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Improving a Discharge Process to Decrease Readmission Rates

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Chapter 1: Introduction and Microsystem Assessment

Hospital readmissions are a nationwide phenomenon plaguing acute care settings across the U.S. (U.S. Centers for Medicare & Medicaid Services [CMS], 2017). The CMS (2017) defines a readmission as an occurrence in which a patient who has been discharged from an acute care facility is readmitted within 30 days. Readmissions indicate a progression of the patient's pre-existing or chronic conditions, independent or interdependent of the initial admission diagnosis (CMS, 2017).

While decreasing rehospitalization rates has long been a goal of hospitals and the U.S. government, doing so has received more focus after the enactment of the Affordable Care Act's Hospital Readmission and Reduction Program [HRRP] (CMS, 2017). Under the new law, hospitals are financially penalized for having too many readmissions, especially among Medicare beneficiaries (Alper, O'Malley, & Greenwald, 2017). One possible reason for hospital readmissions is patients' failure to follow discharge instructions after hospitalization (Alper et al., 2017). For example, patients' inability to keep follow-up appointments with their providers or other healthcare professionals after hospitalization could delay necessary treatments that could prevent disease worsening. The purpose of this paper is to describe a quality improvement (QI) project with the primary objective of improving a discharge system to reduce readmissions in a clinical microsystem (Alper et al., 2017).

The Clinical Microsystem

This project at the microsystem is a 24-bed inpatient unit within an acute care community hospital. The staff on this unit care for patients suffering from non-critical medical conditions who also require specialized inpatient psychiatric treatments. Care providers on this unit treat patients for their medical and mental health conditions concurrently. Most of the time, the unit is

full to capacity with more patients coming from other units, outlying hospitals, emergency departments (ED), and community agencies. These patients are admitted with highly complex medical and mental health histories.

The most common diagnoses treated on the unit are schizophrenia, schizoaffective disorder with hyperglycemia, schizophrenia with end-stage renal disease, depression, psychosis, and catatonia. Approximately 50% of the patients are diagnosed with schizophrenia, followed by depression. While the average length of stay (LOS) is 15 days, many of these patients remain in the hospital for an extended period, often 75 days or more. Some patients are extremely violent, requiring restraints or seclusion, while others are catatonic and do not interact with others. During hospitalization, social workers and case managers are present to ensure all patient needs are met. When the patients are stabilized, they are discharged to their home or a subacute rehabilitation center (SAR). These patients require extensive community resources to be able to live and function in the community after discharge.

A patient has to meet certain criteria for admission to the unit including having a psychiatric condition that is treatable during hospitalization. Patients not meeting this criterion can be diverted to regular units. Patients with dementia, for example, can be cared for on the older adult unit. Patients can come from the ED, be transferred from other units, or be directly admitted from different hospitals. Once admitted to the unit, the patient is assessed by several people including the nurse, psychiatrist, social worker, and case manager. A medical doctor is consulted when physical ailments need to be addressed.

A decision for discharge usually begins during rounds when the psychiatrist and the medical team deem the patient stable and ready to return to the community. Discharge coordinators/care managers are heavily involved in the disposition, contacting families and

community resources. The registered nurses' (RN) role during discharge is to explain the discharge instructions to patients, family members, and caregivers. The unit uses a routine discharge technique that includes a computerized summary of the patient's hospitalization, prescribed medications, follow-up appointments, and discharge diet/activity.

The discharge process plays an important role in patient outcomes. The process involves several interdisciplinary team members who spend a considerable amount of time to prepare patients to go home safely. Despite the depth of the old process, the unit's readmission rates remained higher than desired.

Practice Problem of Microsystem

This QI project addressed the microsystem's clinical practice problem of high readmission rates. These monthly readmission rates, which fluctuate from 0–16.5%, have been increasing. The unit's goal is to have all-cause 30-day readmission rates below the 10th percentile (this is the desired rate). One contributing issue that may be amenable to change is how these complex patients are prepared to manage their symptoms once they are discharged to their homes (Edelman, 2016). The unit staff used a standard discharge instruction form that offered incomplete discharge instructions. The unit case managers offered patients, families, and caregivers standard discharge instructions, stated in a brief paragraph, advising them to call emergency lines, the mental health department, and primary care doctor (PCP) with concerns. The instructions did not include specific symptoms to look out for at home or sufficient healthcare professional phone numbers to call when issues arise. Recent QI data from the current facility indicated that several patients were readmitted to the unit due to their inability to recognize "red flags" or their decision to contact emergency services instead of first calling their primary doctor or other medical professional.

Research studies have addressed the link between discharge instructions and readmissions. Several research studies have indicated that discharge planning's effectiveness and efficiency influence readmission rates (Henke, Karaca, Jackson, Marder, & Wong, 2017; Nurjannah, Mills, Usher, & Park, 2014). The Agency for Healthcare Research and Quality (AHRQ, 2013) has presented strong evidence that a comprehensive discharge process decreases readmissions. Results from studies on mental health readmissions also suggested that comprehensive discharge planning have the potential to increase treatment compliance by 25% and reduce readmissions by 35% (Mark et al., 2013). According to Alper et al. (2017), an ideal discharge instruction process should address common issues the patients might experience, including early warning signs of problems and what patients should do when they occur.

Conclusion

In summary, the microsystem identified the readmission rate as a measure that needed to be addressed. The literature supported the idea that readmissions can be decreased by amending the current discharge process. The complexity of the microsystem's patients necessitates a more thorough discharge process that can be used as a guide to accommodate their needs in the community. After a careful assessment of the problem, it was determined that the discharge process is in need of improvement, giving special attention to educating patients and families about the signs and symptoms of disease progression and specific actions to address them at home. This QI project's aim was to decrease readmission rates, an aim that coincides with the hospital's organizational goals for fiscal year 2018–2019.

Chapter 2: Literature Review

Introduction

It is crucial that healthcare practice changes be based on current evidence from the literature. Evidence-based practice (EBP) uses the most recent information to provide the best medical care to patients (Polit & Beck, 2017). EBP is an important aspect of nursing care, as it guides nurses to implement evidence-based interventions in their daily practice (Polit & Beck, 2017). The pivotal emphasis of EBP is the integration of evidence with multifactorial phenomena, such as the patient's values and preferences, as well as expert medical advice (Melnik & Fineout-Overholt, 2015; Polit & Beck, 2017). Study results indicate that implementing EBP results in improved patient safety, decreased mortality and morbidity, and reduced costs (Kripalani, Theobald, Anctil, & Vasilevskis, 2014). Although the practice of finding evidence for various interventions has become part of the modern clinical practice culture, study results indicate that many clinicians have not yet embraced EBP (Harris, Roussel, & Thomas, 2014)

Before embarking on this QI project to improve a discharge process to reduce readmission rates, the author conducted a literature review. The Institute for Healthcare Improvement (IHI, 2017) noted that avoidable, unplanned hospital readmissions could be significantly reduced by focusing on three major factors: enhancing care quality, improving care coordination in acute and outpatient care settings, and modifying the discharge processes. This QI project focused on the last factor—modifying the microsystem's discharge process, as it no longer met the demands of its highly complex patients, and offered several opportunities for improvement. Indeed, effective discharge planning is essential for these patients to ensure continuation of care from the hospital to the community. The purpose of this literature review

was to analyze current evidence to find information that could be used to address a critical clinical question: “In the adult population suffering from mental health and medical issues, how does using comprehensive discharge plans affect 30-day unplanned readmission rates compared to the routine discharge process?”

Methodology

A search of CINAHL Complete, Cochrane Library, PsychINFO and Google Scholar was conducted to find the most relevant research articles and systematic reviews published between 2013 and 2017. The keywords and search phrases used for the search were *psychiatric patients*, *mental health*, *hospital readmissions*, *discharge planning*, *unplanned readmissions*, and *patient discharge*. CINAHL generated 278 articles and Google Scholar produced more than 3,000. Due to their unique characteristics, finding articles pertaining to the unit’s patient population was particularly challenging. For this reason, articles from much earlier studies were included. Although most studies about hospital readmissions focused on the general medical clients, after reviewing them, it was determined that they provided information about reducing readmissions that could be applied to all types of patients. The literature review was divided into the following three categories: the consequences of poor discharge instructions, effectiveness of discharge instructions in reducing readmissions, and the components of effective discharge instructions. A summary of the literature review is presented in Appendix A. A synthesis of the review is discussed in the following sections.

Literature Review and Critique

Consequences of Poor Discharge Instructions

Poor discharge instructions have several negative consequences for patients and care facilities. According to Holland and Hemann (2011), the adverse consequences of poor patient

transitions are suboptimal health outcomes, worsening of the disease condition, medical errors, and unplanned hospitalizations, especially in older patients. These assertions are affirmed by Yam et al. (2012) who found that 40% of readmissions at a Hong Kong hospital were avoidable due to inadequate discharge planning and instructions. In a study evaluating the quality of discharge practices, Hortwitz et al. (2013) discovered several important missing features. For example, 40.4% of the patients did not fully understand the diagnosis, while 68.7% could not describe disease-related symptoms as explained in the discharge instructions. An additional 22.8% of the patients were unaware of a scheduled appointment included in the discharge summary. While patients 65 and older often said their discharge instructions were easy to understand and follow, when asked 40% did not know or understand their admitting diagnoses (Alper et al., 2017). Additionally, 54% of these patients were unable to remember discharge instructions about their follow-up outpatient appointments (Alper et al., 2017). These issues can be exacerbated by insufficient and poor discharge instructions.

Discharge Instruction's Effectiveness in Reducing Readmissions

Steffen, Kösters, Becker, and Puschner (2009) conducted a systematic review and meta-analysis to understand the efficacy of discharge planning interventions in patients with mental health issues. The review included 11 studies and more than 5,000 participants from around the world. Six of the studies were randomized controlled trials (RCTs), three were controlled clinical trials, and two were cohort studies in which participants were divided into intervention and control groups. The measured outcomes were readmission rates, treatment compliance, quality of life, and costs. Readmission rates in the intervention groups were 7%–25% compared to 15–46% in the control groups. In addition, intervention group participants were 47%–95% compliant with their outpatient treatments compared to 21%–76% in the control groups. In one study, hospital

and emergency service costs were reduced in the intervention group by more than \$3,000 per patient. However, the discharge planning did not affect the quality of life of individuals with mental health issues (Steffen et al., 2009).

In an integrative review, Nurjannah et al. (2013) took a more comprehensive approach to studying discharge planning in mental healthcare by including findings from qualitative and quantitative studies to cover a wide array of issues regarding evidence-based discharge planning within inpatient and outpatient settings. Major measures from the integrative review included the importance of communication in discharge planning; the effects of discharge planning on hospital readmissions and treatment compliance; the consequences of discharge planning in complex patients; and identification of patients' discharge planning needs. Four studies in the review highlighted communication as a crucial part of discharge planning for the psychiatric patient population. These studies indicated that communication between the social workers and the family was the most critical aspect in discharge planning, family engagement, continuation of outpatient programs, and initiation of referrals (Nurjannah et al., 2013). Similarly, Auerbach et al. (2016) noted that open and effective communication between healthcare providers and patients allows patients to question inconsistencies, ask questions, and get answers.

Other studies showed that the complexity of the patients' social and psychological conditions affected discharge planning. For example, a patient with three disorders is more likely to receive inadequate discharge instructions compared to a patient with only one or two conditions. While discharge planning also is directly correlated with a reduction in hospital readmissions, patients' quality of life remained unchanged (Nurjannah et al., 2013), mirroring the findings of Steffen et al.'s (2009) systematic review.

In a very large study involving more than two million patients and 4,000 hospitals across 16 states, Henke and colleagues (2013) studied the association between the quality of discharge planning and 30-day readmissions to the same hospital. The Healthcare Cost and Utilization Project's (HCUP) State Inpatient Databases (AHRQ, 2013) were used to identify patient characteristics and 30-day readmissions. In addition, the researchers used the mean of two measures from the Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS) to determine discharge quality. The quality of discharge planning was evaluated by assessing the patient's perceptions of being informed about what they should do if they need help after discharge and whether they perceived they had received written information about the types of symptoms or health issues to look for after discharge. The researchers analyzed patients rehospitalized within 30 days with one of the four health issues to determine the correlation between the patients' perceived quality of discharge planning and readmissions. The study's results showed that the quality of discharge planning directly correlated with lower 30-day readmission rates in patients treated with myocardial infarction, pneumonia, heart failure, and joint or hip arthroplasty. Additionally, readmissions to the same hospital were observed in hospitals with higher quality discharge planning. The strength of this study is its large sample, use of multiple sites and diagnoses, and analysis of the readmission data (Henke et al., 2013).

Gonçalves-Bradley, Lannin, Clemson, Cameron, and Shepperd (2016) reviewed thirty RCTs to determine the effectiveness of discharge planning in reducing readmission rates and decreasing LOS. They found that discharge planning reduced readmission rates in certain categories of patients. In particular, patients admitted with a medical condition who received discharge planning reported reduced readmission rates (221 per 1,000 patients) compared to those who did not receive discharge planning (254 per 1,000 patients). Overall, patients who

received discharge planning had lower readmission rates than patients who did not. A significant reduction in LOS also was seen in the experimental group; patients given discharge planning stayed in the hospital for an average of three days compared to five days or more for individuals who did not receive discharge planning.

Components of Effective Discharge Instructions

The discharge summary—a short synopsis of care received during patients' hospital stay from admission through discharge (Dean, Gilmore-Bykovskiy, Buchanan, Ehlenfeldt, & Kind, 2016)—is an important communication tool between the acute care doctor and primary care physician that promotes a safe care transition (Horwitz et al., 2013; Kind & Smith 2018). The Joint Commission (TJC, 2018) mandates that six components be included in all discharge summaries for hospitals operating in the U.S.: the reason for hospitalization, major findings, procedures used and treatment provided, patient condition during discharge, instructions to the patient and/or family, and the attending physician's signature (TJC, 2018). Although the majority of hospitals strive to adhere to these requirements, some omit at least one of these the components, jeopardizing patient safety (Kind & Smith, 2018). Similarly, Horwitz et al. (2013) found that some TJC-mandated were not included in the discharge summaries they examined for this study.

One of the most important discharge summary components is the patient/family discharge instructions. Alper et al. (2017) suggested that this component should be brief and contain valuable, critical information that patients/families/caregivers can use to manage symptoms after leaving the hospital. Auerbach et al. (2016) conducted an observational study to analyze different factors that may have contributed to preventable readmissions in a sample of 1,000 participants discharged from healthcare teaching facilities. The study's results indicated

that several variables could lead to preventable readmission: a short LOS, patients' inability to attend post-discharge appointments, ED staff members' decisions to release the patients, and patients' lack of knowledge about who to contact with questions after hospitalization. A poor understanding of who to call after discharge or when to go to the ED were strongly associated with avoidable readmissions. Furthermore, the findings indicated that 18.6% of the participants' readmissions could have been prevented (Auerbach et al., 2016).

Summary of Literature Review

Patients' discharge plan is designed to give them pertinent information that ensures they have the theory to understand what to do and whom to call when problems arise at home (Horwitz et al., 2013). There is strong evidence that substandard discharge planning can lead to patients' lack of understanding of the care plan after discharge and poor healthcare outcomes such as disease progression, hospital readmissions, and medical errors (Holland & Hemann, 2011; Horwitz et al., 2013; Yam et al., 2012). These studies were conducted with medical and older patient populations, making the findings not necessarily applicable to patients with medical and psychiatric issues. Nevertheless, for any hospitalized patient, the discharge summary is the main guide to ensuring a safe recovery at home.

Conversely, optimal discharge planning has been shown to improve patients' healthcare outcomes. Past and current studies, including RCT's, have consistently shown that well-designed discharge planning decreases readmissions and healthcare costs while increasing patient and professional satisfaction and medication compliance (Auerbach et al., 2016; Gonçalves-Bradley et al., 2016; Henke et al., 2013; Nurjannah et al., 2013; Steffen et al., 2009). Taken together, these studies provide strong evidence that effective discharge planning can help reduce readmissions. One strength of the included studies is the large samples that produced a great deal

of data. Because each RCT studied different interventions with inconsistent findings, it was challenging to identify which interventions were most effective.

Another common theme of the literature review articles was the fact that patients/families/caregivers lacked knowledge about the post-hospitalization care plan, especially whom to contact when or when it is appropriate to go to the ED (Auerbach et al., 2016). The literature review evidence suggested the need to institute a practice change at the microsystem to improve outcomes. However, the readiness of the acute care settings to transform current practice into a more effective process was often undocumented or unknown.

Although the studies in the literature review supported the importance of well-designed and comprehensive discharge instructions, there were inconsistencies in the evidence about how to incorporate and promote strong communication, a crucial aspect of the discharge process. Another weakness of the evidence is that it was not generalizable, as most studies were conducted with medical surgical patients, neglecting the mental health population. Lastly, most of the studies were conducted in large sample sizes, which could lead to measurement and sampling errors (Melnyk & Fineout-Overholt, 2015).

Chapter 3: Quality Improvement Framework

Implementing a successful, sustainable, and evidence-based QI project requires a strong framework to guide the planning and application of process change. Numerous QI frameworks are available to help clinicians transform EBP into daily clinical practice (Sales, Smith, Curran, & Kochevar, 2006). Depending on the nature of the project and current clinical practice, certain conceptual models or frameworks may not be suitable for a project implementation. This chapter discusses the IHI Model for Improvement (IHI, 2017) that guided this project's implementation.

The IHI Model for Improvement

The adoption of a QI model, in this case the IHI Model for Improvement, was necessary to address the problem of high readmission rates in the microsystem. This powerful model, developed by Associates in Process Improvement (API) to accelerate improvement, is used to create objectives and develop strategies to improve processes (IHI, 2017).

The IHI Model for Improvement two parts: three fundamental questions (asked in any order), and the Plan-Do-Study-Act (PDSA) cycle to test changes in real-life settings. The three questions in the first section are

- What are we trying to accomplish? (forming a team, setting aims);
- How will we know that a change is an improvement? (establishing measures); and
- What change can we make that will result in an improvement? [selecting changes] (IHI, 2017).

These questions are used to establish the context of the improvement program or project. The steps taken in the first section are forming the team, setting aims, establishing measures, and selecting changes. The QI team can be small or large, but it should be rich in diversity, representing different disciplines. The team then works together to establish the project's goals

or aims. The aims must be patient- and time-specific achievements. The team also is responsible for establishing measures that determine when the desired improvement has been achieved. Selecting ideas for change can come from the frontline staff or other people who have made related changes in the past.

The second part of the model, the PDSA cycle, guides the testing of a change to determine if it is an improvement (IHI, 2017). These cycle's four steps are described below.

Plan

The *Plan* step involves planning the test or observation including how to collect relevant data (IHI, 2017). To have a complete plan, the team must state the test's objective, predict what they think will happen and why, and develop a plan to test the change including asking and answering several crucial questions (Who? What? When? Where? What data should we collect?) (IHI, 2017). The improvement team will decide who will carry out the test, what kind of test will be conducted, when the test will be initiated, and where the test will occur. For this project, the team had to focus on collecting data on the number of high-risk patients receiving education on the admitting diagnoses or chief complaints at discharge, as these patients tend to have higher readmission rates. Additionally, there was a need to document and understand all the factors that contributed to the lack of education provided at discharge to predict what might happen with the planned changes.

Do

The *Do* step involves trying out the test on a small scale (IHI, 2017). For this project, this phase including training nurses how to educate patients on disease warning signs, testing their knowledge on several high-risk patients, and documenting issues and unexpected observations.

Additionally, all operational issues had to be addressed, including how to handle a patient who was readmitted due to a lack of knowledge about symptoms and how to address them.

Study

For the *Study* portion, the team evaluates the test by analyzing the data, comparing it to predictions, and summarizing what was learned (IHI, 2017). If the objective of increasing the number of discharging patients receiving the requisite education is unmet with the first test, the methods should be reviewed and refined to make the objective more attainable in the next test (ISixSigma, 2017).

Act

The *Act* phase involves refining the change based on what was learned from the test and planning the next test based on those lessons (IHI, 2017). If a test is successful, it can be expanded to a larger group. However, if it does not work, it is revised, initiating another PDSA cycle. This QI project entailed completing several tests and rapid PDSA cycles until the project aim was achieved (Harris, Roussel, & Thomas, 2014).

Conclusion

Among various QI frameworks, the IHI Model for Improvement is a powerful tool that is deeply rooted in setting aims, establishing measures, and choosing changes. The model—incorporating the PDSA cycle where changes can be tested, studied, modified, and adopted—proved to be the most suitable for the current QI project.

Chapter 4: Clinical Protocol

Clinical Nurse Leaders (CNL) implement EBP at the bedside to improve nursing practice and patient outcomes (Harris et al., 2014). The CNL student used the IHI Model for Improvement to improve the case management discharge instructions on the unit. The model's four-stage PDSA cycle embedded has been used widely for QI initiatives in the healthcare field. A project's chances of sustainability increase when this problem-solving model is followed closely and carried out as suggested (IHI, 2017). This chapter explains how the IHI Model for Improvement was operationalized to test the change in the microsystem.

Project Purpose

The 30-day readmission rates on the inpatient unit fluctuate, ranging from 0–16.5% per month. Recent data indicates that the readmission numbers are increasing, and one of the causes is patients' and families' lack of understanding about the disease process. Preliminary observation of the nurses indicated that their education about disease warning signs had been inconsistent. Of the ten nurses observed, only two emphasized the importance of knowing signs and symptoms of disease worsening. The current case management discharge instructions are presented on a one-page form that includes only emergency service hotline numbers (Appendix J). Additionally, the instructions' format could cause confusion for the patients and staff, as the most important information was buried in the middle of the paragraph. The instructions also lacked the most crucial piece of information: warning signs of the worsening of the admitting diagnosis. The purpose of this QI project was to improve the case management discharge instructions to include very specific directions on how to address disease progression symptoms outside of the acute care setting in an effort to achieve readmission rates below the 10th percentile (the unit desired goal).

Resources

QI team. Forming a QI team is fundamental to the success of a QI project (IHI, 2017). This project's team members represented several disciplines: the CNL, discharge coordinators, a social worker, case managers, and the CNL student. The team met weekly to discuss the project's progress. Langley et al. (2009) suggested distinctive members to be included on QI teams: a project sponsor, a leader responsible for the project's daily routine, and a front-line leader. In this case, the student was the front-liner leader who were also responsible for the daily execution of the project.

Setting aims. Once a QI team has been established, the next action is to set project aims (IHI, 2017). The aim of this QI project was to modify the generic discharge instructions entered by the discharge coordinators to include the signs and symptoms of mental health crises and emergencies along with detailed instructions on what numbers to call for each issue. Specifically, patients would be directed to call their primary care doctor (PCP) for medical problems, the psychiatrist for psychiatric issues, and, if assigned, outpatient case managers for general questions. The new discharge instructions would be formatted in a user-friendly, one-page guide written at a fifth-grade reading level. Additionally, the unit's treatment worksheet—an activity therapy-produced worksheet containing skills for patients to use at home to prevent relapse (Appendix G)—would be included in the discharge summary for the first time.

Measurement: Data Sources and Tools

Establishing measures. The MSN student collected baseline data on several variables prior to presenting the findings to the team. The team continued to meet weekly to discuss the project's status. The IHI Quality Improvement Essentials Toolkit (IHI, 2017) was adapted to gain

a better understanding of the microsystem's issue. The following questions and answers guided the inquiry.

I. What are we trying to accomplish? The QI project's global aim was to reduce 30-day readmission rates in the microsystem by focusing on readmission causes. The QI data paired with the hospital's strategic goals provided a strong foundation for formulating this goal.

II. How will we know that the change is an improvement? According to the IHI model, answering this question requires the collection of baseline data to establish a specific area to improve and a quantifiable measurement of success. Following is the assessment/gap analysis:

1. The unit's readmission data for the fiscal year of 2017/18 indicated that lack of knowledge about whom to contact when health issues arise at home emerged frequently as a cause of readmissions.
2. After the initial chart review, team members noticed that many of the patients were readmitted with symptoms related to their initial admission diagnosis, indicating a need to examine the discharge planning and instructions process. Therefore, the CNL and CNL student worked together to audit and analyze patients' charts, specifically noting the omission of crucial TJC-mandated discharge summary components (Appendix B) (Holland & Hemann, 2011).
3. The CNL and CNL student also observed nurses delivering discharge instructions to determine whether they educated patients about warning signs during their discharge teaching (Appendix C).
4. The current discharge process was documented in a flowchart (Appendix D).
5. The baseline data on the user-friendliness of the current discharge instructions were collected (Appendix E).

6. The cause and effect or fishbone diagram (Appendix F) was used to view the microsystem problem from a different angle (IHI, 2017). This diagram is a tool for brainstorming ideas about the causes of an issue and involves several interrelated factors (people, environment, materials, methods, and equipment) (IHI, 2017).
7. The table in Appendix C shows the number of patients who received education from the nurses about medical/psychiatric warning signs and whom to call when they arise.

III. What change can we make that will result in improvement? In this step of the IHI Model for Improvement (IHI, 2017), the team analyzes the baseline data and formulates the process change. During the examination of the baseline data, the major gap and required change to the current discharge process became evident. To adopt EBP, the team needed to improve how nurses deliver discharge instructions to patients (Alper et al., 2017; Edelman, 2016). Specifically, the discharge teaching must include specific warning signs and explicit instructions for addressing them. Based on the initial problem assessment, the following indicators were measured to determine if the process change had resulted in an improvement.

1. Outcome measures

- a. 30-day readmission rates due to a lack of understanding about how to manage symptoms at home
- b. User-friendliness of the current case management discharge form.
- c. The number of patients receiving the treatment worksheet upon discharge

2. Process measures

- a. The number of nurses educating patients during discharge on warning symptoms to look for and whom to call

- b. The number of signs and symptoms included in each case management discharge instruction sheet
 - c. The percentage of nurses complying with the new discharge summary
3. Electronic health record (EHR) documentation
- a. The discharging nurse will document warning signs education in the behavioral health progress note
 - b. The admitting diagnosis is listed on the discharge summary and included in the discharge teaching
 - c. The social workers will incorporate the treatment sheet into the patient's goals

After a careful analysis of the baseline data, it was determined that this QI project would entail revising the current discharge process in the following three ways.

- The CNL, CNL student, and QI team modified the current case management discharge instructions into a user-friendly, one-page format written on a fifth-grade reading level.
- The new case management discharge instruction sheet will be divided into three sections: mild, moderate, and severe symptoms. The form will list mild symptoms with the outpatient case manager's and the primary care physician's telephone numbers. For moderate symptoms, the patients will be directed to call either primary care doctor or the psychiatric or the Community Mental Health Department. Lastly, the patients will need to call 911 for mental health emergencies. Patients will be advised to call 911 only as a last resort when they are experiencing mental health emergency symptoms. The top five symptoms of a mental health crises and emergencies will be listed.

- The treatment worksheet (Appendix G) will be mentioned in the new case management discharge instructions, and handed to the patient at discharge. The sheet contains crucial information that the patients can use to manage their symptoms at home.

Project Implementation Steps

The second part of the IHI Model Improvement involves using the PDSA cycle (Appendix I) to test and evaluate changes (IHI, 2017). Following is a description of how the current project was tested using the PDSA cycle.

Plan. In this phase, the QI team members agreed upon the need to improve the current case management discharge instructions. The CNL student collaborated with the discharge coordinators to create new version of the instructions and present it to the QI team. Input from the nurses regarding of the new discharge instructions also was collected. When all stakeholders were satisfied with the new form, it was introduced to staff during the unit's monthly meeting. The nurses were educated on using the new process via a PowerPoint presentation during a unit meeting delivered by the unit manager. To ensure the new system was working, data was collected from a sample of patients/family/caregivers who were asked to repeat the key information they received during discharge instructions (teach back). Feedback on the new instructions and it user friendliness was solicited and collected from patients, nurses, and discharge coordinators' simultaneously.

Failure mode effects and analysis (Appendix H) was conducted to predict factors that might hinder the project's implementation. Potential problems included

- A shortage of nursing staff on the go-live day requiring the use of resource nurse substitutes who did not understand the new system;
- Patient discharge delays creating additional stress for discharging nurses;

- Case management discharge instructions not printing on one page as intended; and
- Last-minute staff assignment changes.

The MSN student addressed these issues by being present the day before and day of the scheduled go-live date, and following up with the nursing staff members individually. The CNL, discharge coordinators, and case managers also monitored the use of the new instructions.

Finally, the CNL student collaborated with the charge nurse to ensure adequate staffing on the go-live date.

Do. An experienced nurse tested the new case management discharge instructions on one patient. The MSN student received feedback from the nurse and adjusted the process and forms as necessary. Next, the MSN student piloted the change with a small group of nurses, asking them to be a resource for other nurses before the go-live day. The go-live date was chosen based on the number of the discharges, the nurse-to-patient ratio, and the unit's acuity. This phase was to last two to three weeks.

Study. When the CNL student noted deviations from the implementation plans, she discussed the findings with the QI team. Feedback on the new process was solicited from the nurses and other stakeholders. Unexpected results were refined before moving on to the next step.

Act. In this phase, information from the previous step was analyzed and the QI team decided what changes to make. When the new process became standard practice in the microsystem, the test was ended and the PDSA cycle was no longer needed.

Conclusion

The IHI Model for Improvement was the most appropriate model for this QI project, as it required several changes to achieve a sustainable result. Based on the microsystem, it was

discovered that there was no a concrete discharge plan that includes the teaching about warning signs of mental illness, as well as a lack of individualized home strategies to address the potential issues. Therefore, the global aim of the project is to reduce readmissions, increase patient/staff satisfaction with new discharge instructions, and increase the number of nurses documenting signs and symptoms of disease progression in the EHR. The new case management discharge instructions were designed to address the outcome measures above.

Chapter 5: Clinical Evaluation

To decrease the risk of rehospitalization following discharge, it is crucial that patients, families, and caregivers recognize the early warning signs of disease progression and know how to address them, which had been well documented in research studies. In a recent study, Edelman (2016) found that poor understanding of the signs and symptoms of disease worsening contributes to unplanned readmissions. Inability to understand discharge instructions had been linked to early and unplanned readmissions (Alper et al., 2017). The MSN student found that the case management discharge instructions form used in the hospital's clinical immersion site lacked disease-specific information and specific phone numbers (besides 911 and community mental health phone numbers) patients could use to navigate the healthcare system once back in the community.

In response to these omissions, the CNL student changed the case management discharge instructions form and process. This included creating new case management discharge instructions form that included the signs and symptoms of mental health crises and emergencies, creating list signs and symptoms of the most frequently diagnoses seen on the unit (Appendix R), educating the nurses on the signs and symptoms and teach back method, and adding the treatment sheet as part of the discharge instructions. The new form was created to include the warning signs for patients to look for after discharge, including symptoms of physical and mental health crises, as well as several contact numbers to call when the psychiatrist or primary care doctor could not be reached. The new form has been embedded into the unit's charting system and used since June 2018. The purpose of this chapter is to analyze and evaluate the effectiveness of the QI project, especially the new form and identify this quality improvement (QI) project's strengths and weaknesses. The sustainability of the project was also analyzed.

Protocol Implementation Evaluation

Plan

The planning phase began with gathering baseline data on readmission rates, the user-friendliness of the current form, signs and symptoms patients need to look for after leaving the hospital, completion of the treatment sheet, education of the signs and symptoms, and teach-back method. To obtain the needed data, the student studied the old form, asked staff about the form's user-friendliness, observed nurses discharging patients, and audited patient's charts. The results of the data mining were presented to the QI team, whose members determined that several readmissions might have been prevented had the patients been educated on the symptoms of their admitting diagnoses. The QI team members concurred that the form should be modified to include symptom and contact information in an easy-to-use format.

The MSN student created the first draft of the new form and presented it to the QI team. After three modifications, the team members agreed on the final draft that included symptom information (that could be copied and pasted onto the form) as well as phone numbers for the patient's unit, outpatient case managers, psychiatrist, and primary care doctor. To enhance readability, the form was written at a fifth-grade reading level. The form was designed to direct patients to call a specific healthcare professional as their symptoms escalate from mild to moderate to severe. Most importantly, the new form was modifiable, allowing case managers and discharge coordinators to customize it based on patient-specific needs. The final version was presented to the QI team and was emailed to each individual for review. The team members approved the form.

Do

The project went live on June 6, 2018. Several attempts were required to embed the new form into the electronic health record due to some difficulty navigating the charting system. Eventually, the form was included on all of the case manager's personal favorites lists on the charting system so it could be easily accessed. Using the PDSA cycle, several nurses were informed about the new form prior to discharging patients, and they subsequently piloted use of the form without difficulty. However, while the case managers did not have any problems inserting the symptoms of the patients' admitting diagnoses onto the new form during the first week of implementation, they stated that they found it challenging the following week as some symptoms were not easily copied and pasted from the education materials. Overall, the go-live day was successful with only minor issues.

Study

Nurse feedback was gathered immediately after the new form was given to the patient and their family members or caregivers. Feedback also was solicited from the discharge coordinators (QI team) and the unit manager. Input from members of these different disciplines was considered carefully before any changes were made to the new form.

During the implementation week, the MSN student noticed that the form became one and half pages long after the discharge coordinators entered the signs and symptoms and other pertinent information. This outcome deviated from the initial intention to provide an easy-to-navigate, one-page form. In addition, the instructions that were intended to be printed in color to highlight crucial information were instead printed in black ink. Moreover, it was determined that in some cases, the old form was still being used one-week post-intervention. Lastly, not all of patients were being given completed treatment sheets by the time of discharge.

Act

In response to these issues, the QI team and unit manager decided to keep the page number flexible so the discharge coordinators could modify information based on patient needs. The team also planned to add quality- and safety-based information to the new form. The color-coded instructions were changed to black since the printer used only black ink. Finally, the MSN student entered the new form manually into each of the patients' discharge summaries to ensure the new form would be used consistently. Unfortunately, the new form was not able to be entered automatically since it would involve a massive process change that would include the entire organization. The student also ensured that all discharge coordinators and case managers added the new form onto their personal favorites list on the charting system. Lastly, the CNL student created a list of the top five symptoms of common diagnoses for the case managers and discharge coordinators to use. The unit's new discharge process was also changed (Appendix P).

Project Outcomes

The aim of this project was to decrease readmission rates due to patients' poor understanding of the signs and symptoms of a worsening condition and how to address them. The new form gave patients the tools necessary to manage their symptoms after hospital discharge. Several outcome and process measures were monitored to measure the project's effectiveness.

Outcome Measures

Readmission rates. The readmission numbers for the month of July—one month after the project was implemented—would not be available immediately. It may be difficult to determine whether any decrease in readmission rates resulted from using the new form. Around the same time this QI project began, the unit's leadership implemented a dramatic unit change

when they decided to staff more social workers, case managers, and discharge coordinators in the unit. This strategy was initiated to decrease patients' length of stay and readmission rates. The most recent readmission data revealed that nine patients discharged in April were readmitted to the unit, which was significantly higher than previous month of 2 patients. The reasons for the readmissions varies ranging from medication and treatment non-compliance and inability to manage symptoms at home. The staff must speak with patients and family members to determine if patients were readmitted to the unit due to their inability to recognize diseases progression signs and symptoms. Such information could be gathered during the admission process.

User-friendliness. Another project outcome measure was the satisfaction of the staff who used the form the most—nurses, discharge coordinators, and case managers. The new form user-friendliness is important because it affects the staff's ability to explain the instructions to patients and their families (Appendix K) so that they understand and can act on them post discharge. Both staff and patients appreciated the bulleted information on the new form that included easily identifiable steps and a list of corresponding phone numbers to call with specific symptoms. There fifteen nurses who were asked about the new form and 87% of them were satisfied with it. This was a significant increase from pre-implementation staff satisfaction of only 20% of the staff interviewed liked the old format. The old form had less instructions condensed into a half page information as well as the staff were used to the old format of the discharge instructions.

Unit treatment sheet completion. The treatment sheet contained very important information such as trigger symptoms, warning signs and plan to prevent relapse, which coincide with the aim of this project. The sheet was initially created by the staff to guide the patients to complete to guide their treatment plans, however it had been rarely used. For this project, the student incorporated the pre-existing sheet onto the case management discharge instructions form

for the first time. They patients needed to complete the sheet prior to discharge to be used at home as future reference. We monitored the number of treatment sheets both included in the patients' treatment plans and taken home by the patients. Because social workers created patient treatment plans or goals, they were responsible for including the treatment sheet with the goals. There was only 15% of the patients discharged in June (pre-implementation) completed the treatment sheet compared to 50% post-implementation (July). The increase was attributed to the effort from the activity therapists who ensured that each patient filled out the sheet, at least the relapse prevention portion.

Teach-back of Signs and Symptoms Method

The teach-back method is a way to have patients to repeat back what has been taught to the educators and has been widely used in the health care setting (Ha Dinn et al., 2016). The strategy has been shown to improve outcomes, especially in those with chronic conditions (Ha Dinn, et al., 2016). However, the nurses on the unit have not embraced the method consistently leading to unsatisfactory outcomes in many different levels such as poor treatment compliance and increase readmission rates. The MSN student proactively demonstrated the teach-back method to the nurses upon discharging patients. The compliance with the teach-back method was overwhelmingly phenomenal. Pre-implementation, there were only two nurses doing the teach-back method out of 12 nurses observed. Post-implementation all eight nurses employed the teach-back method to their patients during discharge (Appendix O).

Process Measures

Discharge summary compliance. During chart audits, it was noted that the old form did not meet Joint Commission mandated standards (JCT, 2018) for discharge summaries. A written description of the patient's chief complaint was included inconsistently. The two other missing

elements were education on what symptoms to look for and who to call, and contact information for the unit where the patient was admitted. Post-implementation audits revealed that 100% of charts audited (20/20) included the three missing elements described above (Appendix L).

Symptom education. Teaching patients and families about disease signs and symptoms was a crucial aspect of this project. Pre-implementation, only two out of twelve nurses educated their patients on symptoms that could occur after discharge. Based on the data, the student educated the discharging nurse at the time of discharge to address the warning signs. The nurses also received education on the new form during one of their unit meetings. Although, the nurses were responsible for educating their patients, the case managers and discharge coordinators were accountable for adding those signs and symptoms onto the new form. They copied and pasted the symptoms from mental health and medical symptoms list that was created for this purpose. After the new form was implemented, 100% of the nurses emphasized signs and symptoms when discharge instructions were given (Appendix M). Embedding the signs and symptoms into the form prevented the nurses from inadvertently skipping this important step.

Including signs and symptoms on the form. To ensure that disease signs and symptoms were included on the form, the CNL student created a list of the top five symptoms of diagnoses frequently seen on the unit. This list was provided to the discharge coordinators and case managers so they could copy and paste those symptoms seamlessly into the instruction paperwork. The strategy found to be effective since all eleven forms audited included the signs and symptoms.

Practice Implications

Project Strengths and Weaknesses

This project has the potential to reduce readmissions, thereby decreasing unit and organization costs. The new process change included new case management discharge instructions, education of the nurses to teach their patients on signs and symptoms to watch for at home, formulation of a list of signs and symptoms of common mental health and medical chief complaints being treated on the unit, and inclusion of the mental health crises and emergencies and treatment sheet onto the new form. The new form's main strength is its ability to be customized based on patients' needs. Case managers and discharge coordinators can edit, omit, and add instructions as needed. However, this strength can create a challenge when the case managers and discharge coordinators add more information to the discharge instructions, increasing the final page count. Another strength of the new form is the inclusion of several healthcare professional's phone numbers, giving patients several people to call in case the first person is unavailable. Additionally, the instructions were created using a fifth-grade reading level to promote readability. A final strength of this form was the fact that its designer considered the opinions of staff, including those not immediately involved in the discharge process.

Although the project has several advantages, some weaknesses were also noted. The phone tree may be difficult for the patients to manage at home and may cause confusion, especially for those who are being followed by many different doctors. The patients may also not understand the differences between mental health crises and emergencies, which can lead them to call inappropriate assistance. Lastly, the treatment sheet could be neglected since only some patients deem competent to complete the sheet based on the social workers assessment.

Sustainability

This project's sustainability is strong for several reasons. The nurses and QI team reported satisfaction with the new form's content and user-friendliness, increasing the likelihood

that it will be used. The new form also can be modified to suit patients' needs and preferences. Additionally, the unit manager and the CNL can use the form to provide information that helps promote safe, high quality patient care. Moreover, this project can be adopted by other units struggling with readmissions. Finally, implementing this project did not use any funding, as it only required modification and refinement of the existing form.

Enactment of the MSN Essentials

This QI project enabled the MSN student to perform several MSN Essentials:

- Essentials II (Organizational and System Leadership for Quality Improvement and System Thinking),
- Essentials III (Clinical Scholarship and Analytical Methods for Evidence-Based Practice),
- Essentials IV (Translating and Integrating Scholarship into Practice),
- Essentials V (Informatics and Healthcare Technologies), and
- Essentials VII (Interprofessional Collaboration for Improving Patient and Population Health Outcomes) (American Association of Colleges of Nursing [AACN], 2013).

The MSN student enacted Essentials II (Organizational and System Leadership for Quality Improvement and System Thinking) when she analyzed the project's financial risks and benefits to the unit. The implementation of new form could save the unit \$30,000 per patient, with a 15-day average length of stay. Currently, at least one patient was readmitted to the unit per month because they did not understand the worsening symptoms of their diagnosis and did not know whom to call when the problems arose.

The student completed Essential III (Clinical Scholarship and Analytical Methods for Evidence-Based Practice) when she analyzed and reviewed evidence-based articles pertinent to the QI project. The problem was discovered after a critical and thorough assessment of the unit

and the project was developed based on the findings. An extensive literature review was completed to examine interventions that supported the proposed change.

The successfully implemented project has become part of the unit's new routine. The project's implementation phase required Essentials IV (Translating and Integrating Scholarship into Practice) competencies, as the CNL student created the new form based on the current literature (Alper, O'Malley, & Greenwald, 2017).

Lastly, Essentials VII (Interprofessional Collaboration for Improving Patient and Population Health Outcomes) was completed through the development of the QI team to discuss the practice problem and brainstorm ways to improve it. The CNL student enacted evidence-based interventions to change an old discharge form while considering staff suggestions.

Conclusion

A proposed change to the unit's case management discharge instruction form was presented to the staff and QI team after a lengthy data mining process and literature review were completed. All key stakeholders—including the staff, discharge coordinators, case managers, and psychiatrist—brainstormed ideas to improve the discharge instructions. The staff verbalized their understanding of the need for a change and willingness to adopt the new form. Guided by the Institute for Healthcare Improvement's (IHI) Model for Improvement (IHI, 2017), the MSN student developed a new version of the discharge instructions and executed the project implementation with full staff support. The PDSA cycle was used extensively to make adjustments during the project until the desired outcome was achieved. The nurses reported their satisfaction with the new form. The MSN student's use of the IHI Model for Improvement and PDSA cycle exhibited her ability to carry out the MSN Essentials and the CNL's critical role in implementing an evidence-based practice to improve outcomes.

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Appendix A – Literature Review Table

Authors(s), Pub Date, Title	Design/Method	Sample/Setting	Major Variables	Major Variable Measurement	Findings	Appraisal of worth to practice, Strengths of evidence and quality
Auerbach, A. D., Kripalani, S., Vasilevskis, E. E., Sehgal, N., Lindenauer, P. K., Metlay, J. P., . . . Schnipper, J. L. (2016). Preventability and causes of readmissions in a national cohort of general medicine patients	Patients and doctors were surveyed, reviewed documentation. 2-physician case review to find out factors that contribute readmission. Factors preventability was also analyzed	1000 medical surgical patients readmitted within 30 days of discharge in 12 teaching hospitals in the U.S. from April 1, 2012 to March 31, 2013. Median age was 55 years old.	Avoidable and unavoidable readmissions, factors that contribute to preventability, baseline risk factors	bivariable statistics, multivariable models, adjusted odds ratios	Strong factors: decision made by ED, short LOS and inadequate discussions plan of care in patients with complex health issues. The most common factors: decision made by ED (9%), issues with appointments (8.3%), short LOS, (8.7%) patient lack of awareness of whom to contact after discharge (6.2%)	Acute care settings should give greater attention to the strong factors indicated by the study. The discussion of plan of care with patients having complex medical issue can be addressed through comprehensive discharge planning.
Henke, R. M., Karaca, Z., Jackson, P., Marder, W. D., & Wong, H. S. (2017). Discharge planning and hospital readmissions	The Healthcare Cost and Utilization Project (HCUP), State Inpatient Databases used	Over two million patients and more than 4, 000 hospitals across 16 states.	Acute myocardial infarction, heart failure, total hip or knee arthroplasty, and pneumonia. Hospital and patient characteristics.	Generalized linear mixed model to calculate patient and hospital characteristics' contribution to 30-day all.	Discharge planning lowered readmission rates in patients treated with myocardial infarction, pneumonia, heart failure, and hip or knee surgery.	The study was expanded to other conditions such as spinal fusion, joint replacement, and hip or knee revision. So, it could be potentially replicated in different patient population.
Horwitz, L. I., Moriarty, J. P., Chen, C., Fogerty, R. L., Brewster, U. C., Kanade, S., . . . Krumholz, H. M. (2013). Quality of discharge practices and patient understanding at an academic medical center	Delphi methodology	The study was conducted in the Hospital of the University of Pennsylvania. There were 276 patients (70 years and older) and 125 caregivers.	Length of initial stay, readmission rates, initial admission, readmissions. DC planning. The control group comprehensive DC planning. The control group received only the regular DC planning	Chi square, fisher exact test and independent t-test	Patients in the intervention group had mean LOS ranging from 2-18 and 2-36 in the control groups. Readmission rates within 2 weeks in the intervention group were 3 out of 4 patients and 11 out of 16 patients in the control group. The intervention group (n=72) costs within two weeks were \$89 088 compared to \$252 946 for the control group (n=70)	The interventions in the study were designed specifically to target older population and implemented by nurse specialists. A similar approach can

Authors(s), Pub Date, Title	Design/Method	Sample/Setting	Major Variables	Major Variable Measurement	Findings	Appraisal of worth to practice, Strengths of evidence and quality
Gonçalves-Bradley, D. C., Lannin, N. A., Clemson, L. M., Cameron, I. D., & Shepperd, S. (2016). Discharge planning from hospital	RCTs	30 trials (11,964 participants with medical conditions, combination of medical and surgical conditions, from psychiatric and regular hospitals).	Main variable: LOS, readmission rates. Other variability: mortality rate, compliance rate, healthcare costs, and satisfaction of patients and staff.	RR and MD	Discharge planning reduced unplanned 30-day readmission rates with moderate certainty. DC planning also reduced LOS (moderate certainty).	The studies in the review did not include communication in the DC planning, which found by Nurjannah et al. (2014) to be a critical component of DC planning.
Nurjannah, I., Mills, J., Usher, K., & Park, T. (2014). Discharge planning in mental healthcare: an integrative review of the literature (2013)	Integrative review	19 articles on discharge planning in mental healthcare impacting acute and community settings	Readmission rates, communication, quality of life, healthcare compliance	CASP used to appraise every article	Communication was a critical part of DC planning for family engagement and outpatient referrals. DC planning increased healthcare services utilizations and decreased readmissions. DC didn't affect QOL	This review used both qualitative and quantitative studies to cover a broad range of issues associated with evidence-based DC planning.
Steffen, Kösters, Becker, & Puschner (2009). Discharge planning in mental healthcare: A systematic review of the recent literature	Systematic review	11 articles and >5,000 subjects, 6 RCTs, 3 clinical controlled trials, 2 cohort studies	Readmission rates, quality of life, adherence to treatments, mental health	Lehman's Quality of life questionnaire, pooled risk ratio, Hedge's g.	Readmission rates were 7%-25% lower compared to 15-46% higher in the control groups. Intervention groups 47% to 95% more compliance to their outpatient treatments as opposed to only 21% to 76%. QOL was not affected by discharge planning. Mental health symptoms improved.	Healthcare professionals can steer the focus on preparing the patients for discharge and preparing and giving support, which were seen to affect all measures accept QOL.
Yam, C. H., Wong, E. L., Cheung, A. W., Chan, F. W., Wong, F. Y., & Yeoh, E.-k. (2012). Framework and components for effective discharge planning system: a Delphi methodology.	Delphi methodology	24 experienced professionals from a multidisciplinary healthcare team.	Readmissions due preventable factors. Good DC planning that include plan of care after hospitalization.	Inter-quartile range	There is a need to have a coordinated hospital discharge process for effective transition after discharge.	The study is based on empirical findings. It is highly credible. However, the framework developed is yet to be subjected to a pilot study to determine its applicability. If proven useful, this study is important to clinical practice in guiding the development of effective discharge planning frameworks.

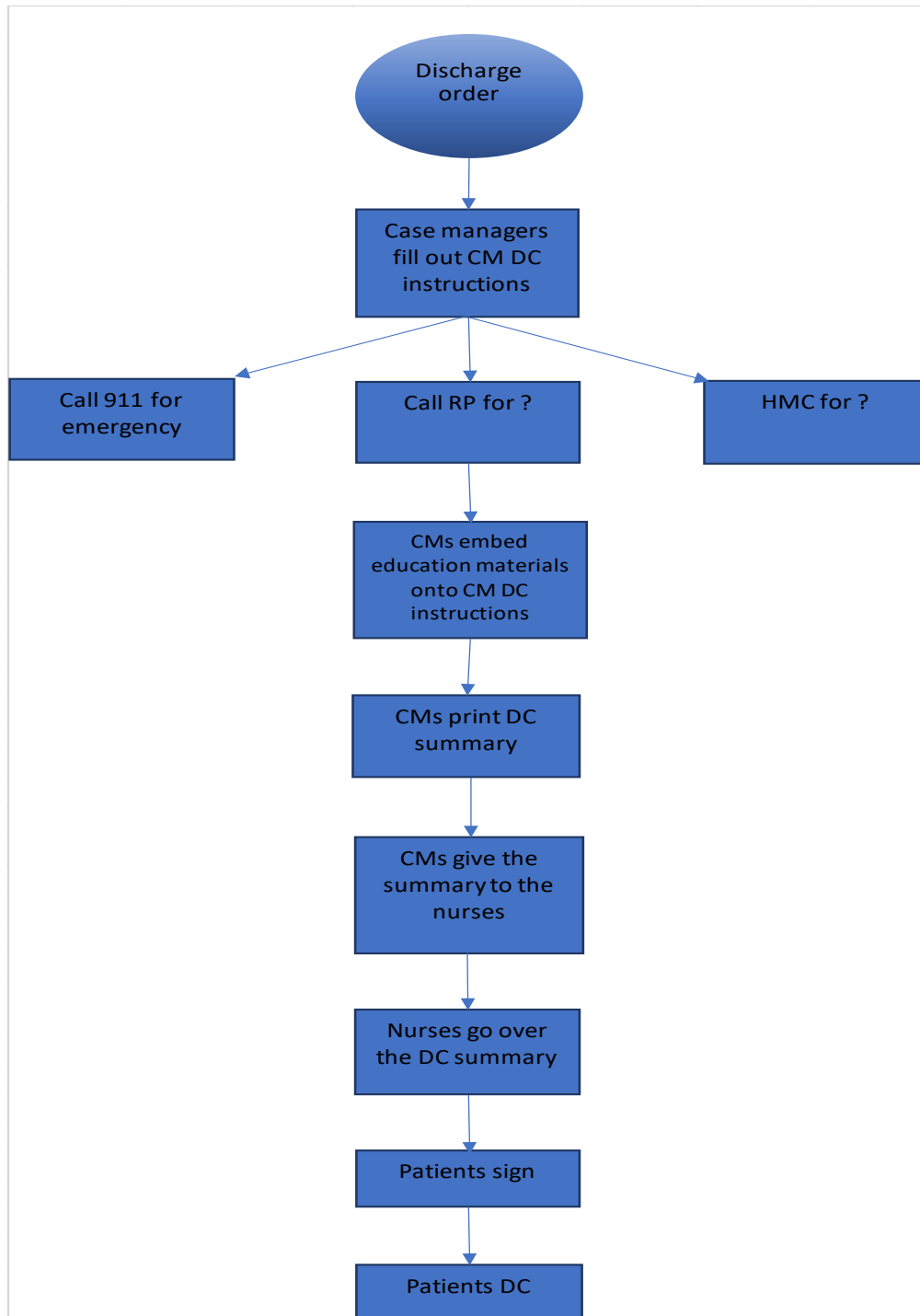
Appendix B - Components of Discharge Summary

Components of DC summary	Included	Not included	Number charts audited
A written description of why the patient was in the hospital (chief complaint)	15	5	20
A complete list of all medications that the patients has to take, and instructions how to take them and where to get them	20	0	20
An education on what symptoms to look for and who to call and what to do if they can't reach PCP	0	20	20
Contact information of the hospital/unit where the patient was admitted	Unit phone #: 0 Hospital phone #: 20	20 0	20 20
Details of outpatient appointments	20	0	20
Instructions on pending tests and results	20	0	20

Appendix C – Education of Signs and Symptoms

Component of DC summary	Number of RNs observed	Number of patient/families/caregivers educated	Number of teach backs done
An education on what symptoms to look for and who to call and what to do if they can't reach PCP	12	2	2

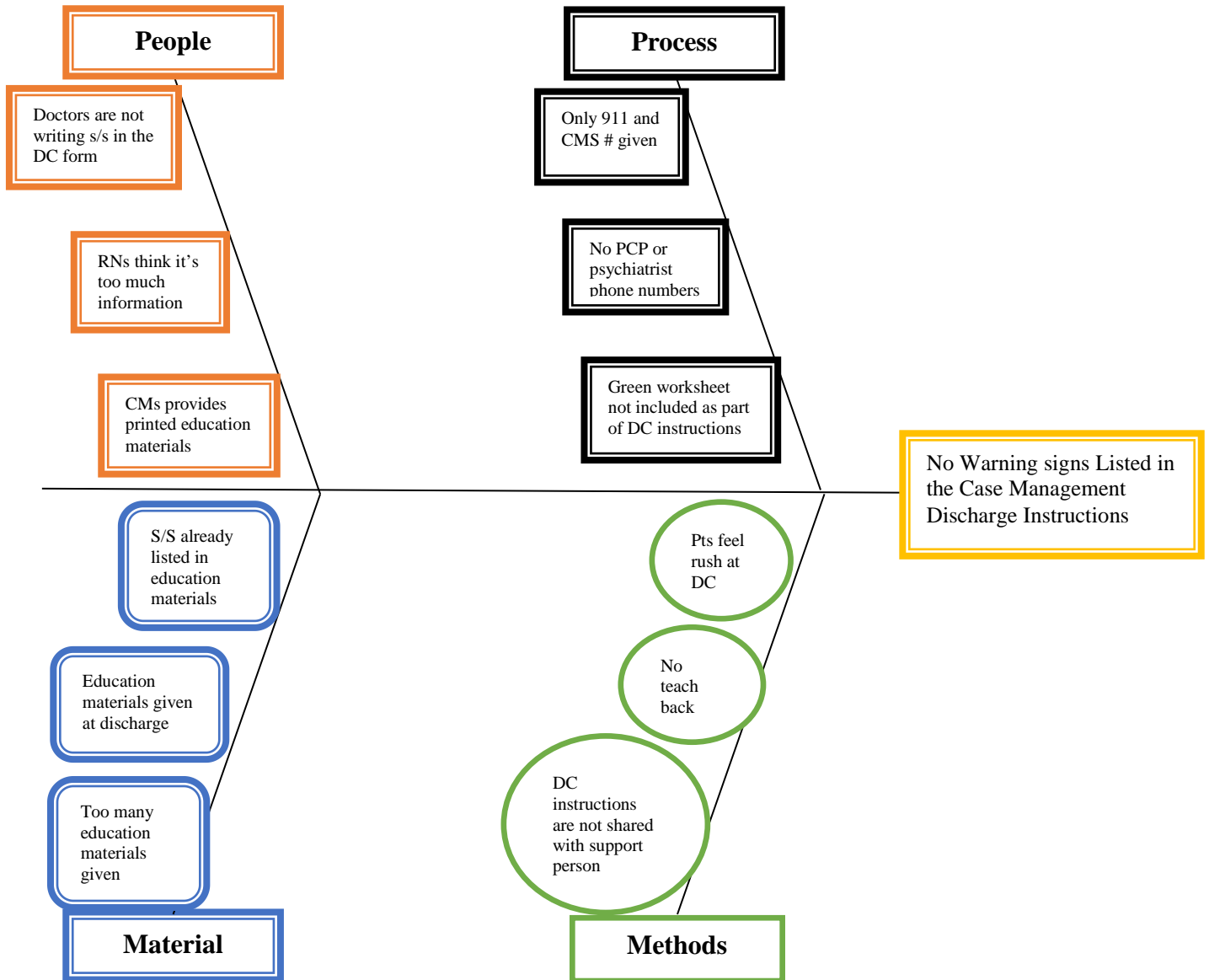
Appendix D – Flowchart of Microsystem Discharge



Appendix E - Chart of User-Friendliness of Current Discharge Instructions

Current Case Management Discharge Instructions	User Friendly	Not User Friendly	# of RNs interviewed
<p>PMU Case Management Discharge Instructions</p> <p>You are being discharged to----- . You will be transported by ----- . Medications----- . In case of an emergency you can call 911, our ---- contact at (616) , or y-----our -----at ----- . Please see and read your discharge instructions completely for further instruction and referral information.</p> <p>Your main medical concerns while you were hospitalized include----- . We have included education on this in your discharge instructions. Your primary care physician is-----, their phone is----- . See appointment details above.</p> <p>If you have non-life-threatening concerns after discharge we suggest the following:</p> <ol style="list-style-type: none"> 1. Call the office (earlier the better) 2. Ask to speak with a nurse 3. Voice your concern 	2	8	10

Appendix F - Fishbone Diagram



Appendix G – Treatment Worksheet

TREATMENT WORKSHEET

Where will I discharge to when I leave? _____

My Plan for Managing my Medications after Discharge: _____

My Plan to Keep Myself Safe after Discharge: _____

Safety Plan Reviewed

Relapse Prevention

- Triggers:
- Warning Signs:
- Plan to Prevent:

Questions for my Psychiatrist / PA:

- 1) _____
- 2) _____
- 3) _____
- 4) _____

Questions for my Case Manager:

- 1) _____
- 2) _____
- 3) _____
- 4) _____

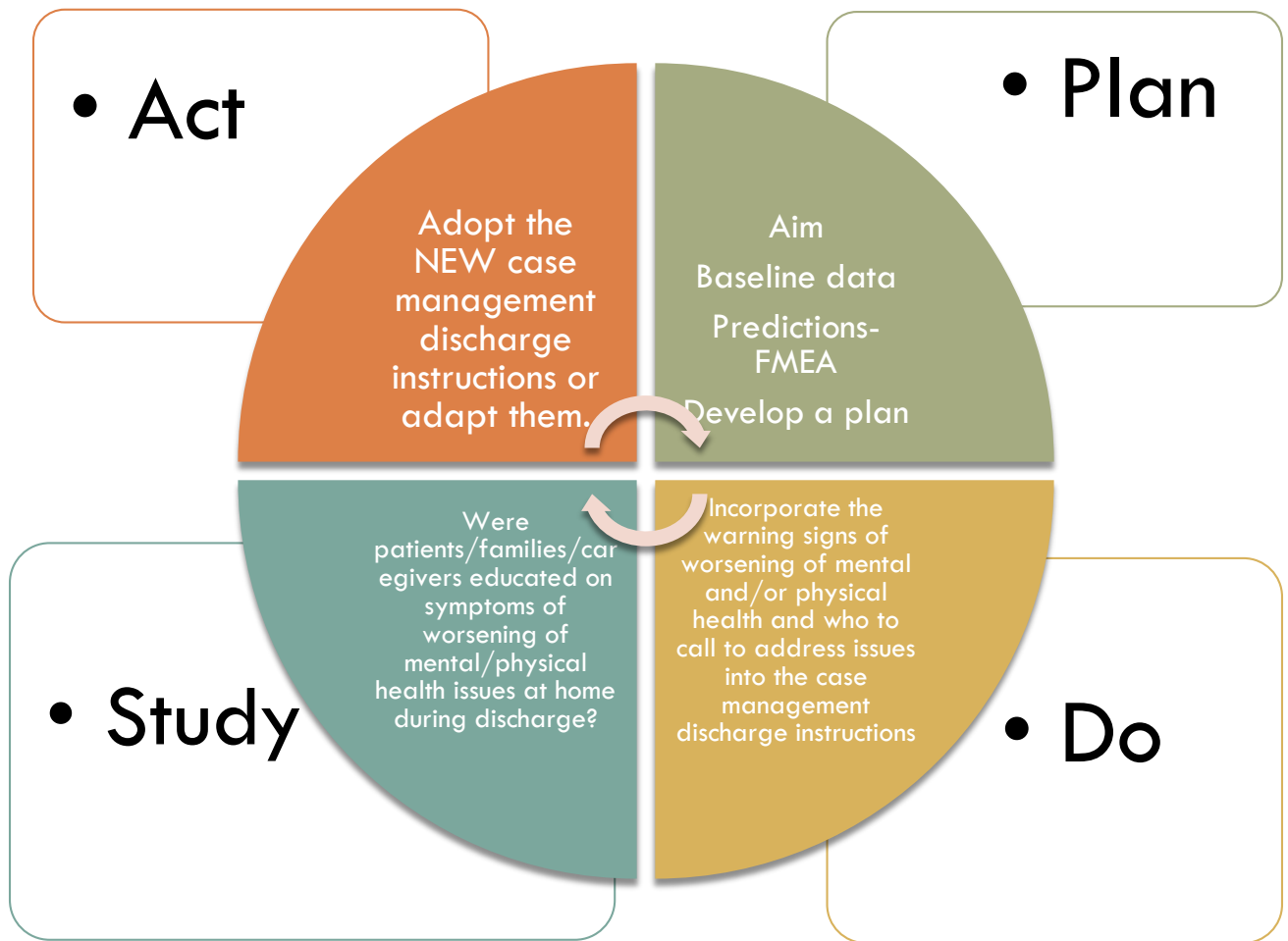
Questions for other Care Givers:

- 1) _____
- 2) _____
- 3) _____
- 4) _____

Appendix H – Failure Mode Effects and Analysis

Process Steps	Failure Mode	Failure Causes	Failure Effects	Occurrence Likelihood (1-10)	Detection Likelihood (1-10)	Severity (1-10)	Risk Profile Number (RPN)	Actions to Reduce Failure Occurrence
Discharge	Delay	Family unable to pick up patient at the designated time	Causes unnecessary anxiety for the RN	3	1	1	3	Find out who will provide the transportation the day before discharge
Short Staff	Resource RN	The RN is not educated on the new process	The RN does not know how to use the new process	2	1	1	2	Find out the staffing situation the day before go-live
Last minute assignment changes	The assigned RN is sick	The new RN does not understand the process	The RN does not know how to apply the new process	1	1	1	1	Educated the back-up RN
Case management discharge instructions	Do not print in one page as intended	Font is too large	Too many instructions	1	1	1	1	Try to print them the day before go-live

Appendix I – PDSA Figure



Appendix J - Old Case Management Discharge Instructions

--- Case Management Discharge Instructions

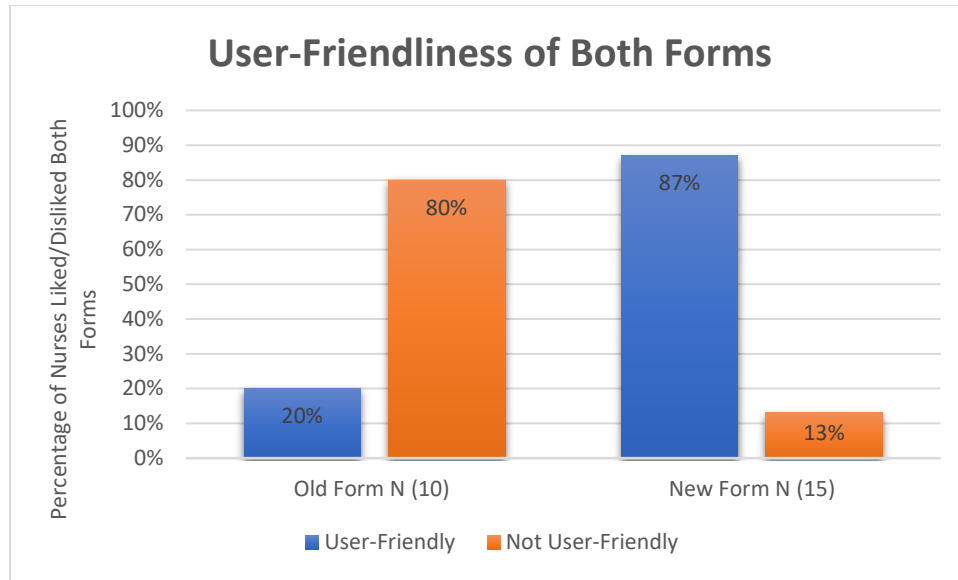
You are being discharged to----- . You will be transported by -----
---. Medications----- . In case of an emergency you can call 911,
our ----- contact at (616) -----, or your local community ----- at ----
----. Please see and read your discharge instructions completely for
further instruction and referral information.

Your main medical concerns while you were hospitalized include-----.
We have included education on this in your discharge instructions. Your
primary care physician is-----, their phone is----- . See appointment
details above.

If you have non-life-threatening concerns after discharge, we suggest the
following:

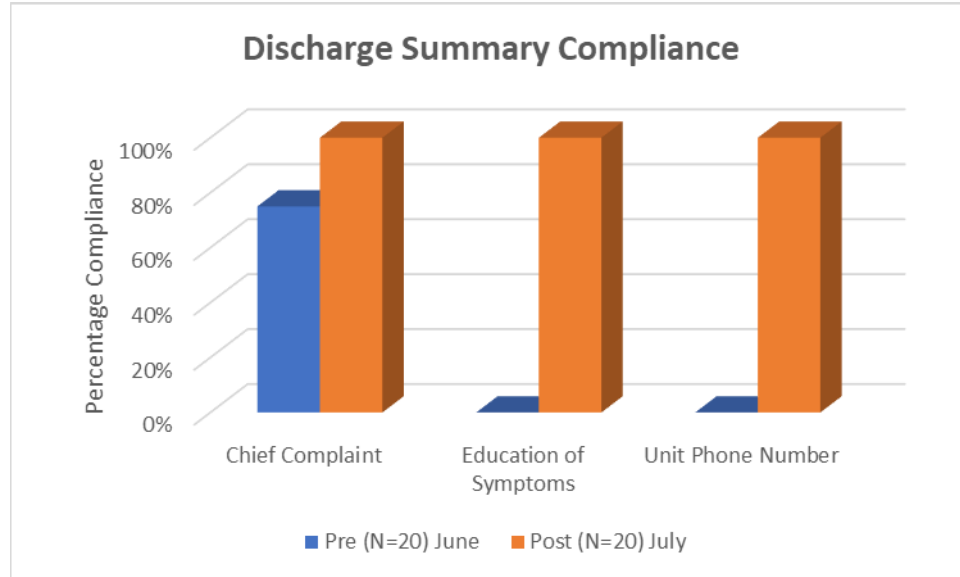
4. Call the office (earlier the better)
5. Ask to speak with a nurse
6. Voice your concern

Appendix K-User-Friendliness of Both Forms



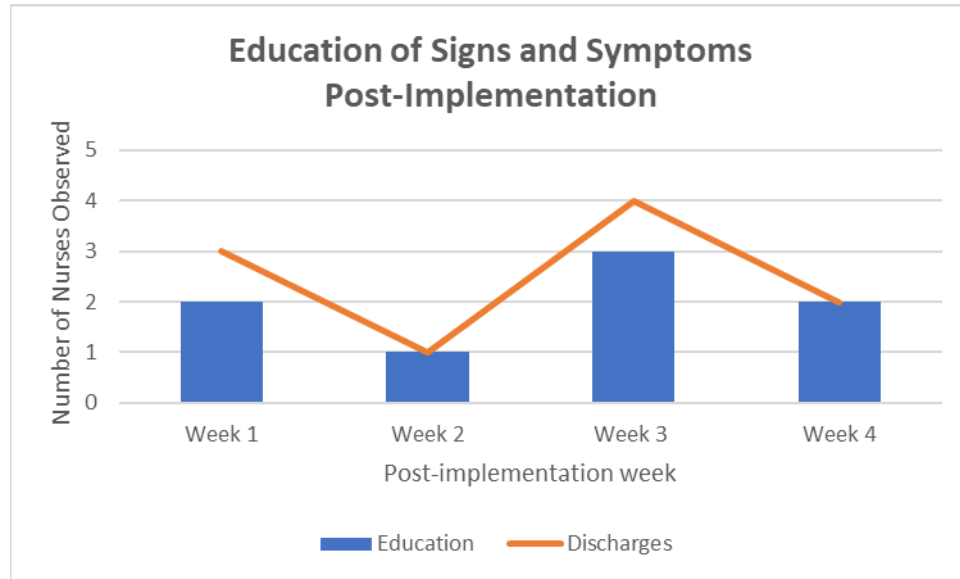
Note: only two nurses out of eight preferred the old form. Meanwhile, thirteen nurses out of 15 liked the new version of the case management discharge instructions.

Appendix L – Discharge Summary Compliance



Note: compliant to the component of the discharge summary, especially education of symptoms and unit phone number increased tremendously. The three components were included in the discharge summary post-implementation of the new system.

Appendix M – Education of Signs and Symptoms

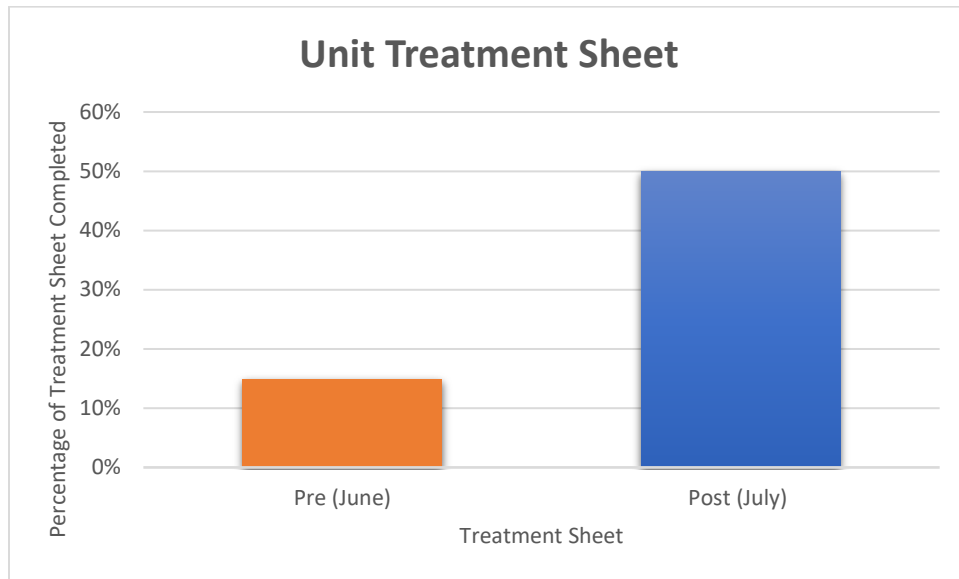


Note: the number of education of signs and symptoms correlate with the number of discharges.

Week three had three discharges, and the nurses educated all three patients on the symptoms to

look out for.

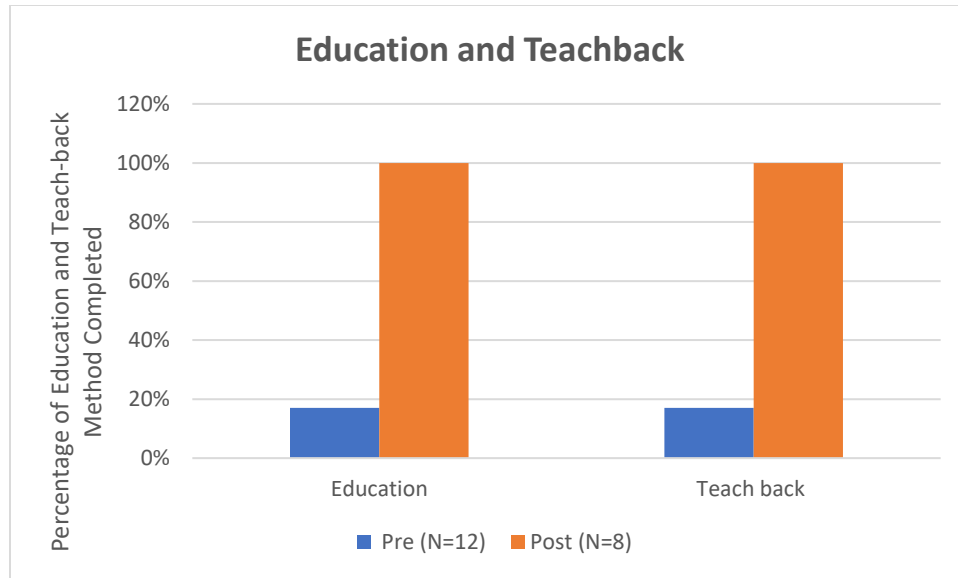
Appendix N-Treatment Sheet Pre and Post-Implementation



Note: pre-implementation, only 15% of discharged patients had completed their treatment sheet.

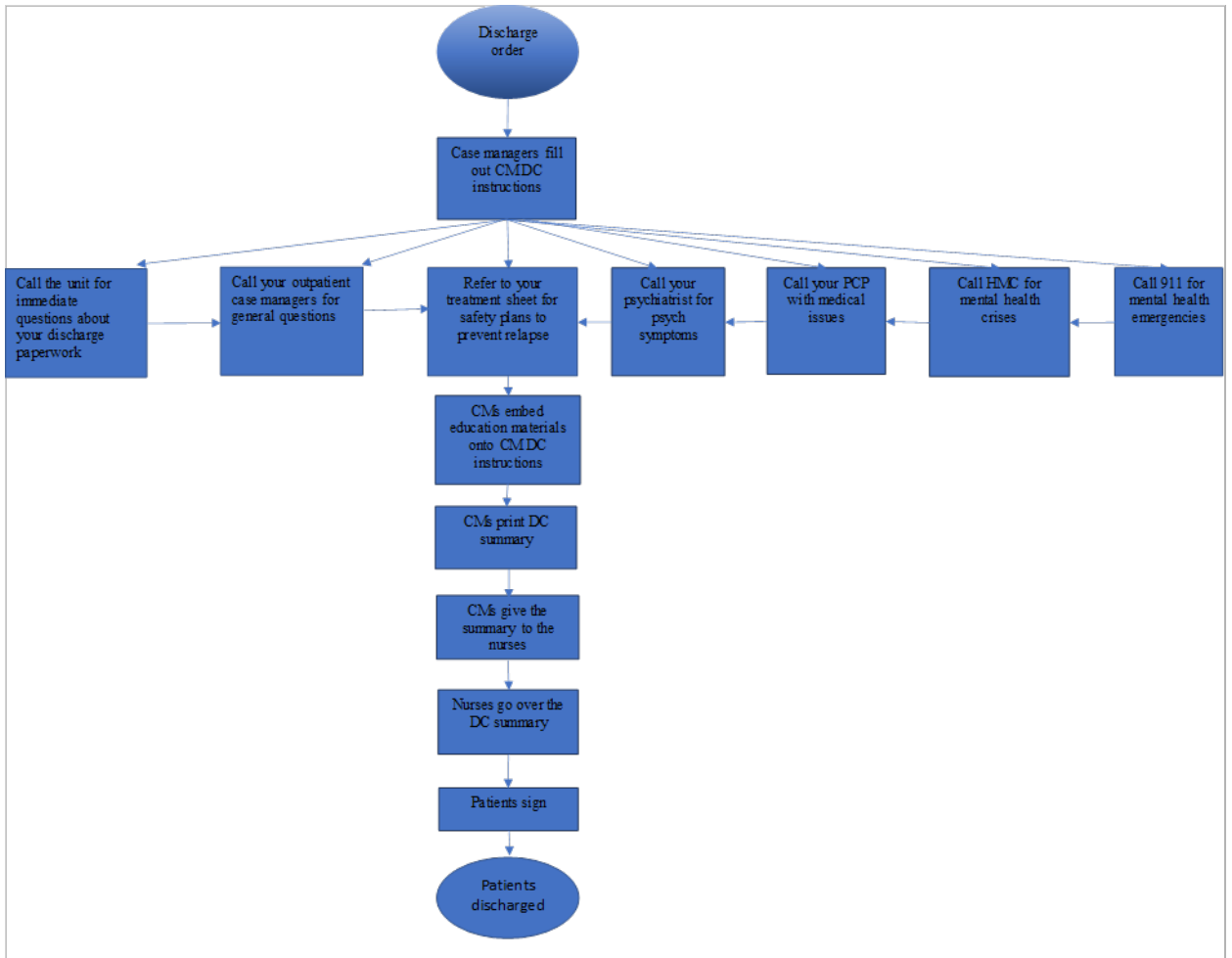
Post-implementation, there was 50% patients completed their sheet, an increase of 35%.

Appendix O-Education and Teach-back Method

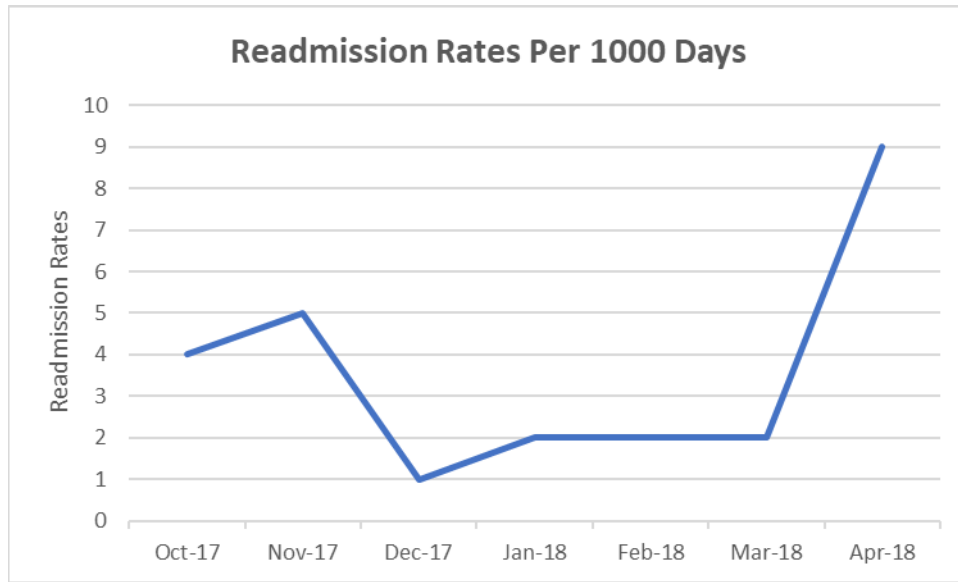


Note: the education on the signs and symptoms were related with teach-back method. Post-implementation, eight nurses were observed and all them did the education and teach-back method compared to only two out of twelve nurses did the teach-back method pre-implementation.

Appendix P-New Discharge Process



Appendix Q-Readmission Rates of Fiscal Year of 2017-2018



Note: the lowest readmission rate was in December, 2017 with only patient came back to the unit. Unfortunately, there were nine patients were readmitted in the month of April, 2018.

Appendix R-New Case Management Discharge Instructions

Case Management Discharge Instructions

- ✓ You are being discharged to----- . You will be transported by----- . Medications----- .
- ✓ Call [REDACTED] at [REDACTED] for immediate questions about your discharge paperwork.
- ✓ Call your outpatient case manager (name and phone #?) if you have general questions.
- ✓ Refer to your [REDACTED] for safety plans to prevent relapse. Please place this in a place where you can easily see it.

Call your psychiatrist at (name/phone #) if you have these symptoms: -----
(list the top three symptoms of the psychiatric diagnosis/es)

Call your primary care doctor at (name/phone #) if you have these symptoms: ---
--- (list the top three symptoms of the medical diagnosis)

Call the Community Mental Health Department at (phone #) if you have mental health crisis:

- ✓ Cannot stop talking about hurting yourself or other people
- ✓ Self-harming behaviors that do not need to be treated right away
- ✓ Not taking your medications that you are supposed to take

Call 911 if you have mental health emergency:

- ✓ Doing things to end your life or other people's lives
- ✓ Self-harming behaviors that need to be treated right away
- ✓ Taking too much medications that you are supposed to take

Appendix S-Psychiatric and Medical Diagnoses Signs and Symptoms

Psychiatric Diagnoses and Signs/Symptoms

1. Depression:
 - Feeling sad or crying all the time.
 - Feelings of guilt or worthlessness.
 - Feelings of hopelessness or helplessness.
 - Thoughts of suicide or the desire to harm yourself (*suicidal ideation*).
 - Loss of touch with reality (*psychotic symptoms*). Seeing or hearing things that are not real (*hallucinations*) or having false beliefs about your life or the people around you (*delusions* and *paranoia*).
2. Schizophrenia:
 - Hallucinations (you are seeing, hear see, or feel things that do not exist)
 - Disorganized speech that does not make sense to others.
 - Delusions. (you are feeling being attacked, harassed, cheated, persecuted or conspired against.
 - Grossly disorganized (confused or unfocused) behavior or extremely overactive or underactive motor activity (*catatonia*).
 - Negative symptoms such as bland or blunted emotions (*flat affect*), loss of will power (*avolition*), and withdrawal from social contacts (*social isolation*).
3. Bipolar
 - Inflated self-esteem or feeling of increased self-confidence.
 - Decreased need for sleep.
 - Unusual talkativeness (rapid or pressured speech) or the feeling of a need to keep talking.
 - Sensation of racing thoughts or constant talking, with quick shifts between topics that may or may not be related (*flight of ideas*).
 - Decreased ability to focus or concentrate.
4. Suicidal Ideation
 - Isolating oneself.
 - Withdrawing from friends and family.
 - Giving away possessions, saying good-bye and acting aggressively.
 - Sleeping more or less than usual.
 - Talking about feeling hopeless or being a burden.
5. Psychosis
 - Delusions, such as: feeling excessive fear or suspicion (*paranoia*).
 - Believing something that is odd, unrealistic, or false, such as having a false belief about being someone else.

- Hallucinations.
 - Disorganized thinking, such as thoughts that jump from one to another that do not make sense to others.
6. Anxiety
- Restlessness, irritability
 - Fatigue.
 - Difficulty concentrating.
 - Muscle tension.
 - Difficulty sleeping or unsatisfying sleep.
7. Paranoia
- Medicines do not seem to be helping.
 - You feel extremely fearful and suspicious that something will harm you.
 - You feel hopeless and overwhelmed.
 - You feel like you cannot leave your house.
 - You have trouble taking care of yourself.
8. Schizoaffective
- Hearing, seeing, or feeling things that are not there (*hallucinations*).
 - Having fixed, false beliefs (*delusions*). The delusions usually are of being attacked, harassed, cheated, persecuted, or conspired against (*paranoid delusions*).
 - Speaking in a way that makes no sense to others (*disorganized speech*).
 - withdrawal from other people, and lack of emotions.
9. PTSD
- Recurrent, unwanted distressing memories while awake.
 - Recurrent distressing dreams.
 - Sensations similar to those felt when the event originally occurred (*flashbacks*).
 - Intense or prolonged emotional distress, triggered by reminders of the trauma. This may include fear, horror, intense sadness, or anger.
 - Marked physical reactions, triggered by reminders of the trauma. This may include racing heart, shortness of breath, sweating, and shaking.
10. Polysubstance abuse
- You have chest pain, you have abdominal pain, you have nausea, you have vomiting
 - You have shortness of breath, you have an irregular heartbeat.
 - You have fainting spells, you have shaking or tremors.
 - You have weakness or tiredness (*lethargy*), you have a rash or swelling in any part of the body.
 - You have increased bleeding, rectal bleeding, vaginal bleeding, or you bruise easily.
11. Overdose

- Behavior changes, sleepiness, slowed breathing.
- Nausea and vomiting.
- Seizures, changes in eye pupil size (very large or very small).
- Cold and clammy skin, pale skin, blue lips.
- Loss of consciousness.

12. Parkinson's

- Uncontrolled shaking (*tremor*) of the hands.
- Walking, talking, getting out of a chair, and new movements become more difficult.
- Muscles get stiff and movements become slower.
- Balance and coordination become harder.
- Depression, trouble swallowing, urinary problems, constipation, and sleep problems can occur.

13. HIV

- Low-grade fever, night sweats
- Rash, sore throat
- Fatigue.
- Headaches.
- Nausea, vomiting, or diarrhea.

14. Adjustment Disorder

- Sadness, depressed mood, or crying spells.
- Loss of enjoyment, trouble sleeping
- Change in appetite or weight.
- Sense of loss or hopelessness, thoughts of suicide
- Anxiety, worry, or nervousness.

Medical Diagnoses and Signs/Symptoms

1. Hyperglycemia

- Frequent urination.
- Dry mouth, thirsty
- Blurred vision.
- Tired or fatigue, weakness, sleepy.
- Tingling in feet or leg.

2. Hypoglycemia

- Sweating (*diaphoresis*), change in body temperature.
- Shakiness, hunger, dry mouth, headache, lightheadedness
- Anxiety, irritability, difficulty concentrating, confusion

- Tingling or numbness in the hands or feet.
 - Altered speech and coordination, change in mental status
3. End Stage Renal Disease (ESRD)
- Swelling (*edema*) of the legs, ankles, or feet.
 - Tiredness (*lethargy*), confusion
 - Problems with urination, such as decreased urine production, frequent urination, especially at night.
 - Muscle twitches and cramps, persistent itchiness.
 - Loss of appetite, nausea and vomiting
4. CHF
- Shortness of breath with activity, such as climbing stairs.
 - Swelling of the feet, ankles, legs, or abdomen, unexplained weight gain, loss of appetite, nausea
 - Difficulty breathing when lying flat (*orthopnea*), rapid heartbeat, persistent cough,
 - Waking from sleep because of the need to sit up and get more air.
 - Fatigue and loss of energy, feeling light-headed, dizzy, or close to fainting.
 - Increased urination during the night (*nocturia*).
5. COPD
- Shortness of breath, especially with physical activity.
 - Deep, persistent (*chronic*) cough with a large amount of thick mucus.
 - Wheezing, rapid breaths (*tachypnea*), chest tightness, fatigue, weight loss
 - Gray or bluish discoloration (*cyanosis*) of the skin, especially in your fingers, toes, or lips.
 - Frequent infections or episodes when breathing symptoms become much worse (*exacerbations*).
6. Hyponatremia
- Nausea and vomiting, appetite loss
 - Confusion, lethargy, agitation.
 - Headache, seizures, unconsciousness.
 - Muscle weakness and cramping.
 - Feeling weak or light-headed, having a rapid heart rate.
7. Acute Kidney Injury (AKI)
- Swelling (*edema*) of the legs, ankles, or feet.
 - Tiredness (*lethargy*), confusion
 - Nausea or vomiting.

- Problems with urination, such as: painful or burning feeling during urination, decreased urine production, bloody urine.
- Muscle twitches and cramps.

8. Malnutrition

- Fatigue, weakness.
- Dizziness, fainting, poor memory
- Weight loss.
- Lack of menstruation.
- Hair loss.

9. Constipation

- Having fewer than three bowel movements a week.
- Straining to have a bowel movement.
- Having stools that are hard, dry, or larger than normal.
- Feeling full or bloated, not feeling relief after having a bowel movement.
- Pain in the lower abdomen.

10. Urinary Tract Infection (UTI)

- Frequent and intense urge to urinate and a painful
- Burning feeling in the bladder or urethra during urination
- Tired, shaky, and weak and have muscle aches and abdominal pain.
- Pain in your back or sides below the ribs, nausea, and vomiting.
- A fever may mean the infection is in your kidneys.

11. Dehydration

- Thirst, dry lips, dry mouth, sunken eyes.
- Skin does not bounce back quickly when lightly pinched and released.
- Dark urine and decreased urine production.
- Decreased tear production.
- Headache.

12. Type 2 Diabetes

- Increased thirst (*polydipsia*), increased urination (*polyuria*), increased urination during the night (*nocturia*).
- Sudden or unexplained weight changes.
- Frequent, recurring infections.
- Tiredness (*fatigue*), weakness.
- Vision changes, such as blurred vision.

13. Hypertension

- Extremely high blood pressure (*hypertensive crisis*) may cause headache, anxiety,

shortness of breath, and nosebleed.

14. Irritable Bowel Syndrome (IBS)

- Diarrhea, constipation, or both, a feeling of having more stool left after a bowel movement
- Abdominal swelling or bloating.
- Feeling full or sick after eating a small or regular-size meal.
- Frequent gas.
- Mucus in the stool.

15. Foley catheter

- You have pain, fever, swelling, redness, or pus where the catheter enters the body.
- You have pain in the abdomen, legs, lower back, or bladder.
- You see blood fill the catheter, or your urine is pink or red.
- You have nausea, vomiting, or chills.
- Your catheter gets pulled out.

16. Suprapubic Catheter

- You have chills, nausea, or back pain.
- You have trouble changing your catheter.
- Your catheter comes out.
- You have blood in your urine.
- You have no urine flow for 1 hour.
- You have a fever.