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# An analysis of interprofessional rounds effect on readmission rates and patient satisfaction

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An Analysis of Interprofessional Rounds Effect on Readmission Rates and Patient  
Satisfaction

Cynthia F Atkinson

Clinical Research Project submitted to the Graduate Faculty of

JAMES MADISON UNIVERSITY

In

Partial Fulfillment of the Requirements

for the degree of

Doctor of Nursing Practice

School of Nursing

December 2018

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## **Abstract**

Evidence supports an interprofessional approach to patient care reduces readmissions, mortality, costs, and length of stay while simultaneously increasing communication, collaboration, and satisfaction of care providers and patients (Vazirani, S., et al, 2005). The health care team in an acute care setting, especially direct patient care providers such as nurses and ancillary disciplines must assess the discharge needs of patients from admission to the hospital until discharge disposition (Zakzesky, Klink, McAndrew, Schroeter, & Johnson, 2015). The purpose of this study was to determine if interprofessional rounds improved patient satisfaction and reduced readmission rates. The interprofessional team consisted of the hospitalists, case manager, charge nurse, unit coordinator and pharmacist when available. The Institution for Health Improvement's (IHI) Plan-Do-Study-Act (PDSA) was the framework used for this quality improvement project. Six PDSA cycles took place for evaluation and adjustments as needed. Throughout the project, minimal improvement was seen in both hospital readmission numbers and patient satisfaction over the course of six months. Additional education and training are recommended before replication to other units. Effective communication from different disciplines provides necessary information for patient-centered care on a daily basis. If patients who have a good understanding of their discharge plan, scheduled appointments, transportation, and are discharged with the necessary equipment, a readmission could be avoided

**Keywords:** interprofessional, multidisciplinary, readmission, patient satisfaction

### **Introduction**

In response to the U.S. affordable Care Act in 2010, the Centers for Medicare & Medicaid Services (CMS) sought to reduce Medicare payments to hospitals through a Value-Based purchasing program (Amin et al., 2014). The CMS had put a strong emphasis on decreasing readmission rates and subsequent withholding of reimbursement for hospitals (Zakzesky, Klink, McAndrew, Schroeter, & Johnson, 2015). The health care team in an acute care setting, especially direct patient care providers, such as nurses and ancillary disciplines must assess the discharge needs of patients from admission to the hospital until discharge disposition (Zakzesky, et al., 2015). The collaboration between physician teams, ancillary providers, and nursing teams for the patients' discharge needs cannot be overlooked (Zakzesky, et al., 2015).

### **Background**

The study took place in a 255-bed community hospital in rural Mid-Atlantic state. The hospital sees an average of 11,000 plus patients annually. The community hospital had concerns regarding lack of reimbursement based on readmissions, decreased safety, patient satisfaction, and increase in hospital cost (Burns, K., 2011). Evidence supports an interprofessional approach to patient care reduces readmissions, mortality, costs, and length of stay while simultaneously increasing communication, collaboration, and satisfaction of care providers and patients (Vazirani, S., et al, 2005) (Preen D, et al, 2005). According to Burger (2007), interprofessional rounds will enable all members of the team caring for patients to offer individual expertise and contribute to patient care in a collaborative method.

The hospital had financial concerns regarding moving forward in the future. A major insurance company was in negotiations with the hospital over reimbursement. Due to the increase through-put (patient flow) issues, the emergency room was backing up to a point of boarding patients. The physicians, case management and nursing staff reported issues with communication. Lack of interprofessional communication delays a patient's discharge, ties up available beds, reduces availability to accept admissions and transfers, promotes readmissions, and decreased patient satisfaction (Burns, K., 2011).

Readmission rates at the hospital for the whole hospital were 17.1 % for the first quarter of 2017 when compared to the Virginia overall rate of 17.04% and was significant enough to warrant a reduction goal.

Patient satisfaction on the discharge process from August 2017 to December 2017 averaged 73.7% positive in 778 patients. Patients' satisfaction with doctor/nurses' communication for the month of December 2017 was 60.7% in 89 patients. Patients' satisfaction with the understanding how to manage their health was 48.9% in 94 patients in the month of December 2017.

At one time, hospitalists were rounding with the nurses on the telemetry unit. This initiative became inconsistent and eventually was discontinued. Anecdotal information on reasons for this phase out included nurses and hospitalist stating that it took too much time out of their busy schedules. New administration at the hospital valued patient-centered care and believed interprofessional collaboration was essential in providing quality care. The decision was made by the Chief Medical Office and administration to implement interprofessional rounds.

### **Literature Review**

Interprofessional collaboration has been supported by international health organizations, governments, and local health jurisdictions as a means of addressing complex patient care needs, improving hospital performance measures, and improving health outcomes (Prystajeky, Lee, Abonyi, Perry, & Ward, 2017). Interprofessional rounding is a term used when various professionals such as nurses, pharmacist, physicians, surgeons, social workers, and other healthcare providers gather to discuss the plan of care strategies of a hospitalized patient (Beque et al., 2012).

### **Patient satisfaction scores**

Beque et al (2012) conducted a retrospective study of 3,077 thoracic surgical patients with cancer to assess the effects of interprofessional rounds on length of stay, patient satisfaction, admission to post discharge facility, and the use of home care or hospice services in comparison to patients who did not have interprofessional rounds. Interprofessional rounds were done each day at the bedside and are essential to improving communication concerning the patient condition, Interprofessional rounding decreases medical errors and improves the quality of care of hospitalized patients (Beque et al., 2012). The study results show some decrease in patient satisfaction scores (Beque et al, 2012). Patient satisfaction scores were slightly higher in the interprofessional rounding group versus those patients who did not receive rounds (Beque et al, 2012).

In a systematic review in 2016 by Mercedes, Fairman, Hogan, Tomas & Slyer, two studies showed no change in patient satisfaction ( $p=0.76$ ) and one study trended toward increased patient satisfaction after 12-month intervention. Six studies demonstrated an improvement in staff satisfaction ( $p<0.05$ ) (Mercedes, Al, et.al. 2016).

### **Readmission rates**

A study on interprofessional collaboration on rounds noted a reduction of readmission rates and higher patient satisfaction (Menefee, 2014). This study, using the Menefee Model, noted an increase in patient satisfaction and reduction in readmission rates. Good communication, cooperation, coordination, mutual respect, leadership, and shared responsibility are the key components in interprofessional collaboration (Menefee, 2014). A decrease in readmission rates went from 14.3% at 6 months before implementation to a rate of 6% at 12 months after rounds began (Menefee, 2014). The inter-professional team attributes the decrease is due to the model's focus on care transition planning and team collaboration has been the major contributor to the reduction in readmissions (Menefee, 2014). The sharing of information in rounds and the team's focus on the anticipated discharge date was also thought to contribute to the decrease in readmissions (Menefee, 2014). Patient satisfaction increased by 9.5 points after 6 months of implementation (Menefee, 2014).

In 2014, Townsend-Gervis et. al, a study was conducted at a 339-bed hospital implementing interprofessional rounds. Collaboration between disciplines is necessary to provide safe and effective patient care (Townsend-Gervis et.al. 2014). Charge nurses were managing the rounds. Nurses (n=111) participated in this study. Patient satisfaction showed some improvement. The hospital noted a decrease in readmission rates in the third to fourth quarter of 2011 when interprofessional rounds were implemented (Townsend-Gervis et.al, 2014). Readmission rates decreased from 14.5% to 5.2 %. (Townsend-Gervis et.al, 2014). Studies have shown interprofessional collaboration during rounds can improve readmission rates and patient satisfaction.

### **Specific Aims**

The purpose for this project was to determine if interprofessional rounds increased patient satisfaction and decreased readmission rates in the hospital. Aims to reach this goal were

- Identify the stakeholders involved in the interprofessional rounding.
- Provide education to nursing staff and physicians regarding interprofessional rounding.
- Identify barriers and factors contributing to non-adherence to interprofessional rounding.
- Increase patient satisfaction scores by 2.5% and reduce readmission rates by 10% by implementing interdisciplinary rounding on the progressive care unit with the physicians, nurses, case managers, respiratory, and pharmacy.
- Evaluate patient satisfaction and readmission data prior to implementation, at 3 months, and 6 months.
- Identify measures to sustain project intervention.

### **Theoretical model**

The Institution for Healthcare Improvement's (IHI) framework of Plan-Do-Study-Act (PDSA) was the method for evaluating the project. The PDSA is a logical cycle for improvement that supports ongoing adjustment and refinement in the plan (White, Dudley-Brown, & Terhaar, 2016). When coupled with application of evidence, PDSA supports careful application of evidence and continued refinement based on local data that describe specific patient experiences and responses (White et al., 2016). In the planning stage, a team is formed to plan the test and include a plan for collecting the data

(Institute for Healthcare Improvement, 2018). The team will discuss three questions for the test:

- 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 (Institute for Healthcare Improvement, 2018)?

In the Do stage, the test will be run on a small scale. Data will be collected, and observations will be made during the intervention (Institute for Healthcare Improvement, 2018). During the Study phase, the results will be analyzed and compared to the predictions during the planning stage (Institute for Healthcare Improvement, 2018). The Act stage is based on what is learned from the test, areas for modifications in the intervention, and plans for the next step or cycle of PDSA if needed (Institute for Healthcare Improvement, 2018).

PDSA is a rapid-cycle quality improvement method that identifies, implements and measures changes to improve a process or system. Rapid-cycle improvements suggests changes are made and tested over periods of three months or less, rather than eight to twelve months for a normal quality improvement change (Institute for Healthcare Improvement, 2018).

## **Methodology**

### **Context**

The project was piloted on the telemetry unit with plan to progress to the other acute units based on the evaluation results. The telemetry unit served 4,356 patients in 2015 and 2016. The telemetry unit, with 55 beds, was chosen by the interprofessional

team to start the interprofessional rounds. The Interprofessional team believed if rounds can be started successfully on the telemetry unit, then Interprofessional rounds (IP) rounds will likely be successful on other units.

### **Ethical Considerations**

An Institutional Review Board (IRB) approval was granted from the primary investigator's institution and the hospital. No patient identifiers were used, and only aggregated data was reported. Data was kept on hard drive and secured using a double password. There were no competing or conflicts of interest.

### **Implementation**

Several cycles can be used to evaluate an improvement project for necessary improvements for sustainability (White, Dudley-Brown, & Terhaar, 2016). The project went through six cycles PDSA cycle. Each PDSA cycle was reviewed every 30 days at the end of October 2017, December 2017, January 2018, February 2018, March 2018 and June 2018. Each PDSA cycle was evaluated to see what worked and what adjustments necessary to proceed.

### **PDSA cycle one**

The hospital leadership suggested a form of interprofessional rounds (IR) to be implemented at the hospital. The first PDSA cycle for the project was started. In May of 2017, a project group consisting of interprofessional members was formed to discuss interprofessional rounds piloting on the telemetry unit. The team consisted of the director of the unit, the charge nurse, representative from hospitalists group, respiratory therapy, physical therapy, IT, pharmacy, case management, and process management. The team discussed objectives for the project and decided on the meeting times throughout this

project. The team investigators, who researched the best evidence-based practice, presented findings related to interprofessional rounding, communication, through-put, patient satisfaction, and readmission rates. After discussion, the team decided on the following goal: increase communication between disciplines, increase the amount of discharges prior to noon, improve patient satisfaction with discharge process, improve readmission rates, and improve overall patient outcomes. This project addressed the patient satisfaction and readmission rates for the telemetry unit. Other goals were studied by other projects related to interprofessional rounds on the telemetry unit. The project group decided to use a special designed documentation template for inter-professional rounds (Appendix E), educate staff and meet every two weeks. A timeline was formed for this project (Table 1).

### **Education of staff**

The Knowles Theory was the educational theory used for implementing education on interprofessional rounds. Knowles's adult-learning theory was followed to educate the nursing staff on the new interprofessional intervention and template in Meditech (Russell, 2006). Knowles says motivation is necessary to help adults learn the best, especially when convinced of the need for knowing the formation. (Russell, 2006). Most adult learners develop a preference for learning based on their childhood learning patterns (Russell, 2006). There are visual learners who prefer seeing that they are learning with pictures and images. Auditory learners prefer to hear the message or instructions being given (Russell, 2006). These learners prefer to have someone talk them through the process (Russell, 2006). Kinesthetic learners prefer to sense the position and movement of the task or "hands on" learning.

As part of PDSA cycle 1, the education team designed a plan to provide education on interprofessional rounds. Education for interprofessional rounds concentrated on the staff case management, nurses, and hospitalist taking care of patients on the telemetry unit. The chief hospitalist educated members of the hospitalists team on rounds. Facilitators of the project team carried out the education on telemetry and other pertinent departments. An educational email will be sent out to all staff members on the telemetry unit and to the directors of various departments. Flyers were posted on the unit announcing the start of rounds. Facilitators of the project team will attend staff meetings and daily huddles to educate the nursing staff about interprofessional rounding on the telemetry unit. Interprofessional round team facilitators also provided roving education rounds to assist the nursing staff in finding and clicking on the intervention into the computer, answering questions, and gathering input to further help the staff on the telemetry unit.

### **Interprofessional Rounds**

On October 4, 2017, the first implementation of Interprofessional rounds took place in the telemetry conference room. The conference room has a large television with access to Meditech, allowing the patient's chart to be viewed by everyone in the meeting. The first week one hospitalist was chosen to discuss his/her patients. The rounds took place on the telemetry unit starting at 11 am, Monday through Friday. The rounding team consisted of the hospitalist, case manager, scribe, charge nurse and unit coordinator. Physicians had a predetermined time to attend IR. The time allotment for discussion was 1.5 to 2 minutes per patient. Physicians was notified by text message when the previous

physician is close to finishing. This provided a reminder for the physician and reduced the wait time in case the previous runs over projected time.

IR was led by the case manager. Each patient under the care of the hospitalist attending the IR was discussed. Only issues related to discharge were discussed to keep the time per patient manageable. An outline for flow of discussing was given to the hospitalist and IP team for guidance. (Appendix G) All discussion was documented on a template designed by the IR project group. After a month, a second hospitalist was added to rounds. The initial plan was to add a new hospitalist every week until the interprofessional round team reached full participation.

### **PDSA Cycle 2**

The IP team decided the flow of the template was working. The team decided some sections and items were not needed in the template. PDSA cycle 2- October 31, 2017, the project group decided to revise the template to flow with the order of interprofessional rounds. The revised template went into use on December 12, 2018. A new template was designed for this cycle. (Appendix F)

### **PDSA cycle 3**

On December 14, 2017 the decision was made to move IR to the nurses' desk to encourage hospitalist attendance. The IP team felt the staff nurses could come to rounds easily. The interprofessional team decided the go-live date with all hospitalist participation was January 2, 2018.

### **The Documentation Template**

The IR project team designed a template to document the IR during the summer of 2017. The goal of the template was to allow staff to access discharge information in one

assessment (Appendix E). Currently, discharge documentation was fragmented and difficult to find in the computer (Meditech). The interprofessional team wanted the template to “work” and flow with the discussion during rounds. Many areas of the template, if checked sent notifications to the intended department. For example, if the wound center follow-up was checked a notification is sent to the office allowing clerical staff to schedule follow up appointments for the patient. In an effort to reduce double documentation, many areas of the template pre-populated with data already collected by case management, nursing, and/or respiratory. Documentation on the IR template is restricted to members of case management only. All other staff in the hospital can view the documentation in the electronic medical record (EMR), but unable to document on the template.

#### **PDSA cycle 4**

The case managers discussed the burden of heavy documentation using the template. In fact, the case managers stopped using the template to document the rounds. The computer software was not pulling documentation over to the case manager documentation for admission and discharge. The case managers were documenting in three different places. In February 2018, the IP team decided to stop using the template for interprofessional rounds.

#### **PDSA cycle 5**

In February 2018, the interprofessional rounds participants discussed at the IP meeting the rounds could better flow if the goal time could be reduced from 10 minutes with each patient (1 hour for rounds) to a limit of 30 minutes total. The team decided to

stop giving the hospitalist a “heads up” page. The hospitalist were given a text prior to their assigned time to remind them to come to rounds.

### **PDSA cycle 6**

The interprofessional team decided to remove assigned times for the hospitalist. The hospitalists were going out of turn if the assigned hospitalist were not present. The float charge nurse on the floor had patients which prevented participation in rounds. Now that hospitalists were adhering to attending rounds, it was important to encourage nursing participation. The hospitalists were asked to give a two-sentence summary of each patient during rounds. Often, they would give more information than needed. The IP team were pleased with the way rounds were going. Based on the data from the study, implementing rounds on the medical unit would begin.

In summary, several cycles can be used to evaluate an improvement project for necessary improvements for sustainability (White, Dudley-Brown, & Terhaar, 2016). The project went through six cycles form May 2017 with the last cycle ending the end of June. Each PDSA cycle was evaluated to see what worked and what adjustments necessary to proceed.

### **Data Analysis**

A retrospective study was performed to evaluate outcomes in improved patient satisfaction and reduction in readmissions with implementation of interprofessional rounds.

Data was gathered pre-implementation (prior to Jan 2, 2018), at 3 months, and at 6 months post implementation. Data was collected from two different data bases. The patient experience director provided the data from the patient satisfaction survey

provided by National Research Corporation on behalf of the hospital. The patient satisfaction survey is a 0-5 Likert scale. The baseline patient satisfaction average return rates were 29% of total patients which was comparable to national returns. In August 2017, a question was added to the survey: Are you satisfied with your discharge?

The 30-day readmission rate data for Medicare patients was obtained by the decision support manager from Health Quality Innovators on behalf of the hospital. The data results for the readmission rates and patient satisfaction scores are available on a weekly basis in an Excel spreadsheet.

### **Results**

Demographic data was collected to include age, gender, ethnicity and marital status. (Table 2). There were a total of 2261 patients during this study. The majority of the patients were older than 65 years of age (70%). Medicare reimbursement for readmission was an issue of concern with the 65 plus (70%). Quantitative measures of the effectiveness of interprofessional rounds on patient satisfaction on the telemetry floor were compared at three intervals: 1) prior to implementation; 2), three months; and 3). six months. The data was aligned with the aims and mission of this project.

Pre-data for patient satisfaction was began September 2017. Patient satisfaction with discharge in September 2017 was 72.5 %. Therefore the 2.5 % goal of increased patient satisfaction was set at 75% satisfied. The goal was met in March and May 2018 at 77.4 % respectively. (Figure 2). In June 2018, patient satisfaction went below goal at 62.5 %. The only factor noted for the month of June was the census was low on the telemetry unit. This could have skewed the results.

Readmission rates prior to live implementation with all the hospitalists was in December 2017 with 17.1 %. The 10% goal for reducing readmission rates was 15%. In January 2018 the readmission rate was 15.1% and 14.97% in February 2018 meeting the goal. The readmission rates actually increased to 20.63% in May 2018. (Figure 1).

### **Discussion**

Evaluation of translation projects must be accurate, scholarly, and most importantly provide convincing evidence that changes in outcomes are a result of the intervention project and that translates the evidence into practice (White et al., 2016). Evaluation takes place in seven phases: planning, data collection, data cleansing, data manipulation, exploratory analysis, outcomes analysis, and dissemination reporting and presentation (White et al., 2016). Phase one: Evaluation takes place during the planning phase (White et al., 2016). The problem statement guides the projects aims to the metrics to be evaluated for success of the intervention (White et al., 2016). Phase two: data is gathered to describe the changes made and how the changes are implemented (White et al., 2016).

The implementation of interprofessional rounds had proven to be a huge cultural change for this rural hospital. Interprofessional rounds took 14 months for the change to become a part of everyday life for the nursing staff, case management, pharmacists, and hospitalists. At the end of six months, the hospitalists had become accustomed to interprofessional rounds. Nine months after implementation, hospitalists on the interprofessional team were surprised the project had been in process for over a year. Interprofessional rounds had become routine. The case managers stated the rounds had become an important aspect of their work and very helpful for planning the patient's discharge. One case manager, who initially was not in favor of rounds. stated the rounds

have made her job easier. Since interprofessional rounds implementation, new hospitalists had started at the hospital since rounds and stated enthusiasm for the interprofessional rounds.

The purpose of this study was to determine if interprofessional rounds increased patient satisfaction and decreased readmission rates. Patient satisfaction had reached the goal at 77.4 % in March and May of 2018. Interprofessional rounds were held at the nursing desk and not in the patient rooms. The interprofessional project team discussed having the rounds at the bedside but did not believe it would be feasible at this time. It was difficult to link interprofessional rounds with patient satisfaction since the patient was not directly involved in the rounds. There may have been a relationship to efficiency in discharge planning with the patient satisfaction with their discharge.

Readmission rates decreased by 2.5% during January and February 2018 to a 15 % readmission rate. Readmission rates increase to 20% during the last 4 months of the study. There were several variables which probably affected 30-day readmission rates. Inadequate discharge instructions to the patient may have had effect on readmission.

This study provides additional information to what is known regarding the relationship between interprofessional rounds, patient satisfaction, and readmission rates. This study was very replicated a study by Menefee (2014). Menefee found patient satisfaction increased by 9.5 % and readmission rates decreased from 14% to 6% in 6 months. Other studies (Beque,et.al) (Townsend-Gervis et.al, 2014) showed some increase in patient satisfaction and reduction in readmission rates. Studies have shown interprofessional collaboration is important for patient care. Lack of interprofessional

communication delays a patient's discharge, ties up available beds, reduces availability to accept admissions and transfers, promotes readmissions, and decreased patient satisfaction (Burns, K., 2011).

There were several limitations to this study that should be taken into consideration which may have affected the outcomes. There were several leadership changes from administration down to the telemetry unit during the project. For this rural hospital, change was very hard for the hospital staff. Interprofessional rounds caused a huge change in the work flow for the nurses, case managers, and the hospitalists. Several hospitalists did not want to take part in interprofessional rounds. The chief hospitalist had given incentives to encourage the hospitalist to come to rounds. At the end of the study, only one hospitalist had refused to come to rounds. Another limitation effecting the study was the loss of a major insurance company. Beginning June 2017, the hospital was in negotiations with a major insurance company regarding reimbursements. As of January 1, 2018, the insurance company declared the hospital as out of network hospital. A majority of the community and hospital staff were covered by this insurance company. The flu season may have affected readmission rates and lack of response rate to patient satisfaction surveys. The survey may not capture all of patients who had a positive stay due to lack of response in filling out the survey. Patients with a negative experience were more likely to respond to patient satisfaction survey with hopes for improvement in certain categories.

### **Implications for Nursing Practice**

The aims for this study was to explore the effect of interprofessional collaboration on patient satisfaction and readmission rates. Collaborative rounds have the potential to

improve patient care and satisfaction (Burns, 2011). Although there were no significant findings on the increase of patient satisfaction and a reduction of readmission rates, the interprofessional rounds improved the nurse, hospitalist, and case manager communication. Organizations that support collaboration and teamwork between professional experience significant improvements in outcomes as well as prevention of adverse events (Menefee, 2014).

Interprofessional education should be implemented in all healthcare curriculum, and in continuing education for nurses. According to the “Triple Aim” education and life-long career development of health professional must incorporate interprofessional learning and team-based care (Sullivan, Kioovsky, Mason, Hill & Dukes, 2015). After implementation on the telemetry unit, education and training were recommended for generalization to replicate to other units.

In regard to implications for sustainability, interprofessional rounds are continuing on the telemetry unit. The interprofessional rounds are in the planning phase to transfer to the medical unit at the hospital in this study. For sustainability, it is recommended a policy on interprofessional rounds, describing in detail all aspects of expectations, should be written. The protocol would hold hospitalist, nurses, and other healthcare workers involved in the patient’s care accountable.

Further research is needed to analyze the impact of outcome measures, such as time efficiency and cost effectiveness (Townsend-Gervis, et al, 2014). Further study is necessary to expand interprofessional rounds to all hospital settings for sustainability.

## Appendix A

**Table 1**

Interprofessional Rounds Timeline

May 30, 2017	Initial meeting of IPR group: Discussed background on project, building a model that works for the hospital, Best Practice Research, Team Meetings, and next steps. Initial group included hospitalists, case management, administration and process management. Decision was made to invite Therapies, Respiratory, a staff nurse, Floor Case Manager, IT, and QRM to meetings. <b>PDSA cycle 1</b>
June 14, 2017	Meeting discussion included: Sharing best practice research/ideas, create a framework for interprofessional rounds (who should be included, what patients do we discuss, where will Rounds take place, what time of day, hospitalist schedule, what information should be discussed, where do we document what was discussed?) <b>PDSA cycle 1</b>
June 28, 2017	Meeting discussion included: building a template in Meditech to document Interprofessional Rounds. Template to include: where the patient is going, foley or central lines needing attention, authorizations, DME needed, high risk meds after discharge, home O2, dietary education, new diabetic/insulin starts, wound vac needs, hospice needs, resource clinician needs, knowledge deficits of patient; team was formed to make template <b>PDSA cycle 1</b>
July 20, 2017	Meeting discussion included: review of template sample, feedback for template, review department notifications and which items to send to MD orders forward for signature, education plan for staff; Go Live date for pilot with one hospitalist participating will be 10/2/2017
August 30, 2017	Meeting with template team, process management, IT, and the Director of Case management to discuss template design
September 5, 2017	Meeting with template team, process management, IT, and the Director of Case management to discuss template design
September 14, 2017	Decision was made to add pharmacy to Interprofessional Rounds (was discussed at the beginning but pharmacy declined)
September 20, 2017	Meeting discussion included: review and feedback of final template, decision to hold rounds M-F at 11am, continue with staff education and support. Go Live date changed to 10/4/17. Participants will include:

	Scribe, Case Manager, Nurse and/or Charge Nurse, Hospitalist, and Pharmacist <b>PDSA cycle 1</b>
October 4, 2017	Go Live!! First template
November 2017	IPR meeting/regroup: Discussion included what is going well with rounds, not going well, what information is missing from template, what information is not needed, what should the flow of the template be, when do we increase the number of Hospitalist participating in rounds <b>PDSA cycle 2</b>
December 12, 2017	New Template started
December 14, 2017	Decision was made to move the location of Interprofessional Rounds to the Nurses Station. <b>PDSA cycle 3</b>
December 22, 2017	Meeting with Case Mangers: Discussion included: documentation of rounds, room assignments for case managers to ease work load during rounds. Decision made to not have scribe during rounds.
January 2, 2017	Go Live with full schedule of Hospitalist! <b>PDSA cycle 3</b>
February 2018	Interprofessional Rounds group meeting: <b>PDSA cycle 4</b> Stopped using template for documentation due to not recalling over to case manager admission and discharge documents. Hospitalist to condense information to what is pertinent within 10 minutes.
March 28, 2018	Interprofessional Rounds group meeting: Changed hospitalist time to 5 minutes. Limit rounds to 30 minutes total. The team decided to stop giving the hospitalist a “heads up” page. Discussed nursing and hospitalist participation <b>PDSA cycle 5</b>
April-May 2018	Assigned times for hospitalist removed. Give 2 sentence. Encourage nursing participation. <b>PDSA cycle 6</b>

## Appendix B

Table 2

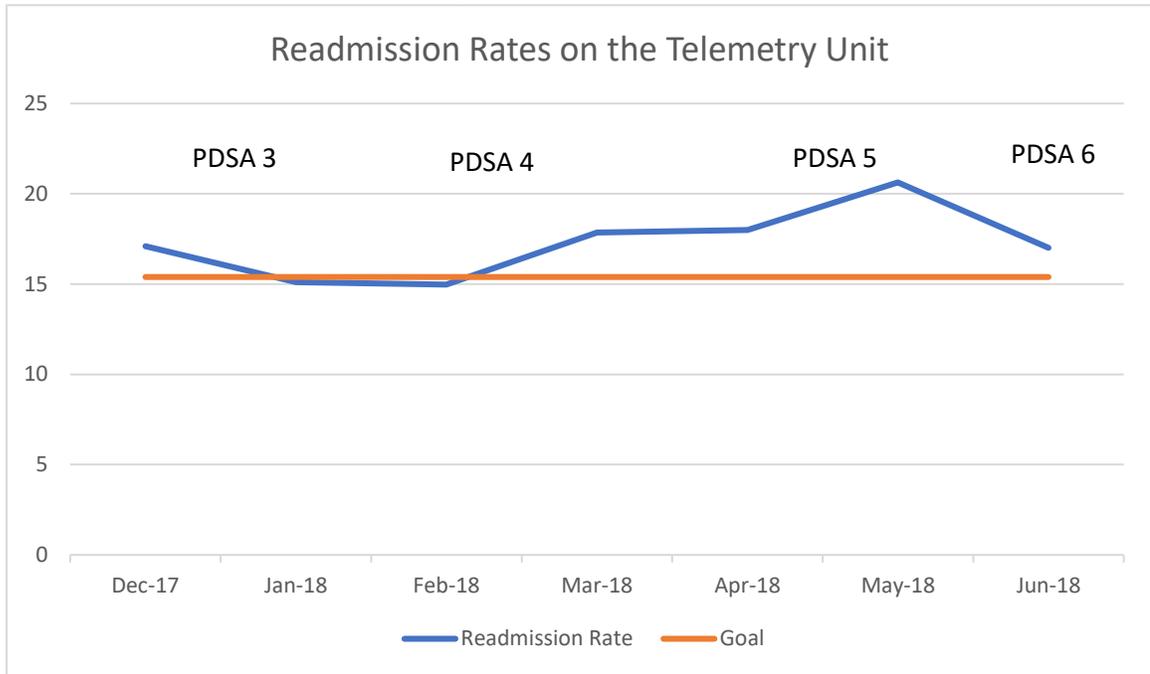
## Participants Characteristics

Demographics	Total I=2261 December 2017- June 2018	
<b>Age</b>	46 age 18-34	(2%)
	62 age 35-44	(3%)
	568 age 45-64	25%)
	1585 age 65 plus	(70%)_
<b>Ethnicity</b>	Asian	0.04%
	African-American-	5.5%
	Hispanic-	0.3%
	White-	93%
	Other-	1%
<b>Marital Status</b>	Married: 977	43%
	Separated: 13	0.6%
	Divorced: 368	16%
	Widowed: 556	25%
	Single:	14%

Appendix C

Figure 1

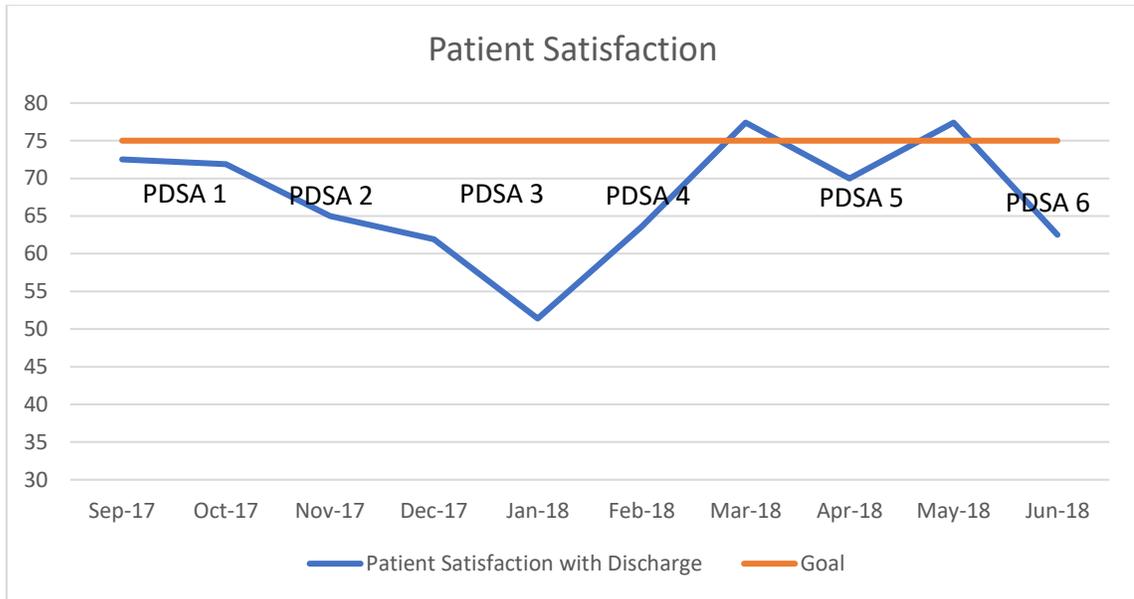
Readmission Rates on the Telemetry Unit



Appendix D

Figure 2

Patient Satisfaction Rates



**Appendix E**

**Interprofessional Rounds**

<b>Admission Information</b>	
Admission Date	<input type="text"/>
Readmission	<input type="radio"/> Yes <input type="radio"/> No
<b>Living Situation Prior to Admission</b>	
Living Situation	<input type="checkbox"/> Alone <input type="checkbox"/> Family <input type="checkbox"/> Significant Other <input type="checkbox"/> Spouse
Home Environment	<input type="radio"/> Home <input type="radio"/> Acute Rehab <input type="radio"/> Nursing Home <input type="radio"/> Apartment <input type="radio"/> Homeless <input type="radio"/> SNF <input type="radio"/> Assisted Living
Facility Name	<input type="text"/>
<b>Discharge Plan</b>	
Expected Discharge Date	<input type="text"/>
Level of Care	<input type="checkbox"/> Acute Care Facility <input type="checkbox"/> Home Alone <input type="checkbox"/> Intermediate Care Facility <input type="checkbox"/> AMA <input type="checkbox"/> Home Health <input type="checkbox"/> Long Term Acute Care <input type="checkbox"/> Assisted Living <input type="checkbox"/> Home w/Family-Caregiver <input type="checkbox"/> Shelter <input type="checkbox"/> CBC/CD-PAS(Medicaid Aide) <input type="checkbox"/> Hospice <input type="checkbox"/> Skilled Nursing Facility <input type="checkbox"/> Correctional Facility <input type="checkbox"/> Inpatient Rehab

<p>Nursing Facility</p>	<p> <input type="radio"/> AH Skilled                      <input type="radio"/> Bridgewater                      <input type="radio"/> Kendall                      <input type="radio"/> Summit  <input type="radio"/> Augusta Nursing &amp; Rehab      <input type="radio"/> Envoy                                      <input type="radio"/> Kings Daughters      <input type="radio"/> Trinity  <input type="radio"/> Avante-Harrisonburg              <input type="radio"/> Golden Living- Allegany              <input type="radio"/> Lifecare                      <input type="radio"/> Trinity  <input type="radio"/> Avante-Waynesboro              <input type="radio"/> Golden Living- Buena Vista      <input type="radio"/> Shenandoah              <input type="radio"/> VMR  <input type="radio"/> Brain Center                              <input type="radio"/> Harrisonburg Health&amp;Rehab  <input type="radio"/> Other <input type="text"/> </p>
<p>Acute Care Facility</p>	<p> <input type="radio"/> AH Rehab                      <input type="radio"/> Martha Jefferson                      <input type="radio"/> UVA Healthsouth                      <input type="radio"/> VA-Richmon  <input type="radio"/> Carilion                              <input type="radio"/> RMH                                      <input type="radio"/> VCU                                      <input type="radio"/> VA-Salem  <input type="radio"/> Catawba                              <input type="radio"/> Tranistional Care                      <input type="radio"/> VA-Martinsburg                      <input type="radio"/> Western Sta  <input type="radio"/> Kindred                              <input type="radio"/> UVA  <input type="radio"/> Other <input type="text"/> </p>
<p>Insurance</p>	<p> <input type="checkbox"/> Commercial    <input type="checkbox"/> Humana    <input type="checkbox"/> Medicaid    <input type="checkbox"/> Medicare    <input type="checkbox"/> Care         </p>
<p><b>Discharge Needs</b></p>	<p></p>
<p>Issues to be Resolved</p>	<p> <input type="checkbox"/> Central Line    <input type="checkbox"/> Core Measures    <input type="checkbox"/> Foley Catheter    <input type="checkbox"/> Other         </p>
<p>DME Ordered at Discharge</p>	<p> <input type="checkbox"/> None                      <input type="checkbox"/> Hospital Bed                      <input type="checkbox"/> Prosthetic                      <input type="checkbox"/> S  <input type="checkbox"/> Bedside Commode    <input type="checkbox"/> Hoyer Lift                              <input type="checkbox"/> Ramp                              <input type="checkbox"/> V         </p>

	<input type="checkbox"/> Bipap/Cpap <input type="checkbox"/> Lift Chair <input type="checkbox"/> Rollator <input type="checkbox"/> W <input type="checkbox"/> Cane <input type="checkbox"/> Nebs <input type="checkbox"/> Scooter <input type="checkbox"/> W <input type="checkbox"/> CPM <input type="checkbox"/> Oxygen <input type="checkbox"/> Shower Seat/Chair <input type="checkbox"/> V <input type="checkbox"/> Elevated Toilet Seat
<b>Respiratory</b>	
On Home O2?	<input type="radio"/> Yes <input type="radio"/> No
Home O2 Concentration	<input type="text"/>
<b>Dietary</b>	
Nutrition Needs	<input type="checkbox"/> Dietary Education <input type="checkbox"/> New Diabetic <input type="checkbox"/> New Insulin Start
<b>Pharmacy</b>	
Medications	<input type="checkbox"/> Anticoagulants <input type="checkbox"/> High Risk Meds <input type="checkbox"/> Home IV Antibiotics <input type="checkbox"/> Therapeutic I
<b>Wound</b>	
Wound Vac	<input type="radio"/> Yes <input type="radio"/> No
Follow Up with Wound Clinic?	<input type="radio"/> Yes <input type="radio"/> No
<b>Home Health Needs</b>	
Home Health Providers	<input type="radio"/> Amedysis <input type="radio"/> Continuing <input type="radio"/> Interim <input type="radio"/> Medi HH <input type="radio"/> Augusta Health <input type="radio"/> Continuum <input type="radio"/> Intrepid <input type="radio"/> Sentara

	<input type="radio"/> Carilion <input type="radio"/> Gentiva <input type="radio"/> Maxim <input type="radio"/> Other <input style="width: 200px; height: 15px;" type="text"/>
<p>Home Health Ordered Services</p>	<input type="checkbox"/> Aide <input type="checkbox"/> Psychiatric Nurse <input type="checkbox"/> Social Worker <input type="checkbox"/> Occupational Therapy <input type="checkbox"/> Skilled Nursing <input type="checkbox"/> Speech Therapy <input type="checkbox"/> Physical Therapy
<p><b>Hospice Needs</b></p>	
<p>Hospice Providers</p>	<input type="radio"/> Legacy <input type="radio"/> Rockbridge <input type="radio"/> Southern Care <input type="radio"/> Piedmont <input type="radio"/> Shenandoah <input type="radio"/> Other <input style="width: 200px; height: 15px;" type="text"/>
<p><b>Resource Clinician Needs</b></p>	
<p>Resource Clinician Consult</p>	<input type="radio"/> Yes <input type="radio"/> No
<p><b>Needs Prior to Discharge</b></p>	
<p>Forms to be Signed</p>	<input style="width: 500px; height: 25px;" type="text"/>
<p>Necessary Follow Up Appointments</p>	<input style="width: 500px; height: 25px;" type="text"/>

Patient  
Knowledge  
Deficits

Other

**Notification sent to the department**

**Documentation pulls over from already documented data**

**Appendix F**

**Revised Documentation Template**

<b>Physician Information</b>	
Admission Date	<input type="text"/>
Needs Prior to Discharge	<input type="text"/>
Post Discharge Needs	<input type="text"/>
Consult Hospice	<input type="radio"/> Yes
Consult Palliative Care	<input type="radio"/> Yes
Consult Resource Clinician	<input type="radio"/> Yes
<b>Discharge Needs</b>	
D/C Needs to be Resolved	<input type="checkbox"/> Central Line In Place <input type="checkbox"/> Foley Catheter in Place <input type="checkbox"/> Home Med List Incomplete
On Home Oxygen?	<input type="radio"/> Yes <input type="radio"/> No
Home Oxygen Concentration	<input type="text"/>
On Hospital Oxygen?	<input type="radio"/> Yes <input type="radio"/> No
Hospital Oxygen Concentration	<input type="text"/>
Follow Up w/Respiratory Therapy	<input type="checkbox"/> Home Oxygen Eval <input type="checkbox"/> Home Nebulizer Eval <input type="checkbox"/> Wean Oxygen
Medication Needs	<input type="checkbox"/> New Antithrombotic <input type="checkbox"/> Home IV Antibiotics <input type="checkbox"/> Other
Follow Up w/Pharmacy	<input type="radio"/> Yes
Additional Medication Need	<input type="text"/>
Follow Up with Wound Clinic	<input type="radio"/> Yes
Readmission Within 30 Days	<input type="radio"/> Yes <input type="radio"/> No
<b>Living Situation</b>	
Living Situation	<input type="checkbox"/> Alone <input type="checkbox"/> Family <input type="checkbox"/> Significant Other <input type="checkbox"/> Spouse
Home Environment	<input type="radio"/> Acute Rehab <input type="radio"/> Home <input type="radio"/> Nursing Home <input type="radio"/> Apartment <input type="radio"/> Homeless <input type="radio"/> SNF <input type="radio"/> Assisted Living <input type="radio"/> LTAC <input type="radio"/> Other <input type="text"/>

## Appendix G

### Interprofessional Rounds Guidelines

Rounds will consist of Attending physician, charge RN, Unit manager, Case manager, scribe (Debbie Grove), pharmacy (Monday, Wednesday, & Friday), and Palliative care. If palliative care shows up, the team will try to cover their patients first.

#### Attending physician

A quick 15 sec introductions.

#### Case Manager

Leads rounds using inter-professional template.

- ✓ Admission date
- ✓ Readmission yes or no
- ✓ Insurance status
- ✓ Living situation
- ✓ Home environment
- ✓ Discharge plans to include level of care, nursing facility

#### Attending physician, Case manager, Charge Nurse, Pharmacy (if present)

1. Discuss each patient's problem by problem
2. Review of status and plan of care
  - ✓ Foley
  - ✓ Tele
  - ✓ Central line
  - ✓ Advance diet
  - ✓ Change IV meds to PO
  - ✓ Increase activity
  - ✓ VTE prophylaxis
  - ✓ Code status
3. Discharge plan
  - ✓ Discuss important requests and concerns.
  - ✓ Discharge date



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