proposal and the underlying issue being addressed, emphasized the importance of ensuring the community clinical teams do not only utilize this process for those individuals that have been admitted to the hospital for an inpatient stay, but also those individuals that return to the communities following an emergency department visit not requiring inpatient admission. This is suggested, as there are many scenarios in which residents are seen for incidents such as an interventional evaluation following an unwitnessed fall. Often these evaluations result in the prescription of medications to address underlying causes of the fall, or pain management following the fall. An evaluation of the medications is extremely important to ensure there are no medication duplications or drug-to-drug interactions related to the resident's existing medication regimen. This recommendation is valuable and has been incorporated into the training process for the community team members. While the SOP, medication reconciliation form, and physician communication form do not require modification, the education will incorporate a clear definition for the return from an acute care setting. This will include a return from an emergency department that does not result in an acute care admission.

Conclusion

The development of a project design is fundamental to the success of the project. Equally important is a strategic and methodic roll-out plan. The selection of an appropriate environment is a key component of implementation. A key limitation noted

in the selected communities is the limited capabilities of the organization's electronic health record. This has been a strong consideration in the development of the SOP. To offset the limitations, the SOP incorporates a strong manual process with very prescriptive communication between providers.

In addition to accounting for the limitations, engaging the key stakeholders is vital to the project's success. This engagement supports a culture of commitment and buy-in. This also lends to successful outcomes, enhancing the safety and quality of life for those residing in the AL environment. While there are multiple sponsors, including the Senior Vice President of Clinical Operations, the Vice President of Compliance, the Divisional Vice President of Clinical Services (DVPCS), and the Regional Director of Clinical Services (RDCS), the CMO is the lead sponsor. Following the CMO's education on the SOP, the CMO was asked to provide feedback. This feedback, while extremely favorable, resulted in one recommendation of increased emphasis on what constitutes an acute care transition. While this recommendation does not change the process, nor the tools utilized, it has been incorporated into the training for clinical team education.

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Appendix A

Medication Reconciliation Form

Resident Name: _____

LIST ALL MEDICATIONS THE RESIDENT IS PRESCRIBED (Previous medication administration record (MAR) or admitting orders, and hospital discharge (DC) summary. Include dose, frequency, route, and PRN medications)					Date and time of last dose (if avail.)	Data Source*	Do All medication records match? Y = Yes N = No		If "No," which element requires review?				Outcome of review discrepancy (orders written on Physician's Order form)			Is there an indication in dc summary to support med ordered?		If "No" seek info from physician & document diagnosis or rationale on order sheet
Medication Name	Dose	Freq.	Route	✓ If PRN			DC Summary	Previous MAR	Medication	Dose	Frequency	Route	Continue Order	Discontinue Order	Modify Order	Yes	No	

* Data Source: Use one of the following numbers to specify the source of information for each medication

1 – Prescription from: _____ (pharmacy)
2 – Prescription from: _____ (pharmacy)
3 – Contact w/ Physician _____ (name) _____ (phone)
4 – Contact w/ Physician _____ (name) _____ (phone)

5 – Documentation from outside facility (e.g., hospital, etc.)
6– Resident/family member statement
7– Other: _____
8– Other: _____

Appendix B

Physician Communication

Medication Reconciliation

Date: _____

To: _____

Phone: _____

Fax #: _____

Resident Name: _____

Reason for Physician Contact:

Dear Provider,

Your patient, Mr./Ms. _____ returned from the hospital to our

community on __/__/____. We have compared the list of medications at time of transfer

FROM our community to the hospital with the list of medications noted in the discharge

summary at time of hospital discharge (for return to our community).

The following medications require your clarification:

Physician's Instructions:

Medication	Dose	Frequency	Route	PRN (Y/N)	Continue or discontinue

_____   _____

Physician Signature   Date

Please return this communication to:

Name: _____

Fax No.: _____

Appendix C

Standard Operating Procedure– Medication Reconciliation

Standard Date: ___/___/_____

Standard

Medication orders will be reconciled upon every resident return to the community following an acute care stay.

Procedure

1. All medication orders will be verified by the physician every six months. The Verification of Medication Orders form may be used.
2. The facility shall assure that all current orders for medications or treatments, including standing orders and orders for self-administration are reviewed and signed by the resident's physician or prescribing practitioner.
3. If a resident has been hospitalized, the facility shall have a completed transfer form or discharge summary with signed prescribing practitioner orders upon the resident's return to the facility from the hospital.
4. When a resident is readmitted to the Assisted Living Community, such as after hospitalization, all orders will be reconciled. The nurse will utilize the Medication Reconciliation Form (MRF). The following process must be followed:
   a) The resident's name must be listed on the form.
   b) Medications that were active orders on the day the resident was discharged to the acute care setting must be listed on the MRF, to include medication name, dose, frequency, route, and noted if specifically prescribed as prn.
   c) Medications that are contained on the discharge summary from the acute care setting THAT ARE NOT ON THE ACTIVE LIST OF MEDICATIONS ALREADY DOCUMENTED ON THE MRF must then be listed, containing the same information.
   d) The nurse must document the date of the last dose administered.
   e) The nurse must then document the source of information for each medication order, using the codes identified on the MRF.
   f) The nurse must document if the medication is listed on the discharge summary, signified by Y (yes) or N (no).
   g) The nurse must document if the medication was on the resident's medication administration prior to transfer TO the hospital, signified by Y or N.
   h) If any medication receives a "No" response on the form, the area requiring clarification must be documented on the MRF.
   i) Any "No" response must be clarified by the resident's primary care provider, using the Physician Communication Medication Reconciliation form.
   j) Once clarification is received, the pharmacy must be notified, and the resident's medication administration record must be updated with the clarified orders.