REDUCING SUICIDE RISK POST-DISCHARGE FROM AN INPATIENT UNIT:

A QUALITY IMPROVEMENT PROJECT

by

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DEDICATION

This project is dedicated to all those who found this world unbearable and took their own lives; to the family and friends left behind to grieve and ask why; to the mental health care providers saddened and questioning what they could have done differently; and lastly, to those still walking through this world in incredible pain, considering ending it. You are seen and loved.

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ABSTRACT

Background: Individuals with suicidal ideation and mental health crises are often stabilized on an inpatient psychiatric unit. Unfortunately, the risk of suicide is 100-200 times higher in the post-discharge period (Chung et al., 2017; 2019). Lethal means restriction (LMR) can reduce suicide risk and involves limiting access to lethal means. Social supports of patients discharged from inpatient care are instrumental in LMR, but they can experience a mental health crisis from caregiving.

Local Problem: Several states in the Northwestern U.S. consistently have suicide rates above the national average, with Wyoming, and Montana in the top five states for highest suicides rates (CDC, 2023).

Methods: The site for this quality improvement project was an inpatient psychiatric unit in an urban location in the Northwest that accepts adult patients with all spectrums of mental illness.

Interventions: An interdisciplinary discharge process change was implemented to ensure distribution of a printed suicide prevention discharge packet (SPDP) to patients. Free gun locks and medication disposal bags were provided whenever desired. The packet provides information on LMR, warning signs of suicide, locations for medication disposal, and supportive community resources.

Results: At the end of week five of the project, 100% of patients received the packet and gun locks or medication disposal bags whenever desired.

Conclusion: A SPDP coupled with free gun locks and medication disposal bags is an effective way of ensuring caregivers of patients discharged from inpatient care receive access to supportive resources, LMR education, and have the resources to reduce access to lethal means.

Key Words: Suicide prevention, lethal means restriction, caregiver stress, quality improvement

CHAPTER ONE

REVIEW OF THE LITERATURE

Introduction

Suicide is a concerning global phenomenon with an estimated 703,000 people a year dying by suicide (WHO, 2023) making suicide among the top 20 causes of death worldwide (Chung et al., 2017). In the United States, 48,183 people died by suicide in 2021, an estimated 12.3 million adults seriously considered suicide, 3.5 million adults planned suicide, and 1.7 million adults attempted suicide (CDC, 2023). From 1999-2020, approximately 840,000 people in the United States died by suicide and overall suicide rates are 30% higher than they were in 2000 (Ehlman et al., 2022). Several states in the Northwestern United States (U.S) are routinely over the national suicide average, and Wyoming and Montana are routinely in the top five states for suicide rates (CDC, 2023)

Hospitalization on an inpatient psychiatric unit is often required for stabilization of acute mental health crises and suicidality. However, the period after discharge represents the highest risk for suicide even if the individual was not admitted for suicidal ideation. In patients admitted for a mental health crisis without suicidal ideation, the risk of suicide is 100 times greater than the global average in the first three months post-discharge; in patients admitted for suicidal ideation the rate is 200 times greater (Chung et al., 2017). The first week after discharge is particularly risky and represents a six-fold increased risk of suicide as compared to long-term risks after discharge (Chung et al., 2019). These alarming results suggest recent discharge from the inpatient setting is the greatest risk factor for suicide and risk remains elevated long after

discharge; in the 3-12 months post-discharge the risk is 60 times higher than the global suicide rate and even 5-10 years later the risk is 30 times greater (Chung et al., 2019). Strategies aimed at reducing the risk of suicide after discharge and ongoing supportive care are crucial for preventing suicide.

Lethal means restriction (LMR) involves limiting access to common means of suicide and can involve both population level interventions and those aimed at managing an individual's risk (Bojanic et al., 2022). While some suicidal individuals will find other means to commit suicide, many do not, or the alternate means chosen is less lethal (Yip et al., 2012). Suicide is the result of complex factors, but the urge is often impulsive, and when lethal means are not readily available the risk is reduced (Bojanic et al., 2022). Choice of suicide method is a function of what is available in the immediate environment and population level methods focused on LMR have been successful in reducing risks. For example, reduction in the size of available paracetamol (acetaminophen) packages in Britain resulted in a reduction of suicides by that method (Bojanic et al., 2022). LMR education at the individual level is also crucial in preventing suicide and should be provided by healthcare providers when a suicide risk has been identified and at subsequent follow-up visits (Hunter et al., 2021).

The three most common methods of suicide in the United States in order of frequency are firearms (55% of men, 30% of women), hanging or suffocation (28% of men, 29% of women), and overdose (9% of men and 32% of women) (Choi et al., 2022). In the U.S. approximately a third of households have guns; of those, approximately 50% use safe storage practices such as a gun safe or lock (Crifasi et al, 2016). These figures are concerning given that 90% of firearm suicide attempts are lethal (Anestis et al., 2021).

For means restriction to be effective, education about this approach needs to be communicated to both the individual at risk, as well as families and friends (Hunter et al., 2021). Moreover, involving family and friends in suicide prevention is another key element of risk reduction, as social support is associated with a lower risk of suicide (Kleiman & Liu, 2013). Caregivers of suicidal individuals often experience distress and require supportive resources (Lavers et al., 2022). The National Action Alliance for Suicide Prevention (2019) publishes guidelines on reducing suicide risk in the post-discharge period; these guidelines stress the importance of involving family and friends in patient care and providing them with education about suicide prevention and access to community resources.

Advanced Practice Registered Nurses (APRNs) are among the providers patients interact with in the inpatient setting and they often are involved in LMR counseling. On discharge from inpatient psychiatric care, bedside nurses reinforce teaching provided by the APRN and on discharge provide patients with any supportive materials needed. Nursing staff also provides teaching to family members and friends and are well positioned to provide educational materials that reinforce LMR counseling, along with information about community resources. Both the bedside and APRN nursing roles align them for an intervention targeted at assisting family and friends with effective LMR interventions and suicide prevention resources. The purpose of this paper was to examine available literature related to LMR, social support, caregiver burden, and supportive interventions for family and friends, which nurses may incorporate upon inpatient discharge.

Methods

A search for literature was performed using Google Scholar; CINAHL; EBSCO; UpToDate; and CatSearch. CatSearch is the Montana State University (MSU) library search engine which searches all available MSU databases. Search terms included: “suicide prevention;” “reducing suicide risk post-discharge;” “family and/or friends and suicide prevention;” “perceptions and caregivers and suicide prevention;” “lethal means restriction;” “gun locks and lethal means restriction;” “post-discharge and suicide and effects on caregivers;” “experience of caregivers of suicidal individuals;” “means of supporting family and friends and post-discharge and suicidal;” and “safe gun storage and suicide prevention.”

Inclusion criteria initially included studies in the last 5 years, but this was expanded to include studies as far back as 2004 due to their relevance to the topic and lack of more recent studies examining key variables. Studies were also included if they were: national guidelines from mental health organizations; peer-reviewed; written in English; examined effects across the lifespan; and had full-text available. Studies were excluded if they were specific to a particular age group, such as adolescents, or were a broad general discussion of suicide. See Appendix A for the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) article selection outline. Of the 45 identified articles, a total of 13 were deemed relevant after 20 were eliminated if they were a broad general discussion of suicide (risk factors, statistics, etc.) rather than a discussion on suicide prevention, and 4 were ineligible for inclusion due to a differing population or focus.

The Polit & Beck (2021) evidence hierarchy pyramid was used to evaluate the quality of evidence provided by each article. The levels of evidence (LOE) beginning at the top of the pyramid (the highest LOE) are as follows:

Level I: systematic review/meta-analysis of RCTs,

Level II: randomized controlled trial (RCT),

Level III: nonrandomized trial (quasi-experiment),

Level IV: systematic review of nonexperimental (observational) studies,

Level V: nonexperimental/observational study,

Level VI: systematic review/meta-synthesis of qualitative studies,

Level VII: qualitative study/descriptive study,

Level VIII: non-research source (internal evidence, expert opinion).

Results

The articles meeting criteria (n=13) included a wide range of publication types and levels of evidence. These included:

- Two professional guidelines (LOE: VIII) (National Action Alliance for Suicide Prevention, 2019, 2020).
- An Australian mixed-methods study (LOE V/VII) which examined the experiences of families and friends (n=758) caring for individuals who had attempted suicide; 50.5% of the patients had received care in an ED, and 36.8% had received care on an inpatient unit following the attempt (Coker et al., 2019)
- One factorial randomized controlled trial (LOE: II) examining lethal means restriction counseling and use of gun locks in military personnel (Anestis et al, 2021).

- A retrospective case-control study (LOE: V) examining data from the National Violent Deaths Reporting system regarding the methods used by individuals who had suicided in the U.S. (Choi et al., 2022).
- A retrospective case control study (LOE: V) examining data from the National Mortality Follow Back Survey about safe gun storage practice amongst individuals who died by suicide in the U.S. (Shannessa et al., 2004).
- A cross-sectional national survey (LOE: V) of U.S. gun owners on safe storage practices (Crifasi et al., 2018).
- A two-part cross-sectional study (LOE: V) on social support as a protective factor in suicidal ideation and attempts; the study included a U.S. sample of participants over the age of 17 and an English sample of individuals over 16 with a total sample size of n = 7,461 (Kleiman & Liu, 2013).
- An Australian cross-sectional study (LOE: V) of individuals caring for a loved one after a suicide attempt and with ongoing suicidal ideation (n=435) (Maple et al., 2023).
- A multi-site ethnographic study (LOE: VII) of English patients (n=6) involved in a community-based treatment program for suicidal ideation and mental health crises; the sample also included their families (n=4) and professional caregivers (n=13) (Gorman et al., 2023).
- A systematic review (LOE: IV) of studies (n=9) involving LMR counseling in the emergency department (ED) for suicidal patients discharged from the ED (Hunter et al., 2021).

- A systematic review (LOE: IV) of quantitative (n=4) and qualitative (n=17) studies outlining the experiences and needs of friends and family caring for loved ones who have attempted suicide or experienced suicidal thoughts (Lavers et al., 2022).
- A systematic review (LOE IV) of studies (n=45) about the efficacy of lethal means restriction on suicide prevention and the role of media on suicide method (Yip et al., 2012).

Five studies included were Level V – observational or experimental studies: Choi et al., (2022); Crifasi et al., (2018); Kleiman & Liu, (2013); Maple et al., (2023); Shenassa et al., (2004). However, there were three Level IV – systematic reviews of observational studies: Hunter et al., (2021); Lavers et al., (2022); Yip et al., (2012). One Level II randomized controlled trial (Anestis et al, 2021), one Level VII – qualitative study (Gorman et al., 2023), and two Level VIII – expert opinions (National Action Alliance for Suicide Prevention, 2019, 2020). Additionally, there was one mixed methods study with Level V and Level VII components (Coker et al., 2019). Overall, the literature is lacking in LOE I-III, as suicide interventions do not lend themselves well to randomized control trials or structured formal research.

Means Restriction

Safe firearm storage consists of keeping guns secured and unloaded, with ammunition stored separately (National Actional Alliance for Suicide Prevention, 2019). Shannessa et al., (2004) examined the correlation between safe gun practices and suicide and found safe practices were most effective in reducing risk in those with low-to moderate intention to die. However, in those with high intention to die there was no difference. Overall, they concluded that keeping a gun locked up and/or unloaded reduces the risk of firearm suicide by as much as 60%. As suicide

is often impulsive, with 24-53% of suicides considered for as few as five minutes, safe firearm storage practices are a reasonable intervention (Shenassa et al., 2004).

The National Action Alliance for Suicide Prevention (2020) published guidelines endorsing the use of LMR education in suicide prevention. The guidelines recommend interventions that encourage safe storage of firearms and suggest including family and friends in managing access to firearms, particularly during times of crisis. In a randomized controlled trial, Anestis et al. (2021) found LMR counseling significantly increased the rate of safe gun storage in their sample of military personnel (n=232); at 6 months follow-up, those in the LMR counseling arm were 30% more likely to continue to use a locking device (Anestis et al., 2021).

While managing firearm risk is important, attention should also be paid to incorporating control of additional risks, such as ready access to excessive medications like acetaminophen or prescription medications (Hunter et al., 2021). The National Action Alliance for Suicide Prevention (2020) guidelines for LMR recommends families dispose of old medications and use drug lockboxes to reduce medication access. Education should be provided about how to locate safe disposal sites. For LMR to be effective, both the individual at risk and family or friends should be educated about suicide risks and LMR (Hunter et al., 2021). Nursing staff play an important role in patient education and are the last point of contact as a patient is discharged from the hospital. As such, nurses are well positioned to provide families and friends with necessary LMR education and materials to reduce the heightened suicide risk in the post-discharge period.

Social Supports

In addition to LMR guidelines, the National Action Alliance for Suicide Prevention (2019) also publishes guidelines on best practice for suicide prevention during the transition

from inpatient to outpatient care. The guidelines emphasize the importance of including family members and other natural social supports, such as friends, in the discharge process. Family and friends can offer unique perspectives on the patient's presenting concerns and offer the patient support in the hospital setting and at discharge. Individuals supporting the patient may require education and assistance through access to community resources (National Action Alliance for Suicide Prevention, 2019).

In a study of 7,461 participants surveyed about social support and psychiatric history, Kleiman & Liu (2013) found that individuals with higher levels of social support were 30% less likely to attempt suicide than those with less support. While the reasons for this were beyond the scope of their study, they hypothesized these results were due to several factors: psychological factors such as higher self-esteem; social factors such as friends available for distraction; and physical factors such as someone to remove weapons from the home of a suicidal individual (Kleiman & Liu, 2013).

Caregiver Burden

Social support is an important component to suicide prevention; however, informal caregivers of suicidal individuals can experience significant distress leading to burnout and may themselves need supportive care. Informal caregivers are supportive family and/or friends and will be referred to as "caregivers" throughout the remainder of the text. In a survey of 435 respondents, Maple et al. (2023) examined factors associated with caregiver burden. Those associated with a higher caregiver burden included:

- being female,
- being emotionally close to the suicidal individual,

- the degree of seriousness of the suicide attempt,
- the frequency of contact pre-attempt,
- the perception of being unable to prevent the attempt,
- a heightened level of psychological distress (Maple et al., 2023).

In a systematic review of both qualitative and quantitative literature, Lavers et al. (2022) examined the experience and needs of caregivers of suicidal individuals. Several relevant themes emerged. First, caregivers often described caregiving as a burden and suffered from anxiety, depression, and stress; at times, health concerns emerged from the psychological stress. There was often disruption to family life and a higher level of depression was seen in caregivers of persons with worse daily functioning. Some caregivers showed hypervigilance and some caregivers had the emergence of post-traumatic stress disorder. Second, caregivers wanted to be included in the psychiatric care of the suicidal individual and frequently voiced a need for emotional support and psychiatric care for themselves. Of note, discharge from the hospital was a time of distress for caregivers and discharge often occurred without caregivers receiving adequate information about suicide prevention after discharge (Lavers et al., 2022). Suicide affects a range of individuals including those with their own mental health concerns and caregivers often feel unprepared to care for the suicidal loved one after discharge (Lavers et al., 2022). The stress involved in being a caregiver not only affects the quality of care they can provide, but also can lead to burnout and the possibility of suicidal ideation in the caregiver (Lavers et al., 2022; Maple et al., 2023).

In a mixed-methods study, Coker et al. (2019) examined the experiences of families and friends caring for individuals who had attempted suicide; 36.8% of the suicidal individuals had

received care in the inpatient setting and 50.5% had received care in an ED. Coker et al. (2019) found that caregivers of the suicidal individual experienced high levels of distress and many (56.2%) reported not having adequate support for themselves. More than half (65.1%) of caregivers reported they had not received any information on how to care for their loved one; only 7.4% were provided a brochure, and 4.2% were directed to online resources (Coker et al., 2019).

Many caregivers find support groups beneficial (Coker et al., 2019; Gorman et al., 2023). However, Coker et al. (2019) found only 8.6% of caregivers had been provided information on support groups by the healthcare entities caring for their loved ones. In an ethnographic study, Gorman et al. (2023) found caregivers felt isolated and were interested in peer support group information; access to such groups provided a supportive environment for the caregiver and information on how to best support their suicidal loved one.

When caregivers were not provided information on supportive resources, they resorted to searching the internet for help (Coker et al., 2019; Gorman et al., 2023). There is a crucial need for information provided by healthcare providers given that many caregivers felt they were not adequately communicated with or supported by the mental healthcare providers caring for their loved one (Lavers et al., 2022; Maple et al., 2023). Caregivers should be provided with clear, easily accessible information about available resources to reduce caregiver stress (Lavers et al., 2022). This is in keeping with The National Action Alliance for Suicide Prevention (2019) recommendations to provide caregiver support through access to peer support groups and additional supportive community resources. Standard information about LMR and community resources should be provided to caregivers by the hospital prior to the suicidal patient

discharging to increase understanding, reduce distress for caregivers, and improve access to supportive care.

Discussion

The result of this literature review underscores the need for interventions aimed at reducing suicide risk post-discharge from inpatient care. While the suicide risk remains high for many years after discharge, the period immediately following discharge is a time of increased risk, and as such represents an important time for implementing interventions that reduce risk (Chung et al., 2017, 2019). Social support is a protective factor for suicide (Lavers et. al., 2022) and involving caregivers in LMR helps reduce risk (Yip et al., 2012; Hunter et al., 2021), but additional support is needed, and nurses are in the position to bridge the gap. Caregivers of suicidal patients can have immense stress related to caring for their suicidal loved one; this can lead to secondary trauma, mental health problems, and increases the risks for suicide in caregivers (Lavers et al., 2022; Gorman et al., 2023). Supportive and standardized care interventions should be implemented that reduce suicide risk while providing support for caregivers.

The available literature has robust support for LMR at the individual and population level (Shanessa et al., 2004; Yip et al., 2012; Anestis et al., 2021; Hunter et al., 2021). There was some available research on caregiver burden (Lavers et al., 2022; Gorman et al., 2023; Maple et al., 2023) while multiple articles endorsed involving caregivers and providing them with education and support (Shanessa et al., 2004; Yip et al., 2012; Kleiman & Liu, 2013; Hunter et al., 2021; Lavers et al., 2022; Gorman et al., 2023; Anestis et al., 2021;). Information about supporting

caregivers was centered around increasing communication with the psychiatric care team, education on LMR, and access to community resources including therapeutic support groups.

One study described delivery of in-home services for suicidal individuals and their families (Gorman et al., 2023). Unfortunately, implementation of an in-home care service is costly and not readily implementable. No articles were found that discuss the use of providing caregivers and patients information on LMR and community resources through use of an educational pamphlet; however, an internet search revealed numerous sites where such materials are available. In comparison, there is some research that suggests brochures may be helpful in communicating important health information (Jeraisy et al., 2023), such as LMR and caregiver resources. Providing information on these resources would be in keeping with guidelines published by the National Action Alliance for Suicide Prevention (2019) which recommend providing caregivers information about LMR and community resources. Information about community resources would include topics such as caregiver support groups offered by the National Alliance on Mental Illness and where to dispose of medications to support LMR. Use of pamphlets is a relatively low-cost option for providing this information. Additional research into the efficacy of such a tool would help inform future suicide prevention interventions.

CHAPTER TWO

PROJECT PROPOSAL

Completed suicides have a serious effect on family and friends of the deceased, as well as on healthcare providers caring for the individual. Family and friends close to the person are at risk for suicide themselves, and can experience prolonged grief, depression, and post-traumatic stress disorder (Cerel et al., 2016). Furthermore, loss of a patient to suicide can be one of the most difficult events in a healthcare provider's career; providers can experience burnout, anxiety, depression, and legal consequences (Berardis et. al., 2018). Negative emotional experiences can put nurses and providers themselves at risk for suicide and negatively impact the mental healthcare system.

The impact of one suicide goes beyond immediate family, close friends, and healthcare providers. One study estimated as many as 135 individuals are affected by each suicide (Cerel et al., 2016). The global suicide rate is approximately 703,000 persons per year (WHO, 2023). Suicide was the 11th leading cause of death in the United States (U.S) in 2021 with 48,183 deaths (CDC, 2023). States in the Northwestern U.S. frequently have suicide rates over the national average and Wyoming and Montana are frequently in the top five states for suicide (CDC, 2023). Given these alarming statistics, the secondary harm from suicide is immense. Additionally, each death is an unnecessary and preventable tragedy for the individual who dies.

With the marked increased risk of suicide in the immediate post-discharge period, standardized educational interventions provided by nurses and aimed at family members and caregivers are imperative for reducing suicide rates. Interventions should be implemented prior

to discharge from inpatient care and include lethal means restriction (LMR) education and supportive resources for families and friends.

Lethal means restriction (LMR) is a well-documented means of preventing suicide (Yip et al., 2012; Hunter et al., 2021; Bojanic et al., 2022) and counseling on LMR has been shown to improve safe gun storage practices (Anestis et al., 2021). Coupling LMR information with distribution of gun locks further improves safe storage practices (Anestis et al., 2021) and safe gun storage is a protective factor for suicide (Shenassa et al., 2004). LMR also involves locking up or disposing of excessive dangerous medications to prevent overdose (National Action Alliance for Suicide Prevention, 2020). Involving family and friends in LMR is critical to implementation of safe practices (Hunter et al., 2021). Guidelines published by the National Action Alliance for Suicide Prevention (2019; 2020) recommend use of LMR and family involvement to reduce suicide risk.

The National Action Alliance for Suicide Prevention (2019) guidelines also recommend providing family and friends information on community resources. As family and friends can experience significant emotional difficulty as a caregiver to a suicidal individual, access to resources that reduce caregiver burden is necessary to lessen secondary mental health crises in caregivers (Kleiman & Liu, 2013; Coker et al., 2019; Lavers et al., 2022; Gorman et al., 2023; Maple et al., 2023). Community resource information should include information on local therapeutic support groups, as caregivers of suicidal individuals have shown benefit from support groups and often have voiced a desire for such resources (Coker et al., 2019; Gorman et al., 2023).

Problem Statement

The problem is on discharge from inpatient psychiatric care, caregivers of suicidal individuals are not always provided information on LMR or given community caregiver resources. Patients or their support systems may lack funds for a gun lock and may fail to be informed of community support resources. A streamlined interdisciplinary process is needed that ensures: (a.) information on LMR and community resources is provided to every patient and/or caregiver prior to discharge from inpatient care; and (b.) gun locks and medication disposal bags are made available by the facility when potentially needed by the patient. Ensuring standardization of process is in keeping with the National Action Alliance for Suicide Prevention's (2019) guidelines for transition from the inpatient setting to outpatient care; these guidelines stipulate that LMR information be provided, and caregivers be involved in the discharge process and provided access to resources. Providing information on LMR and community resources will help mitigate the risk of suicide post-discharge and fulfill the requirements of these guidelines. Additionally, information on supportive community resources, such as supportive peer groups, can help ease caregiver burden. This information should be provided by the facility prior to discharge. This gap in care can be resolved through use of a discharge packet containing LMR education and information about community resources. See implementation section below for a full description.

Organizational Microsystem Assessment

The site for this quality improvement project was an inpatient psychiatric facility in the Northwestern U.S. The facility accepts adults (at least 18 years old) through geriatric patients

from across the state. Patients may be admitted after a suicide attempt, for suicidal ideation, or for stabilization of an acute decompensation in all spectrums of mental illness. The project stakeholders included the director, nurse manager, and unit staff which is comprised of: providers including 2 psychiatrists, 1 advanced practice registered nurse (APRN's), and 1 physician's assistant (PA); 5 social workers; 33 nurses; and a discharge coordinator.

The site director is the leader of the organization, while the nurse manager oversees the nursing staff. Psychiatrists and APRN's/PA's provide psychiatric assessment, general medical care, and communicate with family and friends. Social work: communicates with family and friends; provides therapeutic interactions with patients; conducts therapeutic groups; educates on LMR for those deemed high-risk for suicide; intermittently helps with community resources; and navigates legal issues. The discharge coordinator arranges follow-up care. Nursing: provides direct patient care and management of the therapeutic milieu; leads therapeutic groups; provides therapeutic interactions with patients; and interacts with family and friends. Nursing is also responsible for discharging patients from the facility after all members of the care team have completed their part of the discharge process. CNAs: help with patient care; assure patients are visualized at least every 15 minutes for safety; conduct therapeutic groups; and perform tasks around the unit, such as patient laundry. There is a daily interdisciplinary treatment team meeting (ITTM) that involves all or most of the stakeholders, except for CNAs. Patient care, readiness for discharge (including suicide risk), and aftercare arrangements are discussed daily in the ITTM.

On the day of discharge, a paper form used by nursing ensures all discharge steps have been completed before the patient leaves the hospital. This form will be referred to as the discharge form (DF). The DF is signed by the provider (psychiatrist, PA or APRN) completing

the discharge; this signature indicates that the patient has been assessed by the provider, deemed safe to discharge, and medications have been ordered. The discharge coordinator signs the DF indicating the patient has appropriate follow-up care scheduled. Social work signs the DF to indicate they have reviewed the patient's safety plan and coordinated the patient's discharge with any relevant caregivers. CNAs sign the DF to indicate they have assured all the patient's belongings have been returned to the patient. Nursing signs the DF indicating they have provided the patient with the required discharge paperwork which prior to project implementation included: a PHQ9; satisfaction survey; the Montana Quit Line (smoking cessation) information; and the after-visit summary (AVS). Nursing also reviews the DF to ensure all elements are completed prior to discharging the patient. Fig. 2.2 below shows a current state diagram of the prior process.

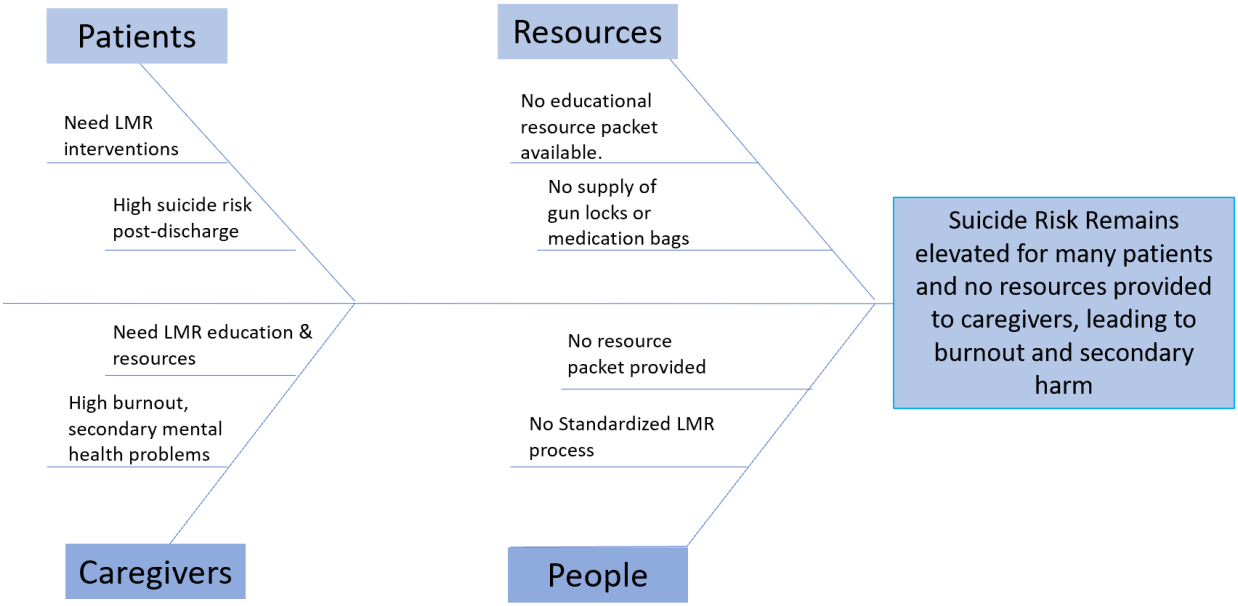
Previously, there was not a standardized list of community resources for patients or caregivers. Patients were provided with the AVS, which contains information about their follow-up appointments in the community and medications they are taking. Any information provided was specifically for the patient and there was not any information provided to caregivers for their own mental health needs. The current process did not meet the National Action Alliance for Suicide Prevention (2019) guidelines, suggesting a gap between evidence and practice.

Access to guns and excessive medications was assessed by the providers and social work and entered into the electronic health record (EHR) by each provider. However, prior to project implementation there was no standardized process for addressing the risk or deciding which patients required intervention. When the interdisciplinary team had a high level of concern for suicide, the risk was discussed in ITTM, and social work reached out to family and friends to

provide LMR counseling and ensured guns and pills were properly stored. There was no benchmarking data available as the facility did not track how many patients or their caregivers were provided LMR education.

While this process did help reduce risk for many of the highest risk patients, the previous process posed several quality-of-care concerns. First, the lack of standardization meant the process relied on human capacity to remember that the problem needed to be addressed, leaving open the possibility this step could be missed. Second, the problem was being addressed in those considered to be a high risk for suicide but could fail to mitigate risk in those not deemed to be at risk for suicide. Given that the risk of suicide after discharge is 100 times greater than the global average, even if the individual was not admitted for suicidal ideation, there was a significant need to address this gap (Chung, 2017). Additionally, gun locks or medication disposal bags were not being distributed, leading to potential health disparity for those unable to afford or obtain such LMR tools. To meet evidence-based guidelines, it was essential to implement a standardized process in which all caregivers were provided community resources and information on LMR, as well as a process for distributing gun locks and medication disposal bags when needed. To eliminate this gap in care, the health department pledged to provide locks and bags to the facility for distribution to patients and an educational resource packet was created by the primary investigator to be provided to discharged patients and their caregivers. See intervention and implementation below for a discussion of the change including standardization and maintenance of the process. Fig. 2.1 below is a fishbone diagram outlining the pervious gaps in care.

Figure 2.1. Fishbone Diagram



Quality Improvement Model

The Institute for Healthcare Improvement (IHI) toolkit was chosen for this project. IHI employs the Model for Improvement, a simple quality improvement tool which incorporates the Plan-Do-Study-Act (PDSA) cycle (IHI, 2023). The Model for Improvement (Langley et al., 2009) starts with three questions:

- What are we trying to accomplish?
- How will we know that a change is an improvement?
- What change can we make that will result in improvement?

After these questions are asked, the PDSA cycle is completed for the proposed change. The plan stage includes planning for change. In the do stage, the proposed change is implemented. In the study phase, the implemented change is studied to determine if the desired

outcome was achieved; if it was not, the act phase involves determining what went wrong, then the cycle starts over with planning how to rectify the issue. This is an iterative process which can be completed many times to achieve the desired outcome. If the desired outcome is reached, the change is solidified into practice in the act phase (Langley et al., 2009).

For this project, the goal was to ensure that every caregiver and/or patient discharged from the facility received an educational packet and gun lock or medication disposal bag when applicable. This goal answers the first question, "what are we trying to accomplish?" The next question "how will we know that a change is an improvement?" was answered by data collected to determine if 100% of caregivers and/or patients received the packet and gun lock/medication bags. The third question "what change can we make that will result in improvement?" was the practice change itself – see the section below titled "Intervention & Implementation Explanation" for a full description of the change. Following implementation of the proposed change, PDSA cycles were completed until the desired goal of 100% of caregivers/patients receiving the packet and gun locks/medication bags was reached, which was hoped to be achieved within the 6-week project intervention timeline. See Appendix B for a visual representation of the IHI's Model for Improvement used for this project.

Specific Aims/Purpose Statement

The purpose of this project was to improve system processes to ensure that 100% of caregivers and/or discharged patients received information on LMR and community resources and were offered a gun lock and/or medication disposal bag when applicable. The ultimate purpose was to support the mental health of caregivers by reducing caregiver burden through the provision of education and community resources, while reducing suicide risk in patients

discharged from inpatient care. Short-term goals of the project were planned to be completed by the end of December 2023 and included:

- Providers, nurses, and social workers would be educated on the new process.
- The packet would be printed and available for use.
- The discharge form would be updated for the current process.

By the end of January 2024, any frequent comments by caregivers, patients, or staff about confusing material in the packet would be addressed through revision of the packet by the primary investigator; this would be an iterative process and continue throughout the project. Intermediate goals were planned to be completed by the end of March 2024 and included:

- 100% of discharged patients and/or their caregivers would be given an educational packet along with a gun lock and/or medication disposal bag if applicable.
- 100% of patients and/or caregivers would be given an opportunity to ask questions about materials in the packet.
- A long-term form of the packet would be decided upon based on feedback from staff and patients or caregivers.
- A formal process would be in place to allow revisions as community resources change -the packet would be revised by social work on an as needed basis.
- A periodic automatic replenishment (PAR) stock number for gun locks and medication disposal bags would be determined to ensure adequate supplies were maintained.

Long-term goals of the project will be completed by January 2025, which are outside the timeline of the project but established for sustainability, include the discharge education packet being fully integrated into practice and no patient suicides within one month of discharge.

Methods

Intervention & Implementation Summary

The intervention included the development and implementation of a process change whereby nursing provided an educational resource packet with community resources and information on LMR and suicide prevention to caregivers when patients discharged from the inpatient psychiatric facility. Free gun locks and medication disposal bags were provided at discharge as well; the need for either were communicated to nursing by social work who assessed every patient for lethal means access. Distribution of the packet and locks and/or bag were tracked using the discharge form (DF), a paper form in use prior to project implementation which ensured no steps of the discharge process are missed. A section was added to the form that allowed social work to indicate if a gun lock/medication bag was needed and for nursing to track if they were provided. Additionally, a section was added to the note templates in the electronic health record (EHR) for nurses to chart the distribution of the packet and/or gun lock and medication disposal bag. The project implementation and analysis were planned to occur between December 2023 through March 2024. The aim of process standardization was to increase education and LMR resources to support caregivers of discharged psychiatric patients and ultimately decrease suicide risk post-acute hospitalization.

Intervention & Implementation Explanation

See the microsystem assessment section above for a description of the previous process. The new process included during implementation of this quality improvement (QI) project was as follows. The assessment and indication of access to lethal means on admission remained the same, including social work's calls to caregivers to further assess access to lethal means and provide LMR counseling when needed. In the new process, social work also inquired as to whether a gun lock or disposal bag was needed and noted this need in the EHR for all patients. Addition of the packet containing LMR information and gun lock/medication bag disposal bag dispersal, regardless of suicide risk, ensured all patients and caregivers received this information.

During ITTM on the day of discharge, social work was to have a computer available and look at their notes to discern if the patient had access to guns or excess medications and determine if a gun lock or disposal bag was needed, based on prior assessment. Following ITTM, social work marked on the DF if a gun lock or medication disposal bag was needed. Nursing then provided the educational packet and any gun locks or medication disposal bags needed to the caregiver (or patient if they did not have a caregiver) on discharge. Nursing was also to discuss the packet, including LMR, with the caregiver and/or patient and provide the patient and/or caregiver the opportunity to ask questions. This process was to be noted by the nurse on the DF, as well as in the nursing discharge note in the EHR. The DF contained a section in which nursing could list patient and/or caregiver comments about the packet or ideas nursing had for improvements. Additionally, the nurse manager used the discharge form to make follow-up calls to patients. In the new process, during these phone calls, the patients were to be asked if they had

any questions or comments about the packet. The collected qualitative data was to be used by the primary investigator to update the packet throughout the implementation period.

Changes to the project were made using the above noted PDSA cycle based on whether goals were met. As this project was a minor change to an existing workflow, few barriers were anticipated. The changes represented a minor increase in work for both nursing and social work staff, and members of both disciplines had indicated they believed the change was feasible and necessary. When needed, the charge nurse assisted nursing staff with discharges, as assisting with excess nursing work is a primary function of the charge nurse at this site. See the current (Fig. 2.2) and future state (Fig. 2.3) diagrams below. Confidentiality of the data for this project is discussed in the safety and confidentiality section below.

Figure 2.2. Current State

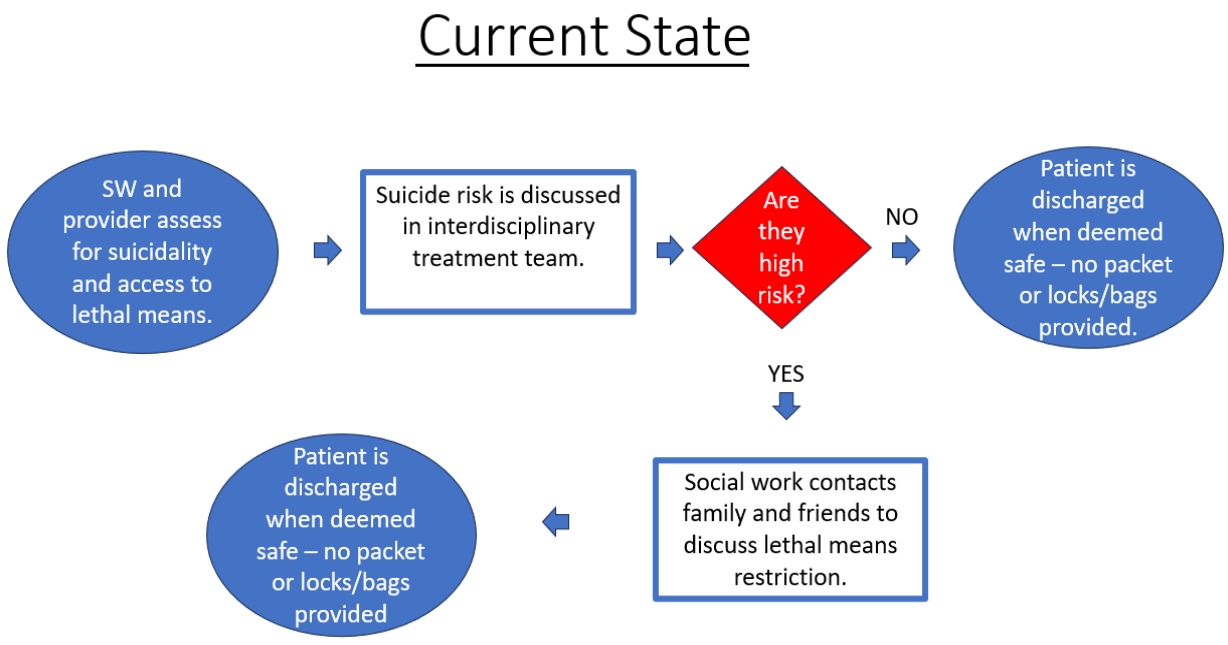
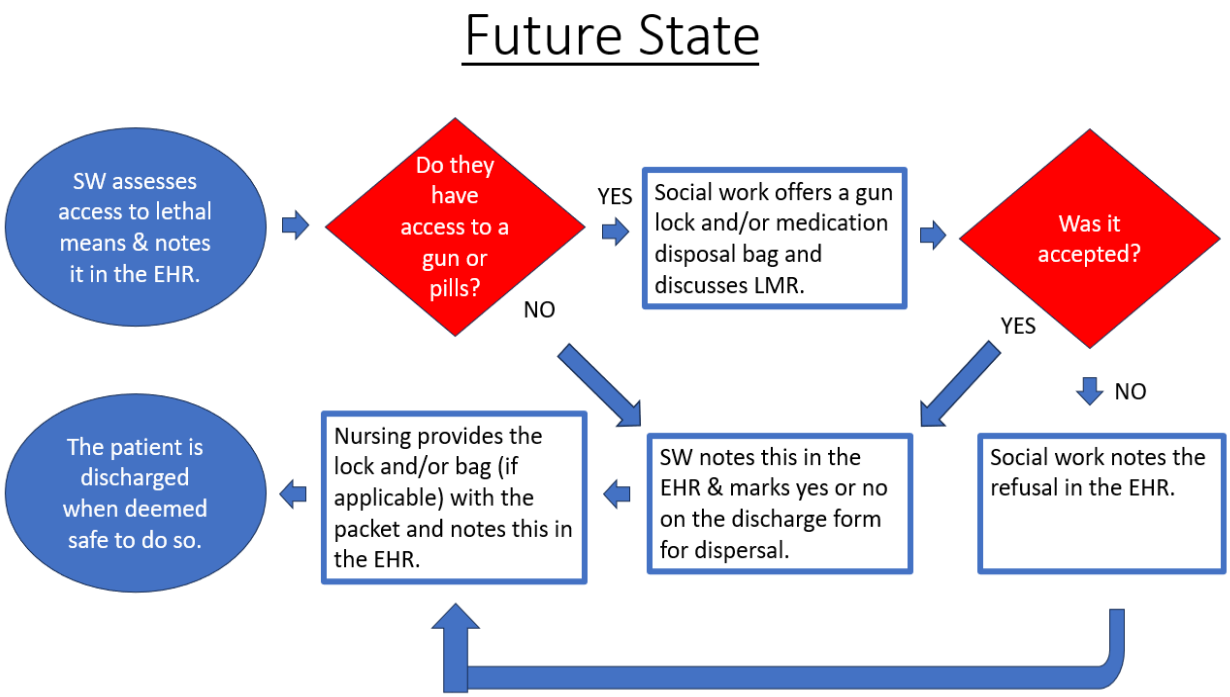


Figure 2.3. Future State



Packet Description and Implementation

The packet was created by the primary investigator (PI). When possible, already existing, publicly available materials were used for the educational packet. Unique material created by the primary investigator followed the CDC's guidelines requiring plain language (CDC, 2023). The packet provided to caregivers and/or patients contained relevant information on suicide prevention and community resources including:

- LMR information including safe firearm and medication storage (gun locks were provided when needed).
- Information on where to dispose of extra medications (as well as disposal bags when needed).

- The local National Alliance on Mental Illness (NAMI) support groups, which includes a group for caregivers as well as one for individuals with mental health needs.
- The National 988 suicide hotline.
- Out of the Darkness, the American Foundation for Suicide Prevention's annual walks that raise awareness for mental illness and suicide and provide support to those affected by suicide.
- A state specific site with resources for suicide prevention.
- The Trevor Project, a suicide prevention resource for LGBTQ+.
- A fact sheet about warning signs for suicide.

The supply of gun locks and medication disposal bags were managed by the executive assistant responsible for unit-specific supplies using existing supply chain procedures. When the stock of a supply was low, nursing or CNAs were to indicate on a white board that additional stock of the given supply was needed. The average number of locks/bags used were tracked weekly throughout the project to determine an appropriate PAR stock number. When the PAR stock replenishment number was reached, nursing notified the executive assistant to contact the health department and request more gun locks and medication disposal bags. The health department had indicated that they regularly supply gun locks and bags to multiple providers in the area and that they could supply these to the site indefinitely.

Within the project's "plan" phase, the packet was planned to be printed, and ready for distribution by the end of December 2023. The packet development included feedback and approval by the nurse manager, Director, and head of social work services before use in the "do"

or implementation phase. The DF was to have a secondary page added that contained the information needing to be tracked; this was planned to be added by the end of December 2023. Information added, along with role responsibilities, to the DF included:

- Is a gun lock needed? Social work completed.
- Is a medication disposal bag needed? Social work completed.
- Was a gun lock provided if needed? Nursing completed or indicated N/A.
- Was a medication disposal bag provided if needed? Nursing completed or indicated N/A.
- Was the educational packet provided? Nursing completed.
- Were caregivers and/or the patient provided the opportunity to ask questions? The plan was for nursing to allow time for questions and the nurse manager to ask if there were questions on follow-up calls.
- Any comments from patients or caregivers and ideas from staff. The plan was for nursing to complete this on discharge and the nurse manager was to document it on follow up calls.

By the end of December 2023, education about the new process was to be communicated by the PI via email to all interdisciplinary staff involved in the project. Additionally, the head of social work services planned to communicate the change verbally to social work staff. Nursing staff were to be further educated about the new process and their responsibilities by the PI or the nurse manager through education at daily huddles and at the monthly staff meeting. There were huddles twice a day at every shift change. The education at huddles would continue daily for two weeks during the planning stage. The PI informed the executive assistant about the plan for

managing stocks of gun locks and medication disposal bags. Distribution of the packet and locks/medication bags was planned to begin at the end of December 2023.

The budget for the proposed change was relatively low as the gun locks and medication disposal bags were provided free of charge by the local health department. The budget included printing of the packet itself, and time spent by the PI implementing the project (this was provided as an example, all services were provided free of charge by the primary investigator). The packet is 3 double-sided pages, with an estimated cost of $0.02 per page (ink + paper), and costs approximately $0.06 per packet. The weekly cost of printing the packet was based on discharge census; there were approximately 10 discharges per week, bringing the weekly cost to approximately $0.60. Over the planned course of the project (January 2024 – March 2024) this totaled approximately $7.20. The cost of the primary investigator was $40 per hour for 270 hours and totaled $10,800 by the project completion.

Evaluation and Analysis

Quantitative and qualitative data about the project was planned to be collected on a weekly (Sunday to Saturday) basis by the PI to determine progress towards the primary goal; 100% of caregivers and/or patients would receive the discharge packet and gun locks and/or medication bags when appropriate. Qualitative data was planned to consist of comments about the packet by staff and patients. Nursing was to indicate these comments on the DF at discharge, as was the nurse manager when follow-up calls to patients were performed and questions pertinent to the packet were assessed. The qualitative data was planned to be analyzed to update the packet twice during the project – once midway through and for a final version at the completion of the project timeline. Goals of the project were in line with the SMART goals

acronym as outlined by Doran (1981) – specific, measurable, achievable, relevant, and time-bound. Goals and timelines for all the goals of the project are listed in the specific aims/purpose section above.

The data was collected via use of the DF (completed by nursing when a patient discharged), as described above. The DF is turned into the nurse manager after the patient discharges. The PI obtained the DF from the nurse manager and used the DF to collect data and look up the patient in the EHR to determine if distribution of the packet and locks/bags was charted by the nurse. Additionally, information on the number of locks and bags used was tracked to determine an average number used each week; this allowed for an appropriate PAR stock amount to be determined to ensure adequate stores of necessary supplies. Nominal data indicating a yes/no response were analyzed using a frequency chart, and collected on the following questions (see Appendix C for a data collection tally sheet):

1. Did social work indicate that a gun lock was needed?
2. Did social work indicate that a medication disposal bag was needed?
3. Was a gun lock distributed to caregivers/patients if it was needed?
4. Was a medication disposal bag provided if it was needed?
5. Did caregivers/patients receive the informational packet?
6. Was the caregiver/patient given an opportunity to ask questions?
7. Was the distribution of the informational packet and/or gun locks/medication bags charted in the EHR?

Table 2.1 illustrates SMART goals for the project.

Table 2.1. SMART Goals

<table>
<tr><td colspan="3">SMART Goal #1:
The educational packet was planned to be printed and available for use by end of December 2023</td></tr>
<tr><td colspan="3">• Primary investigator created the packet.
• CDC guidelines for simple language used.
• Approval obtained from MSU IRB
• Approval obtained from site/stakeholders.
• Digital copy of packet available on the site shared drive.
• Printed copies available for distribution.</td></tr>
<tr><td>Data to be collected:
• Approval obtained from MSU IRB
• Approval obtained from site/stakeholders</td><td>Method of Collection/Person collecting:
• PI
• Written approval from IRB/site</td><td>Planned data analysis:
• All approvals obtained.</td></tr>
<tr><td colspan="3">SMART Goal #2
100% of providers, nurses, and social work educated on the new process by end of December 2023</td></tr>
<tr><td colspan="3">• Email sent to all staff about the change. A read receipt was included to ensure it was read.
• Providers informed of change verbally by primary investigator.
• Social work head was to inform social work verbally of the change.
• Primary investigator planned to discuss process in interdisciplinary treatment team to ensure all members informed of the new process.
• Primary investigator educated each member of the team in person.
• A list of those educated was maintained to ensure all staff were properly educated.</td></tr>
<tr><td>Data collected:
Numerator:
• List of: Nurses, social workers, and providers (MD/PA/APRN) educated on process.

Denominator: all site staff involved in the process change.</td><td>Method of Collection/Person collecting.
• The PI managed the list of nurses and social workers to ensure all were educated.</td><td>Data analysis:
• PI ensured all members of the team were educated on the new process.</td></tr>
</table>

Figure 2.4. SMART Goals continued

SMART goal #3 100% of comments by staff or patients/caregivers were considered for educational packet revision by stakeholders. This was an iterative process.		
Data collected: • Comments from staff. • Comments from patients and/or caregivers	Method of Collection/Person collecting: • Collected by the PI by means of the DF completed by nursing • Plan to be collected by nurse manager through calls to discharged patients.	Planned data analysis: • Comments obtained weekly via the discharge form and follow up calls to patients by the nurse manager and evaluated at project midpoint and conclusion to determine necessary changes to packet or process. Any proposed changes were discussed at a stakeholder meeting with the nurse manager, head of social work, and the director.

Figure 2.4. SMART Goals continued

<table>
<tr><td colspan="3">SMART goal #4:
100% of patients discharged from the facility and/or caregivers were to be provided, when indicated per social worker documentation, with an educational packet and/or gun lock/medication disposal bag by the planned 6-week project completion</td></tr>
<tr><td>Data collected:
Numerator:
Was a packet provided?
Was the need for a gun lock indicated?
Was the need for a bag indicated?
Was a lock provided?
Was a bag provided?
Denominator: # discharged patients</td><td>Method of Collection/Person collecting:
Social work EHR documentation indicated the need for a gun lock or bag via the DF.
Nursing EHR documentation indicated if a packet was provided along with a gun lock or bag when relevant via the DF.
PI examined the DF to determine if a packet was provided, a gun lock/bag was indicated, and if a lock/bag was given if indicated.</td><td>Planned data analysis:
A frequency chart with yes/no answers provided a percentage of completion for each data point. Progress emails were sent bi-weekly after data collection to communicate progress to stakeholders.</td></tr>
<tr><td colspan="3">SMART goal #5:
100% of patients and/or family/friends were to be provided the opportunity to ask questions about the packet by the planned 6-week project completion.</td></tr>
<tr><td>Data collected:
Numerator: DF documentation yes
Denominator: all discharged patients</td><td>Method of Collection/Person collecting:
PI examined data on the DF.</td><td>Data analysis:
Frequency chart to determine percentages of completion.</td></tr>
</table>

Figure 2.4. SMART Goals continued

SMART goal #6: A periodic automatic replenishment (PAR) stock amount for gun locks and medication disposal bags was determined by the end of the project 3/2024.		
Data collected: • Numerator: • Number of locks used each week. • Number of bags used each week. Denominator: Number of discharges	Method of Collecting/Person collecting: • Nursing indicated if a lock/back was provided on the DF. • PI tallied totals	Data analysis: • An average was calculated from weekly data to determine a necessary PAR stock during and upon project completion.
SMART goal #7: NO patient commits suicide within 1 month of discharge. Ongoing, but to be assessed in January 2025		
Data to be collected: • Suicides reported to the facility within 1 month of discharge by family or friends of the deceased.	Method of Collecting/Person collecting: • Reports to facility. • Collected by senior management.	Planned data analysis: • Frequency

Safety and Confidentiality

Approval for this project was provided by the leadership (Director) at the site and was reported as highly desired by all stakeholders involved. Approval was provided by the Montana State University (MSU) Institutional Review Board (IRB) prior to implementation of the project and a designation of quality improvement with low harm risk to patients was given. The project included staff process changes which were supported by literature and were intended to decrease the risk of suicide and thus posed no harm to patients.

Data were tracked using the DF that was already in use at the site for discharges. The form was in use to assure all parts of the discharge process were completed. The DF was altered to include a section that informed nursing that caregivers needed a gun lock and/or medication

disposal bags, and a section in which nursing could mark whether caregivers received the informational packet and the gun locks/disposal bags. Nursing also put distribution of the locks/disposal bags and informational packet into their discharge summary note in the EHR. The DF was then turned into the nursing manager for auditing purposes.

The DF contained the patient's name, date of birth, and medical record number; this data was used by the PI to look up the patient to collect data on correct charting in the EHR, but protected health information was not stored when recording project data. The DF containing protected health information never left the site and was returned to the nurse manager once data was collected. Data that was collected weekly for the project included the number of patients discharged, the number of locks/bags dispersed, and a tally of the answers to the questions listed above in the evaluation and analysis section.

No patient identifiers were collected for the purpose of the project. Data on the above-mentioned items were collected by the PI while at the site, and the paper DF was then returned to the nurse manager, never leaving the site. Data collected for the above-mentioned questions were coded with a simple numbering system and a yes/no response. For example, 1 – yes, 2 – yes, 3 – yes, 4 – yes, 5 – yes, 6 – yes, 7 – no, would indicate that social work indicated a gun lock and/or disposal bag was needed, the lock and/or bag was distributed by nursing along with the informational packet and the caregiver and/or patient was given time to ask questions, but it was not correctly charted in the EHR. Correct charting was defined as nursing indicating if an educational packet was provided, questions from patients and caregivers were answered, and if a gun lock or bag was requested and dispensed. If a gun lock or bag was not needed, this should have been marked as such. Comments about the packet by caregivers and/or patients and ideas

from staff were also collected to refine the packet as needed. Data regarding the above questions and the number of locks and bags used was input into an Excel spreadsheet on a password protected laptop used by the PI; comments were stored in a password protected Word document without patient or staff identifiers. Following completion of the project, data were deleted from the laptop.

CHAPTER THREE

QUALITY IMPROVEMENT MANUSCRIPT

Contribution of Authors and Co-Authors

Manuscript in Chapter 3

Author: R. Ellis Monson

Contributions: Manuscript author. Completed quality improvement project.

Co-Author: Dr. Amanda Lucas

Contributions: Editorial review, project design guidance, result oversight, content approval.

Co-Author: Dr. Elizabeth Johnson

Contributions: Peer Review.

Manuscript Information

R. Ellis Monson

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Status of Manuscript:
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☐ Accepted by a peer-reviewed journal
☐ Published in a peer-reviewed journal

Introduction

Suicide is a concerning global phenomenon with an estimated 703,000 people a year dying by this method (WHO, 2023) making suicide among the top 20 causes of death worldwide (Chung et al., 2017). In the United States (U.S), 48,183 people died by suicide in 2021 and the suicide rate increased 2.6% from 2021-2022 (CDC, 2023). Several states in the Northwestern United States (U.S) frequently have suicide rates above the national average, with Wyoming and Montana consistently in the top five states for highest suicides rates (CDC, 2023).

Hospitalization on an inpatient psychiatric unit is often required for stabilization of acute mental health crises and suicidality. Unfortunately, suicide risk in the post-discharge period is markedly elevated even in patients who were not admitted for suicidal ideation. In the first week post-discharge, patients are at a sixfold increased risk of suicide, and in the first three months post-discharge there is a 100-200 times greater suicide risk than the global average (Chung et al., 2017; 2019). These alarming results suggest recent discharge from the inpatient setting is among the greatest risk factors for suicide and this risk remains elevated long after discharge. In the 3-12 months post-discharge the risk is 60 times higher than the global suicide rate and 5-10 years later the risk is 30 times greater (Chung et al., 2019).

Problem Description

Informal caregivers, such as family or friends of the patient, play a crucial role in suicide prevention (Kleiman et al., 2013). Unfortunately, they can experience their own mental health crises secondary to their role as a caregiver of someone with mental illness and/or suicidal thoughts (Coker et al., 2019; Lavers et. al., 2022). With the marked increased risk of suicide

post-discharge and the increased stress of caregivers, standardized educational interventions provided by nurses and aimed at caregivers are imperative for reducing suicide rates. Interventions should be consistently implemented prior to discharge from inpatient care and include lethal means restriction (LMR) education and supportive resources for families and friends (National Action Alliance for Suicide Prevention, 2019). Providing access to gun locks (GL) and medication disposal bags (MDB) further aids LMR implementation and reduces health disparities for those who cannot afford them.

Review of the Literature

Suicide is often impulsive, with 24-53% of attempts contemplated for less than 5 minutes (Shanessa et al., 2004). When lethal means are not available, individuals may not attempt suicide or will chose a less lethal means, allowing time for intervention (Yip et al., 2012). The most common means of successful suicide in the U.S. is by firearm, followed by hanging or suffocation and overdose (Choi et al., 2022). LMR is an effective way of reducing suicide risk and involves limiting access to lethal means, such as firearms and excessive dangerous medications (Bojanic et al., 2022; National Action Alliance for Suicide Prevention, 2019; 2020; Yip et al., 2012). For LMR to be successful, it is crucial to involve family and friends (Hunter et al., 2021). Providing a GL paired with education about LMR improves safe gun storage practices, further reducing the risk of suicide (Anestis et al., 2021; Shanessa et al., 2004). As overdose is another common means of suicide, LMR also involves disposing of unnecessary medications or locking them up (National Action Alliance for Suicide Prevention, 2019; 2020).

The presence of strong social supports also reduces suicide risk (Kleiman & Liu, 2013). Symptoms of anxiety, depression, hypervigilance, feelings of isolation, and post-traumatic stress

disorder, as well as suicidal thoughts, can occur in the caregivers of those with mental illness (Coker et al., 2019; Lavers et al., 2022; Gorman et al., 2023). The period after the patient discharges is a time of distress for caregivers; they often report they did not receive information on how to prevent suicide and many lack adequate support for themselves (Lavers et al., 2022; Coker et al., 2019). Caregivers should be provided with clear, easily accessible information about supportive resources to reduce stress, including available support groups in the community, which many caregivers report being helpful (Coker et al., 2019; Gorman et al., 2023; Lavers et al., 2022).

Conceptual Framework

This project was completed using the Institute for Healthcare Improvement's (IHI) toolkit, which includes the Plan-Do-Study-Act (PDSA) cycle as part of the Model for Improvement (Langley et al., 2009). The PDSA was chosen for this project due to the iterative nature as cycles provide a framework for determining why an intervention failed and a planning stage for implementing a change to correct the failure. This project involved a practice change with several steps involved; PDSA provided a means for assessing and remediating issues at one-week intervals.

Purpose of the Project

The purpose of this project was the creation of a practice change that ensured consistent delivery of a suicide prevention educational resource packet at the time of discharge. The suicide prevention packet targeting caregivers contained information on LMR and supportive community resources, bridging the gap between literature recommendations and current site

practices. Additionally, the practice change aimed to assess need and distribute free GL and MDB for every patient discharging, regardless of assessed suicide risk. Providing the packet for all patients and GL's/MDB's to any patient who needed them standardized the process, eliminating the risk of a patient missing needed LMR and supportive resources. The overarching goal was to reduce suicide risk and caregiver burden in the immediate post-discharge period.

Methods

Context

The site for this project was an inpatient psychiatric unit in the Northwestern U.S. that accepts adult patients with all spectrums of mental illness, including suicidal ideation. The site is in an urban location, provides services to neighboring rural communities, and accepts patients from across the state. The site uses an interdisciplinary treatment team (ITT) model with clinical team members consisting of psychiatrists, a nurse practitioner, a physician's assistant, social work (SW), occupational therapy, a pharmacist, a dietician, a discharge coordinator, nursing, and certified nursing assistants.

Workflow prior to the project utilized SW to screen for suicidality and provide LMR for those at high-risk for suicide, but lacked a standardized process for those considered a lower suicide risk. Additionally, there were no standardized printed materials for LMR and caregiver resources, and GLs and MDBs were not being provided. As caregivers can experience distress, and suicide risk is increased post-discharge regardless of assessed risk, stakeholders were heavily invested in implementing a process that ensured all caregivers and patients received information on supportive resources, education on LMR, and a GL/MDB if desired.

Recruitment

The ITT were informed of project intent and interventions in the pre-implementation phase and made aware of voluntary participation. However, staff reported project support, citing minimal time adjustments were required to implement the project as well as a strong desire to improve the current process.

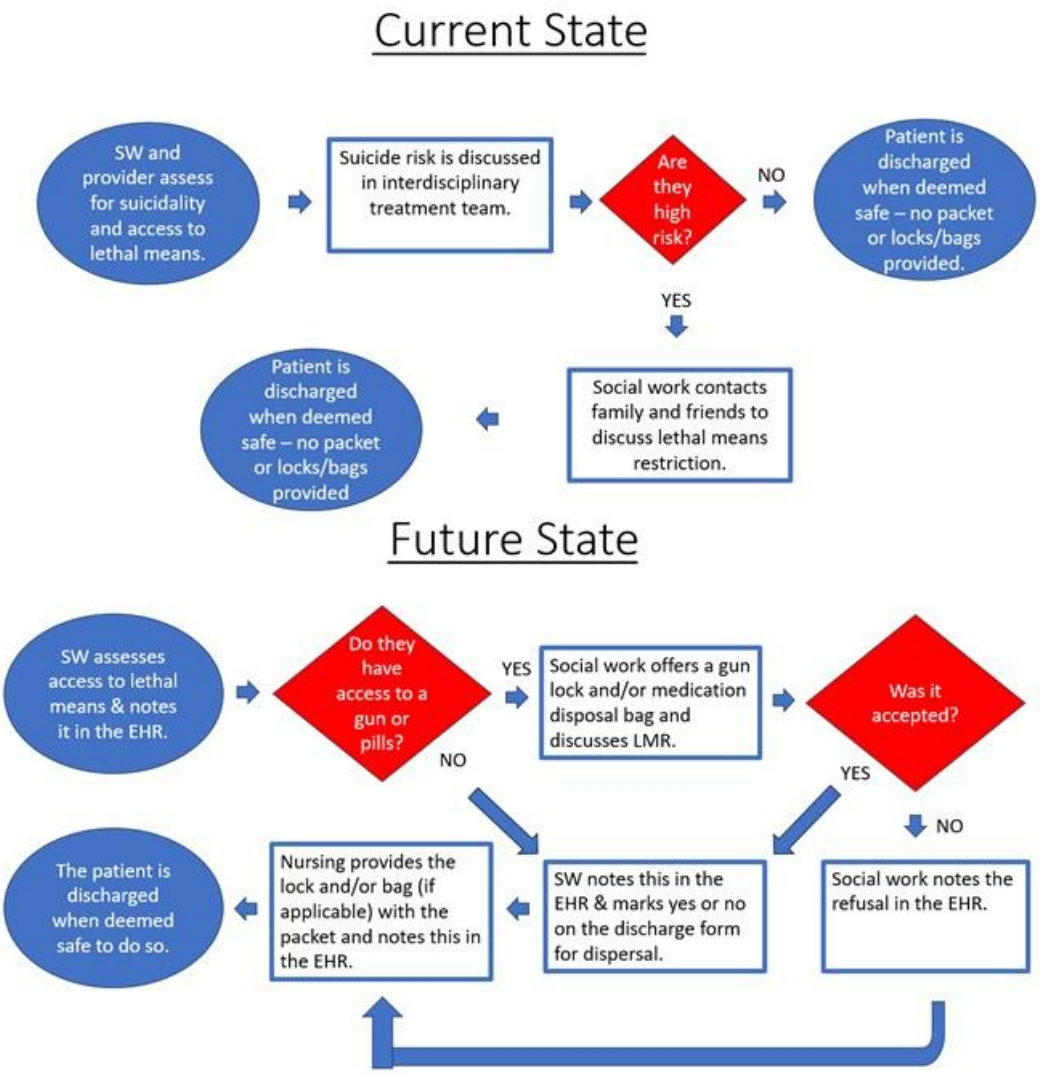
Intervention

A suicide prevention discharge packet (SPDP) was created by the primary investigator (PI) using existing online resources (with permission), as well as original content related to community resources created by the PI. The packet conformed to the Centers for Disease Control and Prevention (2023) guidelines for language and format. The packet contained information about: common warning signs of suicide; lethal means restriction (LMR); locations to dispose of medications and instructions on doing so; and information on supportive resources in the community including the National Alliance on Mental Illness, the 988-crisis line, The Trevor Project, the Out of the Darkness Walks by the American Foundation for Suicide Prevention Foundation, and a state-specific suicide prevention resource. The packet underwent a review process by stakeholders and the facilities Forms Committee before being accepted for use. Prior to project implementation, the county health department was contacted regarding the project and they provided free GL/MDB to the unit and agreed to indefinitely replenish these supplies as needed.

The next practice change was modification of the suicide screening process. In the new process, SW assessed access to lethal means, offered a GL/MDB for every patient, and discussed LMR regardless of their assessed level of suicide risk. The process change addressed the gap

from practice when compared to literature and evidence-based guidelines from the National Action Alliance for Suicide Prevention (2019, 2020). SW then notified nursing if a GL/MDB was needed at discharge via use of a modified discharge checklist called the discharge form (DF). The DF was in use prior to project implementation to ensure all steps of the discharge process were completed. The DF modification for the project included several new items: a section for SW to notify nursing that a GL/MDB was needed; a checklist item to indicate the GL/MDB were given if needed, as well as a checklist item to indicate the SPDP was provided; a checklist item indicating the SPDP was discussed and the patient was allowed time to ask questions. Nursing staff were instructed to provide the identified items at discharge, solicit feedback from patients about the SPDP, and to allow sufficient time for the patient or their caregiver to ask questions. Nursing then charted dispersal of each item in the electronic health record (EHR) and the nursing EHR template was modified to accommodate process changes. The number of GL/MDB provided to patients were tracked to determine a periodic automatic replenishment (PAR) number that would trigger contacting the health department for additional stock of these items. Figure 3.1 below depicts the old and new processes.

Figure 3.1. Current State



All staff were educated through individual verbal communication and an email outlining the new process. Before project implementation, the PI elicited verbal understanding from all staff involved. During the educational process, staff were asked to provide any ideas they or their patients had for improving the packet. In addition to this feedback, patients were routinely called after discharge to see if they needed further assistance and to assess their status; during this call, staff were instructed to ask the patient if they had questions or comments about the packet. The

unit was searched at the start of the project and any old DFs were removed. At the end of project completion, staff were again asked for SPDP and process feedback. Interventions to correct problems included discussing any issues with the staff directly and bi-weekly update emails, which outlined any project concerns, provided process adaptations, and updated stake holders on progress towards project goals.

Measures

The PI collected weekly data from the DF and audited EHR charts. Weekly frequency was tracked for five weeks for measures including: number of discharges; number of GL/MDB dispersed; if SW indicated if a GL/MDB was needed; nursing distributed the GL/MDB and SPDP; nursing provided the patient with an opportunity to ask questions about the SPDP; and the frequency with which nursing correctly charted item distribution in the EHR.

Analysis

A simple frequency table was used to determine the percentage of times each item was performed correctly. The numerator was the number of times each item was completed with the denominator being the total number of patients discharged weekly. Range and standard deviation were calculated for the data set. Descriptive data were used for the number of patients discharged and the number of GL/MDB dispersed. Qualitative data included comments about the SPDP and process.

Ethical Considerations and Data Management

The project underwent MSU institutional review board (IRB) approval and received a designation of quality improvement with low harm risk to patients. The site management

approved the project and the forms committee approved the SPDP, thus no further approval was required by the site. All staff could choose not to participate. Data collected was deidentified and no protected health information was collected for this project. Data integrity was maintained by storing results in an Excel spreadsheet on a password protected laptop.

Results

Progress towards each goal showed steady improvement over the project timeframe. At the end of week one it was found that management updated the wrong nursing note template in the EHR. This caused numerous inconsistencies in charting for the 13 discharges in week one. However, the DF was marked correctly 100% of the time for the need to provide a GL (n=1) or MDB (n=3); the GL was not marked as dispersed while 2 of the MDBs were marked dispersed, resulting in a 50% (2/4) completion for this DF metric. Upon following up with nursing in person, it was found that the GL had been provided, but not marked on the DF and one patient had refused the third medication disposal bag. Of note, charting was correct on the GL/MDBs that had been provided (n=3) but no charting was done to indicate if a GL or MDB was not needed, resulting in a charting metric of 3/13 (23%). The SPDP was marked on the DF as given and discussed with patient or family/friends on 10/13 (76%) discharges, but only charted as given and discussed on 2/13 patients (15%). The template problem was corrected by management before beginning week two.

In week three, the old DF was used by social work and nursing in error for one patient. This was believed to have been corrected by again searching the unit for any old DFs, disposing of them, and sending an email to all staff with education to further avoid the error. However, the problem re-occurred in the final week. Time constraints for this project prevent providing

updates on the success of additional interventions; however, the unit was again searched for outdated forms and the occurrence was communicated via email with the discharge coordinator given the responsibility for future form copies.

At the five-week project end, 100% of patients or their families received the SPDP and 100% of charts in the EHR indicated dispersal of the packet. However, the use of one outdated DF skewed the data in week five, particularly as there were only six discharges. This affected DF measures including: the need for a GL/MDB, the indication that the SPDP had been provided, as well as time for discussion of the packet. Of note, the EHR did show dispersal of the SPDP and the need for a GL/MDB were correctly charted in the EHR, indicating the steps had been performed correctly except for accurately marking the internal DF checklist. Figure 3.2 and Figure 3.3 below show completion of the DF for key metrics including GLs, MDB, and the SPDP and subsequent charting for the five-week project period. Data in week five reflects the incorrect use of the outdated DF.

Figure 3.2. Gun Locks and Med Disposal Bags by Week

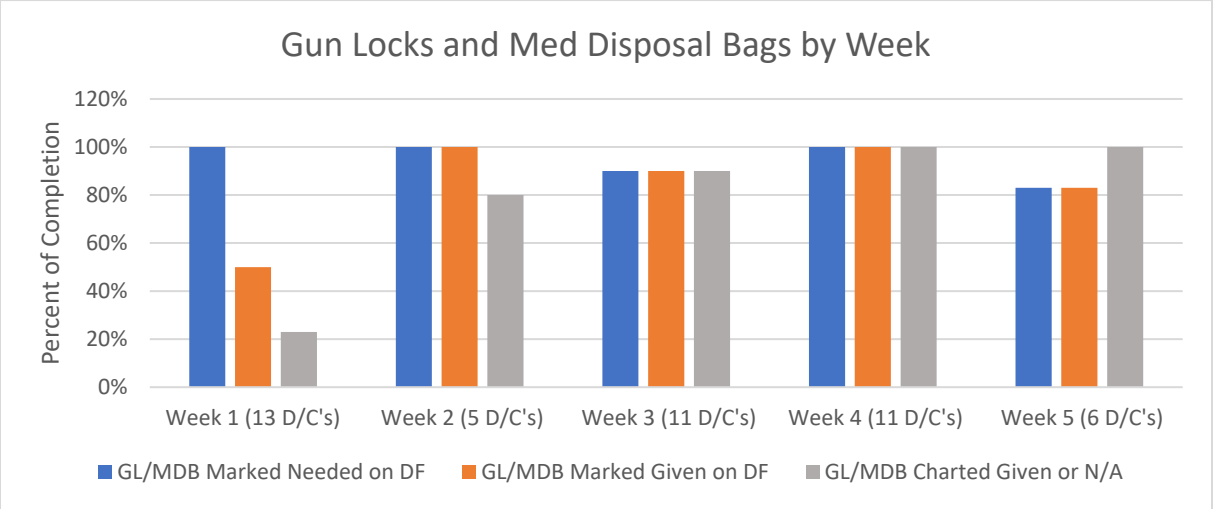
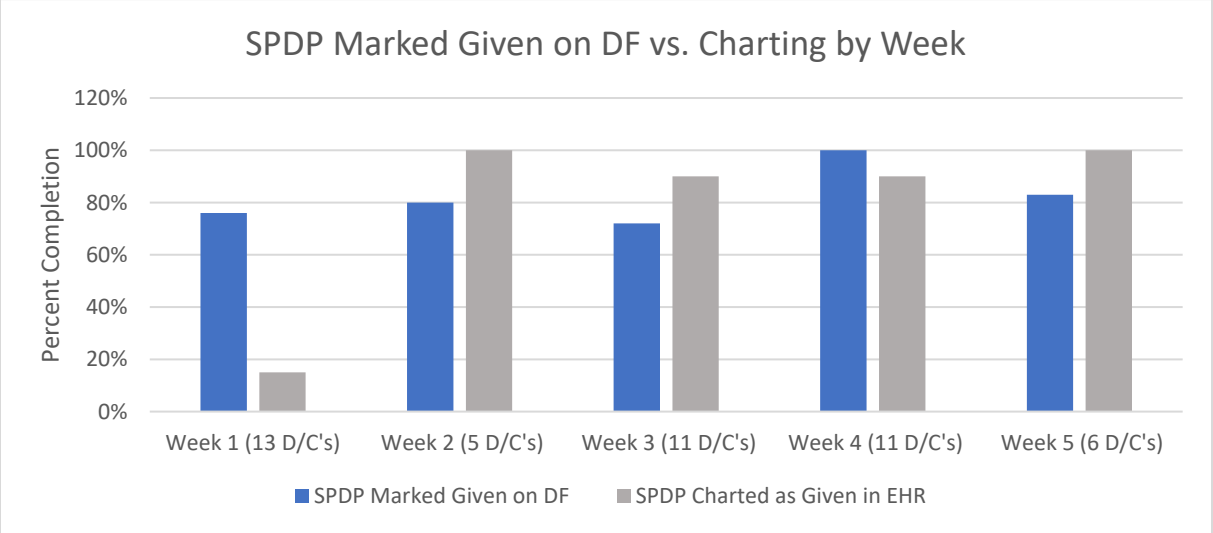


Figure 3.3. SPDP Marked Given on DF vs. Charting by Week



Throughout much of the project the DF was inconsistently marked by nursing. On two separate occasions nursing erroneously marked the SPDP as not given in the EHR; upon following up in person with nursing it was found that it had been provided, but incorrectly charted even though the correct template was used. Figure 3 above shows how this affected charting data in week three and four. These issues were investigated and remediated through

discussions with the nurses involved and emails were sent to all staff regarding errors to avoid future mistakes. The reasons for these errors were cited as nursing being busy or rushed and the process being new. In week three, a float nurse did not use the EHR discharge template, but did mark the DF and charted correctly in the EHR. This was discussed with the clinical nurse manager who noted the float nurses do not have current access to the EHR discharge note templates, but that the nurse manger would ensure they had access.

Nursing indicated the patient was allowed time for questions or comments for 100% of the patients who were marked as receiving the SPDP. However, the procedure for follow-up calls and the person making these calls changed during the project implementation period and follow-up calls to patients did not include an element of questions about the SPDP. In stakeholder discussion, it was noted that follow-up call procedures were in flux and time constraints were an issue, which were not identified in project development. Additionally, nursing did provide a time for patients to ask questions or make comments and staff were provided an option to write gathered comments on the DF. Staff were also surveyed verbally and through email about necessary changes to the packet at project start and end. One verbal suggestion was made to include a statement on the SPDP that indicated the risk of suicide remains high after discharge; this was added to the packet prior to the start of the project and no further suggestions for process or documentation changes were obtained. Over the five-week course of the project there were 46 discharges with 2/46 GL's (4%) and 7/46 (15%) MDB distributed; eight MDB were marked needed by SW but a patient refused it in week one when offered by nursing. Table 3.1 shows progress towards goals on marking the DF, the number of GL/MDB needed, and charting over the five-week period for each metric.

Table 3.1. Discharge Form Completion Percentage by Week

Discharge Form Completion Percentage by Week							
	Week 1	Week 2	Week 3	Week 4	Week 5	Range	SD
# of D/C's	13	5	11	11	6		
GL/MDB Marked Needed or N/A	100% n = 13	100% n = 5	90% n = 10	100% n = 11	83% n = 5	83-100% n = 5-13	7.79%
# of GL/MDB Indicated Needed	1 GL 3 MDB n = 4	0 GL 0 MDB n = 0	0 GL 1 MDB n = 1	0 GL 3 MDB n = 3	1 GL 1 MDB n = 2	n = 0-4	1.58
GL/MBD Marked Given or N/A	50% n = 2	100% n = 5	90% n = 10	100% n = 11	83% n = 5	50-100% n = 2-5	20.63%
SPDP Marked Given	76% n = 10	80% n = 4	72% n = 8	100% n = 11	83% n = 5	72-100% n = 4-11	10.78%
DF marked Pt. Time for Questions	76% n = 10	80% n = 4	72% n = 8	100% n = 11	83% n = 5	72-100% n = 4-11	10.78%
Charting of SPDP and GL/MDB Percentage by Week							
SPDP Given/Discussed	15% n = 2	100% n = 5	90% n = 10	90% n = 10	100% n = 6	15-100% n = 2-10	36.12%
GL/MDB Given or N/A	23% n = 3	80% n = 4	90% n = 10	100% n = 11	100% n = 6	23-100% n = 4-13	32.17%

Discussion

LMR, involving family and friends, and providing access to supportive resources are interventions endorsed by the National Action Alliance for Suicide Prevention (2019; 2020). Providing guns locks with LMR counseling improves safe gun storage practices (Shanessa et al., 2004). This project demonstrated that an educational suicide prevention packet can be used to ensure LMR information and supportive resources are consistently provided for each patient discharging from the inpatient psychiatry setting. Providing GL and MDB aided in efforts to improve safe gun storage practices and to reduce or eliminate access to excessive dangerous medications, while mitigating financial barriers to obtaining such LMR resources. The project

also succeeded in ensuring information on supportive resources in the community were provided to caregivers, further diminishing the gap between evidence and practice.

The process change was well received by staff and patients, as numerous staff commented verbally and through email on how helpful the packet was and the project's positive patient impact. Nursing staff verbally indicated they felt good about having a resource for patients and that the SPDPs were helpful in discussing aftercare needs with patients, family, and friends. Table 3.2 summarizes qualitative feedback by role and stakeholder report; recommendations were discussed with stakeholders in a post-project presentation.

Table 3.2. Qualitative Project Feedback and Suggested Change

Team Role	Feedback	Future incorporation
Nursing	**Verbal Comments** • "I feel good about having something to talk to patients about" (SPDP) • "It helps to have something to go through with patients" (SPDP)	**Recommended:** Make sure par levels documented by nursing and executive assistant notified, track any comments from patients and ideas from nursing on process/SPDP improvement.
Social Work	**Verbal Comment** • "it's so great to be able to offer gun locks."	**Recommended:** Continue offering GL/MDB, alter SPDP and DF to reflect process changes.
Provider	**Verbal Comment** • "This project is so important; it actually makes a difference." **Emailed Comments** • "STRONG work, this is just great!" • "This is such a great project! Great job! And very impressive!"	**Recommended:** Provide any future ideas for process and SPDP to nurse manager and social work director.
Patient/Family	Nursing verbally reported that patients voiced it was helpful to have the SPDP and others were pleased to receive a free GL/MDB. Unfortunately, no quotes from patients or their family and friends were provided by nursing or social work.	**Recommended:** Staff collect any future comments from patients/family/friends for alteration of the SPDP by the social work director.

Several issues impacting outcomes were unanticipated, such as the wrong EHR template in week one, the DF being marked incorrectly, or the outdated DF being used in error. The nursing documentation template was quickly corrected at the end of week one. It is possible that with a longer timeframe for data collection the other issues would self-correct as staff grew more comfortable with the new process, potentially eliminating mistakes when in a hurry. It is important to note that while the internal DF goals in week five did not reach 100% completion for all measures, this was due to there being one old DF; all other DFs in that week had 100% accurate completion. A project success included charting was correct on 100% of charts, thus the patients received the intended necessary care. Additional PDSA cycles and a longer data collection time would be needed to determine if DF issues persisted.

While the aim of this project was to ensure all patients received a SPDP and a GL/MDB when needed, the overarching goal was to prevent suicide in the immediate post-discharge period. No discharged patients committed suicide during the project time frame. Stakeholders plan ongoing monitoring of post-discharge suicides with a goal of no patient suicides within the first month after discharge. As suicide is relatively infrequent when compared to the number of patients who are discharged, tracking for this metric will be conducted by site management and is long term.

The strong staff support and enthusiasm for the project supports long-term sustainability. Additionally, the SPDP will remain available to print and modify if needed. A PAR stock was created to trigger the executive assistant to contact the health department and request additional LMR supplies. Initial concern that the health department would not consistently provide items as

requested were resolved as when more MDB were needed they were promptly supplied, along with a note expressing excitement for distribution and ongoing project support.

Limitations

The start date of this project was later than anticipated due to unexpected delays in SPDP approval by the organization's Forms Committee. This delay caused the planned time frame of six weeks to be shortened to five weeks, affecting the time available for another PDSA cycle and additional data collection. The major barrier to reaching 100% for all goals in week five was the presence of one old DF out of six discharges, skewing the data to 83% compliance. The issue with outdated DFs re-emerging is time limited, as they are no longer being printed, and it is likely that further data collection would result in DF metrics more consistent with project goals.

Patients or their family and friends were allowed time to ask questions or make comments about the SPDP at the time of discharge. However, the plan of soliciting feedback at scheduled post-discharge calls did not occur due to ongoing changes in staff responsibilities during the project's timeline. While feedback received at discharge was supportive of the SPDP and no suggestions for change were made by patients, it is possible that completion of the questioning during call-backs would have resulted in suggestions for change. The SPDP can be modified and future responsibility for the packet was assigned to the director of social work, allowing a sustainable means of further packet adaptations.

The site for this project had an existing discharge procedure which included a checklist, thus allowing project process adjustments to the existing checklist. This likely had a positive impact on the speed with which staff adapted to the new process; however, limits the generalizability of these results.

Recommendations

The SPDP packet had to be created and approved in a short time frame prior to project start, which limited time for early comments and feedback, along with patient and caregiver input. Staff were provided access to the packet during new process education held in mid-December 2023 and the project was completed within the first week of March 2024. It would be beneficial for future SPDP creation to occur over a longer period to further evaluate efficacy and include the patient and caregiver's perspective. Parts of the packet were created using publicly available resources with permission and original content was created with the CDC (2023) guidelines for language and format. The use of the packet and dispersal of gun locks and medication disposal bags should be expanded to include adolescent patients, as they are another high-risk group, the packet is not age specific, and LMR is necessary in adolescent populations. Additionally, the local health department was instrumental in improving this project by supplying free GLs and MDBs. Organizations looking to replicate this project should consider using publicly available printed materials and partnering with their local health department and any supportive community organizations to obtain local resources.

The National Action Alliance for Suicide Prevention (2019) has several other validated recommendations for reducing suicide risk in the post-discharge period including:

- Callbacks to patients.
- Rapid outpatient follow-up, preferably within 24 hours.
- Introducing the outpatient provider to the patient while they are still hospitalized.
- Ongoing written caring contacts.

While initiation of these additional interventions was outside the scope of this project, they are a helpful way of reducing risk and should be explored for future quality improvement implementation.

Conclusion

Completed suicides have a serious effect on family and friends of the deceased, as well as on healthcare providers caring for the individual. Family and friends close to the person are at risk for suicide themselves, and can experience prolonged grief, depression, and post-traumatic stress disorder (Cerel et al., 2016). Furthermore, loss of a patient to suicide can be one of the most difficult events in a healthcare provider's career, potentially resulting in burnout, anxiety, depression, and legal consequences (De Berardis et. al., 2018). Negative emotional experiences can put nurses and providers at risk for suicide and negatively affect the mental healthcare system. The impact of one suicide goes beyond immediate family, close friends, and healthcare providers. One study estimated as many as 135 individuals are affected by each suicide (Cerel et al., 2016); the far-reaching effects of suicide highlight the crucial need for effective suicide prevention interventions.

Every suicide is a tragedy and given the substantial risk of suicide in the immediate post-discharge period, it is imperative that inpatient psychiatric units take proactive measures to reduce this risk. This project succeeded in the goal of creating a sustainable standardized process to ensure all patients discharged from inpatient care, and their social supports, had access to LMR education and supportive resources. Health disparities were reduced by providing a GL/MDB, when needed, to those who might not be able to afford them. Sustainability of the

project is supported by a high level of engagement and positive feedback from nursing and SW, strong support from site management, and the health department supplying free GL and MDBs.

Suicide is a complex and enduring multifactorial problem spanning human history. While it is important for psychiatric units to take every possible step to reduce suicide risk post-discharge, systemic problems that affect suicide rates must also be addressed. Stigma around mental illness persists, despite an increasing awareness of the pervasive nature of mental health problems and the need to treat them; this is only one of the many factors that are amenable to societal change. The nursing ethos includes a strong desire to affect health problems at a societal level. Advanced practice registered nurses (APRNs) working in mental health care are well positioned to lobby for societal change, increase awareness of suicide and mental illness, and continue to lead care changes where they practice.

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CHAPTER FOUR

ADVANCED NURSING ESSENTIALS REFLECTION

Since 1986, the American Association of Colleges of Nursing (AACN; 2021) has published essential core competencies for professional nursing education at both the baccalaureate and advanced practice level. The competencies discussed here refer to those intended for the advanced practice registered nurse (APRN). The essentials include 10 domains integral to the nursing profession and reflect the unique quality and characteristics of nursing care. Attainment of these core competencies ensures APRNs will provide quality patient care that reflects the nursing ethos. The following discussion provides examples of how the education at Montana State University (MSU) exemplifies these essential core competencies to produce caring and knowledgeable APRNs.

Domain 1 refers to the APRNs knowledge for nursing practice. To meet this essential, the APRN must be able to translate knowledge from nursing science and other disciplines into practice. They must be able to integrate foundational and specialty knowledge into clinical decisions that are systematic and ethical. This essential refers to the APRNs ability to be a well-rounded and competent practitioner (AACN, 2021, pp. 27).

There are numerous courses within the MSU curriculum that meet this essential. Students study advanced pathophysiology and pharmacology, learn advanced physical assessment skills, and study the essentials of diagnostic reasoning as a foundational basis for competent practice. For the psychiatric APRN students, they continue their pursuit of this essential with psychiatric specific classes which include Intro to Adv Psychiatric Mental Health Nursing, a course that teaches the art of the initial psychiatric interview and diagnostic reasoning for mental health

conditions. Students learn psychiatric interviewing through reading Carlat's "The Psychiatric Interview" and practicing the skills taught in the book with classmates. Carlat (2021) teaches the student communication skills that allow them to build a therapeutic alliance. For example, some of the skills presented include normalizing questions that decrease embarrassment about a behavior (such as cutting oneself), and symptom exaggeration, wherein the practitioner suggests a frequency or severity of the behavior over what they think the patient is doing; the practitioner might ask if the patient is drinking a six pack of beer every night, so the patient feels comfortable disclosing they drink three or four drinks a night. Students also read and discuss Morrison's "Diagnosis Made Easier," a text that helps new clinicians with proper diagnosis of psychiatric illness. Morrison (2014) provides tips on interviewing and distinguishing psychiatric illnesses, for example bipolar versus borderline personality disorder. The text also discusses medical mimics for psychiatric illness at length.

Students then learn about psychiatric medications in Adv Psychopharmacology II, and psychiatric specific pathophysiology and diagnostics in Adv Clinical I. In Adv Clinical II and III, students learn about communication techniques and therapeutic modalities such as cognitive behavioral therapy, family systems theory, group therapy, etc. In Adv Clinical IV students learn about legal aspects of advanced practice such as the Tarasoff duty to warn, mandatory reporting requirements, and the limits of patient confidentiality, among others. Throughout the clinical courses I-IV, students gain real world knowledge and experience through clinical experiences with patients under the supervision of a licensed mental health care provider. Students also complete and discuss case studies with peers in each clinical course. These case studies and the discussions help the student learn how to use clinical judgement and to translate theory into

practice. Students also get the opportunity to conduct two full psychiatric interviews, one with another student and one with an actor, providing the opportunity to practice their skills. These courses, assignments, and clinical experiences prepare the MSU students to meet essential 1.

Domain 2 in the competencies relates to person-centered care. Person-centered care reflects holistic care that is individualized to the patients' preferences and healthcare needs. Domain 2 requires the APRN to build caring relationships with patients that effect positive outcomes. The APRN must excel at advanced communication skills and techniques, as well as use a variety of modalities for diverse populations. For example, Montana has a high number of native Americans. This allows the APRN to be proficient at facilitating difficult conversations and eliciting sensitive information to formulate a holistic plan of care that considers the patients personal biopsychosocial needs (AACN, 2021, pp 29).

The education at MSU for psychiatric APRNs excels at meeting this competency. Students begin learning these skills in the course titled Intro to Adv. Psychiatric Mental Health Nursing. In this course, students learn the art of the initial psychiatric intake interview. Students learn communication techniques that allow the APRN to get a comprehensive clinical picture of the patient that includes their relevant psychiatric history and presenting concerns. Communication skills include those listed above for essential 1, as well as ways of improving patient recall, anchoring questions to memorable events and using questions with specific examples. Students also learn how to change topics smoothly, ways of drawing out a reluctant patient, techniques for overly talkative patients, and ways to spot someone who is malingering.

In Adv. Clinical II and III, students learn about the various therapeutic modalities and for which psychiatric illnesses they are most helpful. For example, cognitive behavioral therapy

includes techniques for examining and reframing cognitive distortions such as overgeneralization or mind reading. These skills can be helpful for patients with depression and anxiety, as there are often cognitive distortions in these illnesses which worsen the symptoms. Students also learn basic techniques within the various therapeutic schools of thought. This includes therapeutic modalities in individual, group, and family domains. Students learn communication skills which can be used to help motivate the patient towards their personal goals for positive change, such as with motivational interviewing. These techniques and others taught prepare the student to help the patient improve wellness and self-care. These courses ensure the MSU psychiatric APRN graduate excels at the skills required for domain 2.

Domain 4 is "scholarship for nursing discipline." (AACN, 2021, pp.36) This essential discusses the importance of evidence-based practice and the ability to critically evaluate and include research in practice. It also encompasses including research and evidence in nursing led quality improvement (QI) innovations and dissemination of nursing knowledge to improve practice across the profession. Domain 4 requires the APRN to have a working knowledge of the internal review board process (IRB) to obtain approval for QI projects prior to implementation. The MSU curriculum provides a well-rounded knowledge of research and quality improvement and dissemination throughout the program.

In the courses Evidence Based Practice I and II and Statistical Applications, students learn the fundamentals of quality research and the different levels of evidence produced by each of the study designs, as well as statistical tests used. Students learn to evaluate research critically and practice these skills by completing a review of literature using Polit & Beck's (2021) evidence pyramid. I wrote a review of the literature about the efficacy of 3,4-

methylenedioxymethamphetamine (MDMA) assisted psychotherapy, along with a review of the literature related to suicide prevention after discharge from inpatient care.

Domain 4 also relates to nursing led evidence-based QI projects and the dissemination of knowledge from QI projects. Students learn how to evaluate a healthcare system, to discern needed changes, design and implement a change based in the best available evidence, and disseminate QI results via publication or other modalities like conferences. In Design of Healthcare Delivery Systems, the student learns the tools needed to evaluate a system at the micro-, meso-, and macro levels. Tools such as spaghetti diagrams, swim lane charts, process diagrams, and fishbone diagrams are taught. To practice these skills, I evaluated lab sample turnaround times using a process diagram to determine why mistakes were being made and leading to delays. In Program Planning & Evaluation the student learns to evaluate a problem using the Institute for Healthcare Improvement's "Model for Improvement" method and tools. Students learn how to implement a change, evaluate progress towards a goal, and how to remediate problems that arise. During this course, students create a hypothetical evidence-based practice change and design an implementation program. For example, I created a hypothetical practice change to improve advanced care planning in primary care. Students also take a writing course, Scholarly Project Seminar, which teaches the student how to write in a scholarly voice and how to submit writings for publication. In DNP Scholarly Project, students gain real-world experience in designing and implementing a practice improvement that is evidence-based. Spanning two semesters, this course provides a comprehensive experience that ties together earlier courses where the student learned to evaluate research with those that reviewed how to assess a system of care and implement a change. I assessed a system of caring using a fish-bone

diagram to explore root causes and implemented an evidence-based QI practice change to decrease suicide risk for patients discharged from an inpatient psychiatric unit. Prior to implementation, the practice change protocol was submitted to the IRB, and after completion a scholarly paper was written to disseminate the knowledge learned. These courses and the culmination of learning with a real-world practice change are well designed to meet the requirements of scholarly pursuit and practice improvement outlined in essential 4.

Essential 7 challenges the APRN to analyze systems of care and lead change that addresses complex health problems impacting diverse populations to ensure optimal care (AACN, 20201, pp. 44). The APRN must have a strong foundation for understanding the financial impacts on care to promote change that prevents or reduces inequity in care. The APRN needs to design and innovate change that impacts the healthcare system to reduce racism and inequity.

To meet these challenges, the MSU curriculum provides the student with tools such as spaghetti diagrams, swim lane charts, process diagrams, and fishbone diagrams to systematically evaluate systems of care. In addition to evaluation of the system, the student is provided a strong foundation in the financial underpinnings of the healthcare system. In Finance & Budget of Healthcare Systems, the student learns about healthcare finance at the micro-, meso-, and macro-system levels of care and the impact of finances across the continuum of care. Students are tasked with creating a hypothetical budget for a new program or unit to improve quality of care. I wrote a financial proposal to start a first episode psychosis program at the hospital. This practice change would improve outcomes for anyone experiencing a first psychotic illness, which includes a diverse group of patients as all ethnicities can experience psychosis.

Meeting essential 7 requires not only an understanding of finances, but a firm grasp of inequity in the US healthcare system and the impacts of social determinants of health and a long history of systemic racism. In the course Vulnerability & Healthcare of Diverse Communities, the student learns about issues impacting the health of minorities and diverse communities. The student gains an appreciation for the importance of social determinants of health and the need to eliminate inequities in the healthcare system to improve population health. For example, I examined patients with serious mental illness (SMI) to gain a deeper understanding of systemic issues effecting care which included a lack of mental health providers and being unhoused. I proposed two potential changes to the system that could affect the health of the SMI population. First, providing education to high school students about the risk of marijuana use and the development of psychosis, and secondly a homeless outreach project to increase access to care by improving Medicaid enrollment in the unhoused SMI population.

In the course Ethics, Law, Policy, & Healthcare, the student learns about legal and ethical challenges and policies that affect the health and safety of vulnerable populations. For example, students explore the Flint water crisis, and examine the systemic racism and policies that led to a health crisis in a vulnerable, primarily minority community. By understanding finance and budget, challenges facing vulnerable and diverse communities, and the legal and ethical concerns impacting policies, the MSU prepared APRN is well positioned to be an advocate for positive change in these domains, meeting the requirements of essential 7.

Essential 10 relates to the APRNs development as a leader and challenges the student to be a resilient individual who can adapt to change and ambiguity (AACN, 2021, pp. 53). APRNs must be lifelong learners and have ongoing self-reflection. They must have strong leadership

skills and be proficient in asserting their skills in professional and personal contexts to advocate for patients and the nursing profession.

The MSU curriculum includes the course Advanced Nursing Leadership and Roles which teaches the student about different leadership qualities and styles and challenges the student to reflect on their own strengths and weaknesses. Through this course I learned I have a primarily democratic leadership style but can also have an autocratic or laissez-faire style when the situation warrants a shift away from a democratic style, such as in an emergency (autocratic). Students also gain real-world experience as leaders during their DNP scholarly project courses; students must oversee planning and implementing a practice change and lead a team of stakeholders at their project site. These courses combined with the overarching ethos in the MSU program compels the APRN student to become a life-long learner and leader in the profession. Self-reflection is key to leadership as the student must examine personal beliefs and strengths to become a leader.

For my own life-long learning, I plan to stay current on psychiatric healthcare issues by attending conferences such as the Neuroscience Education Institute's yearly conference and by maintaining membership with valid psychiatric resources, such as the Carlat Psychiatry Report. I am also passionately interested in helping patients with SMI and am hoping to someday start a first episode psychosis program to improve the lives of patients living with serious psychotic illnesses. This pursuit will enhance my identity as a psychiatric nurse practitioner, and I will pursue additional education to obtain a deeper understanding of psychopharmacological agents to treat these illnesses.

The essentials are an important means of communicating and understanding the critical skills needed to be a successful APRN who is capable of excellent patient care and strong leadership within the profession. The essentials are ingrained in the MSU curriculum, and students are provided numerous opportunities to attain proficiency in these areas. MSU graduates are well positioned to become a powerful force in improving population and individual health through leadership and the promotion of change within the healthcare system.

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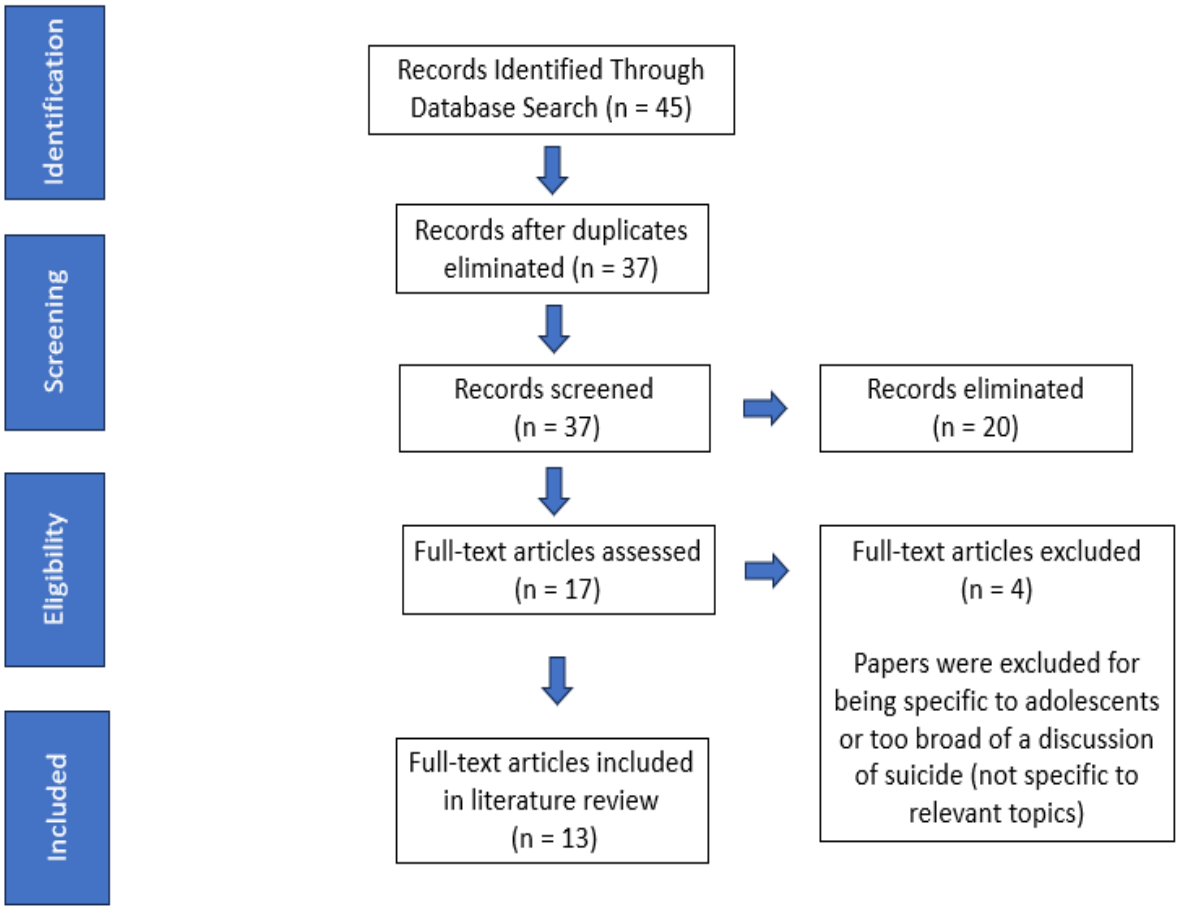
APPENDICES

APPENDIX A

PRISMA

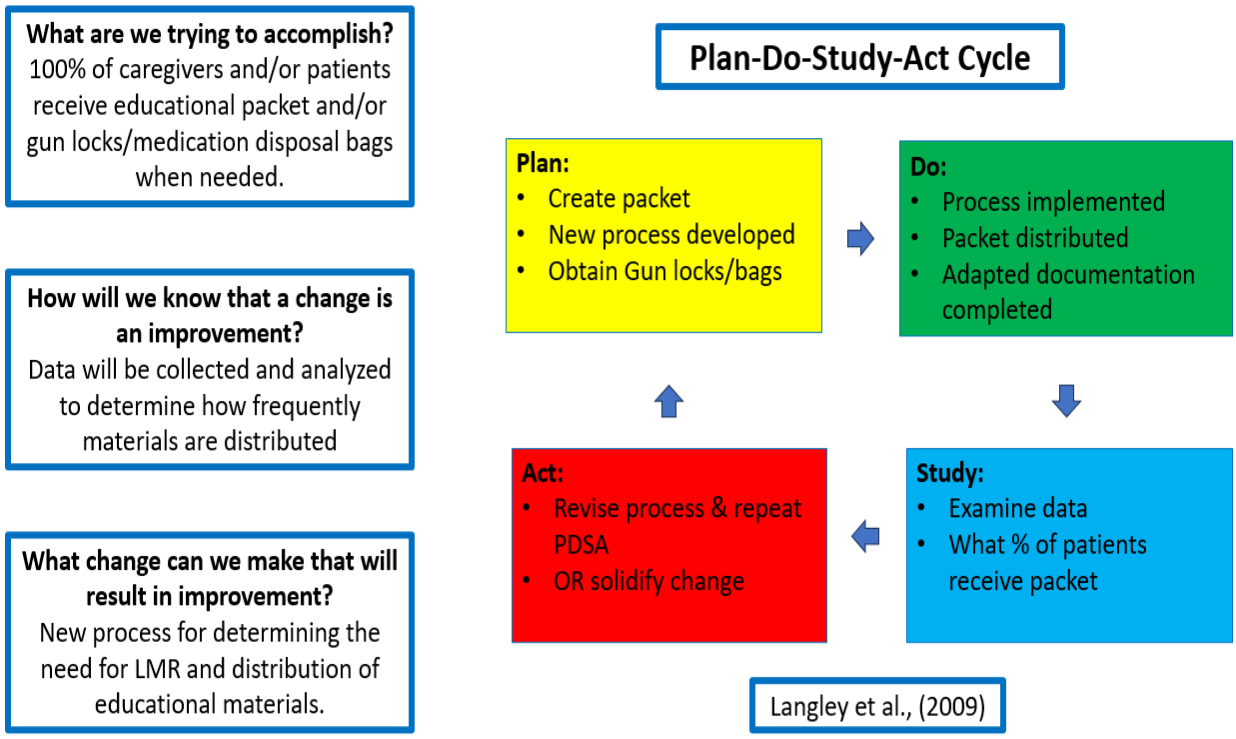
Figure A1. PRIMSA



APPENDIX B

MODEL FOR IMPROVEMENT

Figure B1. Model for Improvement



APPENDIX C

DATA COLLECTION TALLY SHEET

Figure C1. Data Collection Tally Sheet

Week:	**# of discharges:**		**# of locks used:**	**# of bags used:**
Did SW mark if a gun lock was needed or not?	YES	NO		
			Was a lock distributed if it was needed?	YES / NO
Did SW mark if a medication disposal bag was needed or not?	YES	NO		
			Was a medication disposal bag distributed if needed?	YES / NO
Was an educational packet given to a caregiver and/or patient?	YES	NO		
			Was the pt/caregiver given the chance to ask questions?	YES / NO

Was the packet and/or gun locks and/or medication disposal bag charted properly by nursing in the EHR?	Packet		Gun Lock		Medication Bag	
	YES	NO	YES	NO	YES	NO

Comments from family/friends or patients:
Ideas from staff: