

CAPTURING FUNCTIONAL INDEPENDENCE MEASURE (FIM[®]) RATINGS

A SCHOLARLY INQUIRY PROJECT SUBMITTED TO THE OFFICE OF GRADUATE
EDUCATION OF THE UNIVERSITY OF HAWAII AT MĀNOA IN PARTIAL
FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF

DOCTOR OF NURSING PRACTICE

MAY 2015

By

Audrey Torres

Committee:

Mary Boland, Chairperson

Debra Mark

Ty Tomimoto

Dedication

This project is dedicated to my family, my husband Don, son Royce, daughter Kayla and my parents Albert (Roy) and Judith Nascimento. The support I received from my family over the last two years was considered priceless.

Acknowledgement

I would like to express my sincere gratitude to my committee chairperson Dean Mary Boland, Dr. Debra Mark and external advisors Ty Tomimoto and Dr. Timothy Roe from The Rehabilitation Hospital of the Pacific. Without their guidance and support this project would not have been possible.

I would like to express my heartfelt appreciation to the functional independence measure (FIM[®]) team, hospital administration, nursing and therapy staff at The Rehabilitation Hospital of the Pacific (RHOP) for their support and ability to embrace and sustain practice changes. The support over the past two years has been priceless and I'm thankful to be employed by a great organization.

Abstract

The FIM[®] rating system is an important quality measure for rehabilitation facilities and units as it is the only admission patient information that directly impacts reimbursement for care delivery. Past practice at the project site dictated that FIM[®] ratings were collected on day two or three of admission which allowed ample time for patients to rest but delayed the collection of FIM[®] ratings. This scholarly inquiry project (SIP) challenged the delay in collection of admission FIM[®] ratings and developed innovations to assess FIM[®] ratings on the day of admission.

An administrative FIM[®] quality improvement team was established to guide this project and was identified as the primary stakeholder with the goal to improve quality care and reimbursement. The project was designed to improve FIM[®] rating assessments on the day of admission.

The innovations included in this SIP were the establishment of the FIM[®] team, nursing staff training on early capture of FIM[®] ratings, and the development of an electronic FIM[®] recording template. These innovations were shown to be successful in changing practice to capture FIM[®] ratings immediately upon admission. This SIP was implemented and evaluated in just under one year and included the efforts of multiple RHOP staff members dedicated to improving the quality of care. Overall this SIP is considered to be successful with six of the seven objectives being met. The last objective demonstrated an increase in reimbursement but not enough to exceed the predicted margin to count the objective as being met.

As FIM[®] ratings were captured earlier upon admission the data demonstrated that lower FIM[®] ratings were documented and resulted in lower overall admission FIM[®] ratings in 2014 as compared to 2012. In addition to practice changes and FIM[®] training, creating the FIM[®] team

was an essential innovation as the team prioritized the capture of FIM[®] ratings immediately upon admission. FIM[®] data collected pre and post innovation demonstrated that early capture of FIM[®] ratings is essential to provide quality care and accurately estimate length of stay.

Table of Contents

Acknowledgement	iii
Abstract	iv
List of Abbreviations	xii
Chapter 1. Introduction	1
Purpose.....	1
Significance.....	3
Conceptual Framework.....	5
Background.....	6
Nursing Practice Change.....	7
Outcomes	8
Capturing Functional Independence Measure Ratings	10
Chapter 2. Conceptual Framework: Logic Model	12
Situation	12
Priorities.....	13
Assumptions.....	13
External Factors	13
Outputs.....	14
Outcomes	14
Literature Synthesis	16
Research and Related Literature	17
FIM® Ratings	19
Stroke Rehabilitation	20
Prospective Payment System	20
Nursing Practice Change.....	21
Critique and Synthesis	22

Summary of the Literature Synthesis.....	22
Chapter 3. Methods.....	26
Purpose.....	26
Design.....	26
Situation.....	29
Definitions.....	30
Setting.....	32
Assumptions.....	32
Population.....	34
Sample.....	34
External Factors.....	34
Internal Factors.....	35
Outputs.....	35
Pre-SIP Activities Implemented.....	36
Innovative Practice Changes.....	38
Data Analysis.....	41
Data Analysis Plan.....	42
Data Collection.....	43
Project Financials.....	46
Required Resources.....	46
Ethical Considerations.....	47
Limitations.....	48
Timeline.....	49
August 2012.....	49
December 2013.....	50
January 2014.....	50

March 2014	50
April to June 2014.....	51
July 2014.....	51
Outcomes	51
Measures	52
Chapter 4. Results	57
Preliminary Practice Changes	57
Description of Sample.....	58
Patient Population	58
Age of Population	61
Descriptive Analysis	63
Objectives & Outcomes	64
Expected and Actual Outcomes Relative to Objectives	64
Summary	79
Chapter 5. Discussion of Findings	82
Expectations and Actual Outcomes Compared to Objectives	82
Interpretation of Findings	83
FIM® Ratings	84
Documentation	85
FIM® Team	87
Overall Review and Unexpected Findings	88
Implications and Recommendations	90
Scientific Underpinnings for Practice	91
Organizational & Systems Leadership for Quality Improvement & Economics	92
Facility Leadership.....	93
Evidence-Based Practice & Translational Science	96

Information Systems Technology	97
Health Care Policy & Ethics	98
Inter-professional Collaboration	98
Plans for Dissemination	99
Summary	99
References.....	102

List of Tables

Table 1. Mosby Research Tool and Articles Synthesized	19
Table 2. Description of FIM [®] Components	33
Table 3. Data Collection	44
Table 4. Data Analysis	45
Table 5. Overall SIP Timeline	49
Table 6. Population Data.....	60
Table 7. Nursing Staff Trained on FIM [®]	65
Table 8. Nursing Staff Pre and Post-test Scores	66
Table 9. Admission FIM [®] Ratings Documentation	67
Table 10. 2014 Admission FIM [®] Ratings Documentation	74
Table 11. Facility Admission FIM Ratings.....	75
Table 12. Length of Stay Efficiency Ratings.....	76
Table 13. Program Evaluation Model (PEM) Scores	77
Table 14. Reimbursement	78
Table 15. Financial Review	79

List of Figures

Figure 1. Program Action - Logic Model.....	16
Figure 2. Logic Model Program Goals.....	28
Figure 3. Ethnicity of Population.....	61
Figure 4. Age of Population.....	61
Figure 5. Marital Status of Population.....	62
Figure 6. Gender of Population.....	62
Figure 7. Discharge Destination.....	63
Figure 8. Average Length of Stay (LOS).....	63
Figure 9. June 2012 Functional Independence Measure Incidence of Charting.....	68
Figure 10. June 2014 Functional Independence Measure Incidence of Charting.....	69
Figure 11. June 2012 and June 2014 Functional Independence Measure Incidence of Charting.	71
Figure 12. June 2014 FIM® Team and Nursing Documentation Comparison.....	72

List of Abbreviations

BVI - Bladder Volume Instrument

CEO - Chief Executive Officer

CMG - Case Mix Group

CMS - Centers for Medicare and Medicaid

EBP - Evidence Based Practice

FIM[®] - Functional Independence Measure

IRF - Inpatient Rehabilitation Facility

IRF-PAI - Inpatient Rehabilitation Facility Patient Assessment Instrument

LOS - Length of Stay

LPN - Licensed Practical Nurse

NA - Nurse's Aide

PEM - Program Evaluation Model

PPS - Prospective Payment System

RHOP - Rehabilitation Hospital of the Pacific

RN - Registered Nurse

SIP - Scholarly Inquiry Project

SNF - Skilled Nursing Facility

UDSMR[®] - Uniform Data System for Medical Rehabilitation

Chapter 1. Introduction

Chapter one contains an introduction to this evidence-based practice (EBP) scholarly inquiry project (SIP). The chapter sections include purpose, significance of the study, project question, conceptual framework, background, and short summary.

Purpose

Rehabilitation is a type of post-acute care provided to many people in the United States (U.S.) each year after an illness or injury that results in a physical and/or cognitive deficit. Inpatient rehabilitation is the setting of choice for those most at risk of chronic functional debility, like stroke (O'Brien, 2010). For persons with disabilities resulting from physical illness or injury, an inpatient rehabilitation facility (IRF) bridges the gap between the acute care hospital stay and the person's return to the home (Durkin, Deutsch, & Heinemann, 2010).

Rehabilitation care provided in an IRF is highly regulated by the Centers for Medicare and Medicaid (CMS) and requires the IRF to provide three hours of intensive therapy five of seven days per week to patients identified as meeting medical necessity (Gage et al., 2009). If the regulatory criteria provided by CMS are not met by the IRF then the facility is at risk of losing their IRF prospective payment system (PPS) exempt designation status.

In 1997, the Balanced Budget Act mandated the introduction of PPS for post-acute care, which paid providers a predetermined amount, based on the patient's clinical and/or functional condition (Buchanan, Andres, Haley, Paddock, & Zaslavsky, 2004). The loss of the IRF PPS status would result in significantly decreased reimbursement to the IRF for Medicare beneficiaries, possibly resulting in IRF closure. IRFs are an important part of the Medicare healthcare delivery system as they assist in returning patients back into the home setting after an

acute care hospitalization (Gage et al., 2009). The Medicare population is typically elders in need of IRF services; therefore IRFs must meet CMS regulations to provide rehabilitation services to Medicare beneficiaries.

The elderly population in the U.S. continues to increase and in the state of Hawaii, the population over the age of 65 is approximately 2% higher than the national percentage average (U.S. Census Bureau, 2012). As the population in the U.S. ages, common age-related conditions such as osteoporosis that results in hip fracture and stroke may require inpatient rehabilitation and increase the demand for IRF services (Durkin et al., 2010). FIM[®] is a widely accepted scale used to measure the functional abilities of patients undergoing rehabilitation (Bottemiller, Bieber, & Basford, 2006). FIM[®] ratings measure the burden of care for an individual and IRFs measure FIM[®] ratings on admission, periodically throughout the patient's stay, and upon discharge (O'Brien, 2010). Admission FIM[®] ratings are entered in the Medicare standardized data set called the Inpatient Rehabilitation Facility Patient Assessment Instrument (IRF-PAI) within 72 hours of admission in order to qualify for reimbursement (Turner-Stokes, Sutch, Dredge, & Eagar, 2011).

Therefore, admission FIM[®] ratings need to be captured as early as possible after admission to an IRF to demonstrate an improvement in FIM[®] ratings by the patient's discharge. Ideally, the lowest FIM[®] ratings should be captured on the day of admission prior to starting the therapy treatment plan. IRFs also need to meet regulatory requirements, demonstrate quality outcomes, and obtain functional independence measure (FIM[®]) ratings as early as possible during the admission process to remain financially viable and provide essential care to the elderly population.

This SIP utilized qualitative and quantitative methods to evaluate the innovation (process and flow change) to collect FIM[®] ratings on the day of admission to the IRF. The outcomes were evaluated utilizing a triangulated time series design that compared FIM[®] ratings on the day of admission retrospectively (June 2012) and prospectively (June 2014). Descriptive statistics and trend analysis was utilized to evaluate established objectives. A nursing staff survey was utilized to determine the staff support for the proposed SIP interventions. The quantitative data analysis evaluated admission FIM[®] ratings, length of stay efficiency, percentage of admission FIM[®] rating documentation and Medicare reimbursement.

Significance

IRFs are measured for quality outcomes through a facility length of stay (LOS) efficiency score, which is essentially an IRF report card on the progress of patients over a period of time. Adding the FIM[®] gains from admission to discharge and dividing by the patient's actual length of stay will calculate LOS efficiency (Bottemiller et al., 2006). CMS regulations for IRFs includes a payment system based on a patient's admission FIM[®] ratings, diagnosis, rehabilitation impairment code, age, and co morbidities (CMS, 2009 August).

Prior to beginning this SIP, there was no formalized process to facilitate early capture of admission FIM[®] ratings thus resulting in suboptimal reimbursement and quality outcomes. The purpose of this evidence-based project is to improve rehabilitation care by increasing compliance, meeting or exceeding national metrics, and increasing length of stay efficiency and cost savings. The SIP interventions are projected to increase the number of admission FIM[®] ratings obtained on the day of admission by nursing staff, an increase in the facility LOS efficiency ratings, admission FIM[®] ratings equal to or less than the nation and increase in

Medicare reimbursement. The SIP will answer this question: What EBP interventions are needed to empower nurse compliance with the practice of obtaining patient admission FIM[®] ratings on the day of admission?

The purpose of this evidence-based SIP was to increase the quality of patient assessment and documentation of patient FIM[®] ratings on the day of admission to the IRF. Expected outcomes using the logic model were 1) increased FIM[®] rating documentation on the day of admissions; 2) increased facility LOS efficiency ratings; and 3) decrease in admission FIM[®] ratings. Achievement of these outcomes together was projected to increase agency reimbursement for care delivery.

A survey was distributed to nursing staff to ask what could be done to empower the nursing staff to document admission FIM scores. The question asked was as follows:

- How can we empower the nursing staff to document admission FIM scores?
 - Nurses that responded preferred the paper FIM[®] instrument be built in the computer system as a template and a prompt be added to their work list each shift to document FIM[®] ratings.

The quantitative data collection was based on the SIP objectives and evaluation of the data after implementation of pre-SIP interventions and the computerized FIM[®] template. It's important to recognize the initiation of the FIM[®] team which began in the pre-SIP timeframe with the focus on capturing FIM[®] ratings on the day of admission. The FIM[®] team may impact the admission FIM[®] ratings, length of stay efficiency ratings and reimbursement. Quantitative data will evaluate if the implementation of this SIP met the proposed objectives.

- Objective 1: The FIM[®] team will train at least seventy percent (70%) of nursing staff, 96 full time equivalents (FTEs), on the computerized FIM[®] template in March and April 2014.
- Objective 2: Nursing staff that receive training in March and April 2014 will score at least 75% on the post-test and post-test training scores will be 10% higher when compared to pre-test scores.
- Objective 3: The computerized FIM[®] instrument will go-live in April 2014.
- Objective 4: Increase in the number of FIM[®] assessments documented on the day of admission by fifteen percent (15%) in June 2014 when compared to June 2012.
- Objective 5: A one point decrease of facility admission FIM[®] ratings will be demonstrated comparing June 2012 and June 2014.
- Objective 6: A one-point increase in LOS efficiency facility ratings will be demonstrated by comparing June 2012 and June 2014.
- Objective 7: Increase in operating income by fifteen percent (15%) will be demonstrated by comparing June 2012 and June 2014.

Conceptual Framework

The logic model was selected to evaluate admission processes to the IRF and identify evidence-based interventions to capture FIM[®] ratings on the day of admission. Since the logic model is aligned with systems theory, it supports this project because rehabilitation care is interdisciplinary care provided in a team setting.

The logic model tells a story about how a program functions (McLaughlin & Jordan, 1999). System theory has a multi-disciplinary approach and evaluates different areas and levels of care similar to rehabilitation care. The logic model identifies a program's logic and is designed to effectively communicate the elements of a program that work. These elements are classified as inputs, processes or activities, and outputs or outcomes (MacPhee, 2009). The logic model can be used as a conceptual map that outlines the components of a program (Lane & Martin, 2005) and organizes the data collection process, the evaluation process, and the factors affecting these areas (Dillon, Barga, & Goodin, 2012).

Background

The literature reviewed for this SIP was to identify EBP interventions to capture FIM[®] ratings on the day of admission to an IRF. The literature review included sixteen FIM[®] articles with a focus on capture of FIM[®] ratings, challenges with capture, barriers to collecting FIM[®] ratings and FIM[®] validity.

The FIM[®] literature review could not identify a body of evidence on this topic. The initial review was followed by a review of the literature on behavioral changes in healthcare. Behavioral interventions were identified to facilitate change and include allowing time for the task in need of change, management oversight, inclusion of staff in the decision-making process, good communication, and knowledge about why the change needs to occur. These evidence-based behavioral change interventions will be incorporated as the FIM[®] team identifies methods to capture FIM[®] ratings on the day of admission.

Nursing Practice Change

In relation to nursing and behavior change, seven articles of value were identified related to behavioral changes when implementing an evidence-based project. Dempsey (2009) and Bayley et al. (2012) stressed the importance of allowing enough time to facilitate the behavior change. In both articles, the authors reported that staff members need to be involved in the decision-making process for successful changes in practice to occur. Rosen et al. (2005) and Bayley et al. (2012) reinforced the need for management involvement to achieve and sustain behavioral changes.

Mitchell (2013) and McCluskey et al. (2013) stated that good communication, coaching, and knowledge regarding the expected change was necessary for changes in behavior to occur. Bayley et al. (2012) identified barriers to implementing evidence-based practice as lack of time and education, staffing issues, lack of equipment, and altered team function. In summary, behavioral change requires management oversight and coaching provided in a supportive environment, good communication strategies, a procedure to include nurses in making decisions regarding the proposed changes, and knowledge regarding the reason for the changes.

It is important to evaluate the strength, quality, quantity and consistency of the literature for this project. Although the literature quantity was limited, it provided background information on behavior change that would be required to capture FIM[®] ratings on the day of admission to an IRF. Sixteen articles were found to support the FIM[®] instrument and identified as a strength for this project. The FIM[®] instrument was identified as being a valid and reliable tool. The quality of evidence was considered to be reliable and supports the need for further study to define effective interventions to capture FIM[®] ratings on the day of admission. The literature stated that capturing FIM[®] ratings would be extremely difficult within the first twenty-four hours after

admission to an IRF but administrators thought that night shift would provide the lowest ratings. The administrators understood that patients are tired at night and would require more assistance than in the day therefore it was expected that the lowest FIM[®] ratings would be at night. Based on the administrative FIM[®] team discussions the focus for capturing FIM[®] ratings will be concentrated on evening and night shifts on the day of admission to an IRF.

Outcomes

This SIP is considered to be successful based on the pre-SIP and SIP interventions implemented that appeared to have positively affected the outcomes based on established project objectives and goals. Pre-SIP and SIP interventions include the initiation of the administrative FIM[®] team in August 2012, direct care FIM[®] team initiation in October 2012, the nurses' aides national FIM[®] training and certification in 2012, computerized FIM[®] template and increased communication on FIM[®] outcomes. In addition the RHOP received an award from the uniform data system for medical rehabilitation (UDSMR[®]) for receiving the 2013 Top Performer Award for outstanding rehabilitation performance. This award identified RHOP as a top rehabilitation performer when compared to all rehabilitation hospitals in the nation due to the PEM facility rank of 97%. Receiving this award was a surprise and is possibly an outcome from the many EBP interventions introduced in this SIP. Since the top performer award was not expected the investigator decided to review the results that led to the receipt of this award. In 2014 the PEM rank for RHOP was 99%. The Top Performer Awards for 2014 will be distributed in June 2015.

UDSMR[®] prepares a facility program evaluation model (PEM) scorecard that includes discharge FIM[®] totals, FIM[®] change, LOS efficiency scores, percentage discharge to community

and percentage discharge to acute care. The higher the PEM score reflects an increase in the quality of care. The PEM scores for RHOP are as follows;

- 2010 – score 71.3, rank 50%
- 2011 – score 73.9, rank 65%
- 2012 – score 73, rank 76%
- 2013 – score 87.8, rank 97%
- 2014 – score 91.8, rank 99%

These scores suggest that this SIP was successful in changing staff behavior through training and overall FIM[®] awareness. Objectives one and two were created to establish a curriculum for training on the new FIM[®] instrument template and post-test scores were higher than pre-test scores. Objective three was met as the FIM[®] instrument template was live on April 15, 2014. Objective four was met as the nurses and FIM[®] team charted 89.18% more in June 2014 as compared to June 2012. Objective five was met as there was a greater than one point decrease in admission FIM ratings, 52.9 in June 2014 as compared to 63.6 in June 2012. Objective six was met as LOS efficiency was improved by more than one point, 4.08 in June 2014 as compared to 2.38 in June 2012. Objective seven was not met as operating income in June 2014 was not more than 15% when compared to June 2012 with a 5.47% inflation rate.

This SIP was implemented and evaluated in just under one year and included the efforts of multiple RHOP staff members dedicated to improving the quality of care. Overall this SIP is considered to be successful with six of the seven objectives being met. The last objective demonstrated an increase in reimbursement but not enough to exceed the predicted margin to count the objective as being met.

The innovations for this SIP was the FIM[®] team assigned to capture admission FIM[®] ratings on the day of admission and the nursing FIM[®] computerized template. These two innovations were successful at increasing LOS efficiency, decreasing admission FIM[®] ratings and increasing reimbursement.

Capturing Functional Independence Measure Ratings

FIM[®] is a widely accepted scale used to measure the functional abilities of patients undergoing rehabilitation (Bottemiller, Bieber, & Basford, 2006). FIM[®] ratings measure the burden of care for an individual and IRFs measure FIM[®] ratings on admission, periodically throughout the patient's stay, and upon discharge (O'Brien, 2010). Admission FIM[®] ratings are entered in the Medicare standardized data set called the Inpatient Rehabilitation Facility Patient Assessment Instrument (IRF-PAI); this data is entered within 72 hours of admission in order to qualify for reimbursement (Turner-Stokes, Sutch, Dredge, & Eagar, 2011).

IRFs are measured for quality outcomes through a facility LOS (length of stay) efficiency score, which is essentially an IRF report card on the progress of patients over a period of time. Adding the FIM[®] gains from admission to discharge and dividing by the patient's actual length of stay calculates LOS efficiency (Bottemiller et al., 2006). IRFs provide essential post-acute rehabilitation care to the Medicare population but there are many requirements to be reimbursed for such care. CMS regulation for IRFs includes a payment system based on a patient's admission FIM[®] ratings, diagnosis, rehabilitation impairment code, age, and co morbidities (CMS, 2009 August).

Admission FIM[®] ratings are directly linked to the patient's burden of care, reimbursement, and quality outcomes. Therefore, admission FIM[®] ratings need to be captured as

early as possible after a patient is admitted to an IRF to demonstrate an improvement in FIM[®] ratings by the patient's discharge. Ideally the lowest FIM[®] ratings should be captured on the day of admission since the patient has not started his or her therapy treatment plan.

The purpose of this evidence-based project is to improve rehabilitation care by increasing compliance, meeting or exceeding national metrics, and increasing efficiency and cost savings. In addition this project will develop an ongoing process to identify which of the 18-point FIM[®] categories remain higher when compared to nationally adjusted results. The outcomes of this project will be an increase in admission FIM[®] ratings obtained on the day of admission, an increase in the facility LOS efficiency ratings, and admission FIM[®] ratings equal to or less than the nation. This project will answer this question: What evidence-based interventions are needed to empower nurse compliance with the practice of obtaining patient FIM[®] ratings on the day of admission?

Chapter 2. Conceptual Framework: Logic Model

The logic model was selected to evaluate admission processes to an IRF and identify evidence-based interventions to capture FIM[®] ratings on the day of admission. Since the logic model is aligned with systems theory, it supports this project because rehabilitation care is interdisciplinary care provided in a team setting. This chapter will describe the components in the Logic Model as it relates to this SIP including the situation, priorities, assumptions, external factors, outputs, outcomes and literature synthesis.

The Program Action-Logic Model was developed in the 1970's by Joseph Wholey and based on the Systems Theory (Taylor-Powell & Henert, 2008) (see Figure 1). The logic model can be used as a conceptual map that outlines the components of a program (Lane & Martin, 2005) and organizes the data collection process, the evaluation process, and the factors affecting these areas (Dillon, Barga, & Goodin, 2012). The logic model tells a story about how a program functions (McLaughlin & Jordan, 1999). System theory has a multi-disciplinary approach and evaluates different areas and levels of care similar to rehabilitation care. The logic model identifies a program's logic and is designed to communicate the elements of an effective program. These elements are classified as inputs, processes or activities, and outputs or outcomes (MacPhee, 2009).

Situation

The first step in developing the logic model is to discuss the situation being studied, identify key stakeholders, and create a team of willing members to participate in the project. This step is also known as the 'inputs' phase of the logic model. The first step also includes an assessment of the resources required for a project and includes staff time, supplies, money,

equipment, facilities, and volunteer time (Taylor-Powell & Henert, 2008). In this project, the situation to be studied is the admission processes required to obtain FIM[®] ratings on the day of admission to an IRF. Team members identified will be provided ample time to discuss the problem, review the literature, test their assumptions related to the problem, and formalize the logic model process (MacPhee, 2009).

Priorities

The priorities for this project are to identify interventions to empower nursing staff to obtain FIM[®] ratings on the day of admission and identify which of the 18 FIM categories remain higher when compared to the nation. Capturing FIM[®] ratings as soon as possible after admission to an IRF will establish the patient's baseline and identify the burden of care.

Assumptions

The assumption is that not all of the evening and night shift nursing staff is documenting FIM[®] ratings on the day of admission. We expect the lowest FIM[®] ratings will be obtained on the night shift when the patient is not fully awake and needs extra assistance with basic tasks.

External Factors

One of the most important external factors identified in this SIP is Medicare reimbursement which is heavily weighted on admission FIM[®] ratings, the patient's age, co-morbidities and admission diagnosis. Other external factors identified include a nursing culture that resists change, the notion that nurses are too busy to document FIM[®] ratings, and a poor understanding of why FIM[®] documentation is important.

Outputs

The second step in the logic model development is called ‘outputs’ which identifies activities and interventions to be enhanced or changed within the current program. This step documents the program enhancements, includes the intended receiver of the education, and has significant impact on the outcome of the project (Dillon et al., 2012).

The activities for this project will include a staff survey on the current processes of obtaining FIM[®] ratings on the day of admission, implementation of evidence-based practice interventions identified in the literature, and the development of a standardized process to capture FIM[®] ratings on admission. The outputs represent the deliverables, or what will be accomplished, as a result of inputs and activities (MacPhee, 2009); essentially the output is the action that will impact the outcome.

The intended receivers of the interventions are direct care staff members and the secondary recipient is the newly admitted IRF patient. There are two layers in the output level that address what we will do and who we will reach along with interventions identified in the literature review process (Taylor-Powell & Henert, 2008). Project activities will include staff and patient interviews, observations, FIM[®] data review, and implementation of evidence-based interventions. Output activities include training, developing protocols or workshops, assessing through observation, and partnering with others (Dillon et al., 2012). The goal of the outputs step is to create the greatest impact on the outcome.

Outcomes

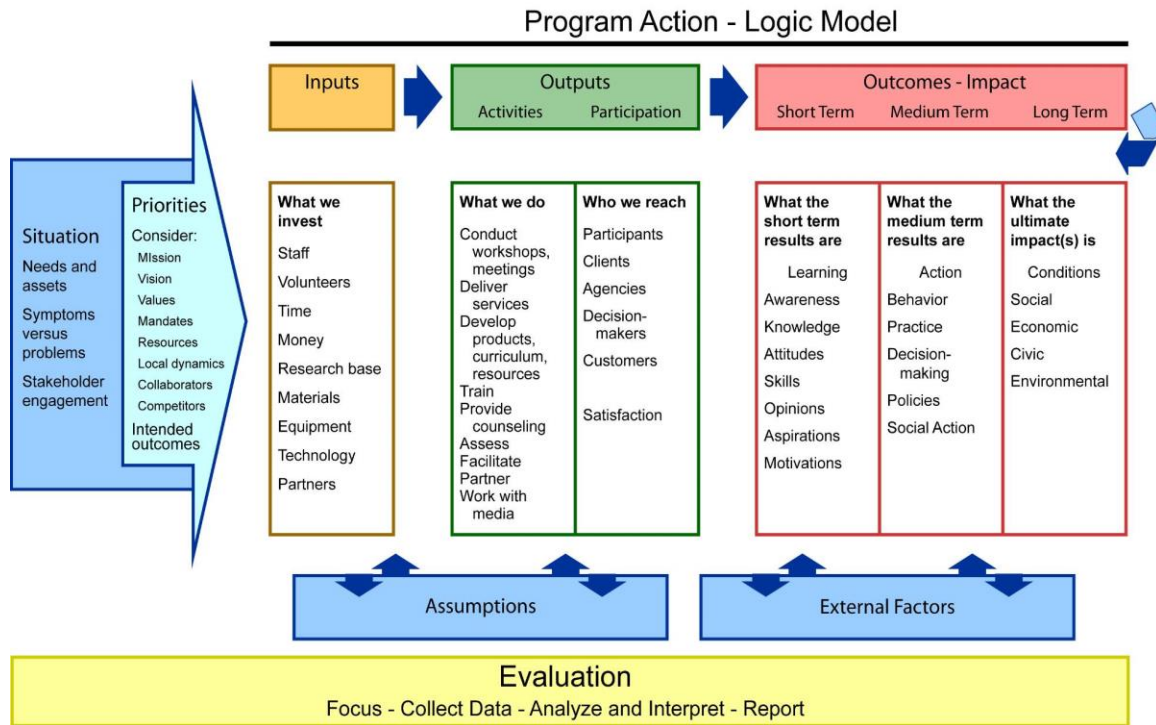
After the action plan is implemented, the third step in the logic model is evaluation of the outcome. Evidence of successful planning and implementation is determined by the plan’s goals

and if they were successfully met (MacPhee, 2009). This step identifies the outcomes and documents the goals to be achieved, including short-term, medium-term, and long-term outcomes.

Short-term outcomes for this project include development of a FIM[®] tool survey, establishing two FIM[®] teams, implementing EBP interventions, and evaluating monthly admission FIM[®] ratings. Medium-term outcomes include changes in staff behavior, attitude, and knowledge about capturing admission FIM[®] ratings after implementation of EBP interventions. Long-term outcomes include increased LOS efficiency ratings, improved quality of care, and increased reimbursement. The rate of FIM[®] change with time is known as LOS efficiency (Bottemiller, Bieber, & Basford, 2006), a higher LOS efficiency rating is desired and supports a home discharge disposition. Discharge home is the ultimate goal for the IRF patient and greater LOS efficiency ratings are associated with patients being discharged home (Bottemiller et al., 2006).

In summary, the developed logic model will be used to guide the project team to identify EBP interventions to standardize the collection of admission FIM[®] ratings to demonstrate adequate FIM[®] gains per patient. FIM[®] ratings being obtained on the day of admission, LOS efficiency ratings equal to or greater than the nation, and admission FIM[®] categories equal to or less than the nation will measure the success of this project. If this project is successful, the facility will notice an increase in reimbursement provided the patient's length of stay remains comparable to the nation and a high percentage of patients are discharged home.

Figure 1.



Program Action – Logic Model (Taylor-Powell, Steele, & Douglass, 1996).

Cooperative Extension • Program Development & Evaluation © 2003

<http://www.uwex.edu/ces/pdande/> UW-Extension provides equal opportunities in employment and programming, including Title IX and ADA (Taylor-Powell, Steele, & Douglass, 1996).

Literature Synthesis

IRFs provide intensive rehabilitation services for many types of patients including stroke, spinal cord, brain injury, orthopedic, major multiple trauma and debility. A diagnosis of stroke accounts for the majority of the patients admitted to an IRF (Moreland et al., 2009). Stroke is the most frequent cause of adult onset disability in the United States and the cost related to care is among the fastest growing Medicare expenditures (Dobkin, 2005).

In January 2002 CMS established new regulations for hospitals to be considered an IRF and reimbursed through the PPS, such that 75% of patients admitted to IRFs must fit within one

of the 13 diagnostic conditions; stroke, spinal cord injury, congenital deformity, amputation, major multiple trauma, fracture of femur, brain injury, neurological disorders, burns, active polyarticular rheumatoid arthritis, systemic vasculidities with joint inflammation, severe or advanced osteoarthritis, and knee or hip replacement (CMS, 2009 August; Pezzin, Roberts, Miao, & Dillingham, 2011). In 2007 the 75% rule was reduced to 60% which require an IRF to have 60% of patients admitted from one of the 13 diagnostic conditions (Murphy & Miles, 2007).

Many patients admitted to IRFs today are generally adult or geriatric patients recovering from injury or illness and require inpatient rehabilitation services prior to returning home. The 2002 regulations established by CMS provide guidelines for IRF reimbursement, where IRFs are reimbursed based on the patient's age, co morbidities, diagnosis, and admission FIM[®] ratings, which ultimately forecast the estimated length of stay and reimbursement for individual patients. The challenge for IRFs is to collect admission FIM[®] ratings within three days of admission to the IRF understanding that with high probability the day of admission assessment will result in the lowest FIM[®] ratings.

Research and Related Literature

Key terms used in searches conducted over a two-month period fit within two categories. These included FIM[®] and the IRF setting using “functional independence measure” or “FIM[®]”, “inpatient rehabilitation facility” or “IRF”, “75% rule”, “Medicare” or “Centers for Medicare and Medicaid” or “CMS”, “prospective payment system” or “PPS”, “rehabilitation nursing”, “IRF not skilled nursing facility”, “rehabilitation centers”, “uniform data set” or “UDS”, “IRF denials”, “FIM[®] validity”, “barriers” or “challenges” to collect “admission FIM[®]”. The second

category included nursing and change: “behavior changes”, “nursing practice”, “attitudes”, “organizational change” and “quality improvement”. The databases searched were Pub Med and CINAHL and journals provided by The Rehabilitation Hospital of the Pacific, Journal of Rehabilitation Nursing, and Journal of Physical Medicine and Rehabilitation. The years searched were 2005 through 2013. When the number of retrieved results was excessive, the search years were decreased to 2008 to 2013. The population searched was adult and geriatric. Pub Med revealed a few more articles than CINAHL due to the duplication of articles already found through Pub Med.

Combining the “75% rule” related to “diagnostic categories” and “rehabilitation” in Pub Med revealed five to 8021 articles, narrowed down to three articles of relevance. Using the same search, CINAHL revealed four to 260 articles with four articles of relevance. FIM[®] searches were combined with “CMS”, “IRF not SNF”, and by adding “rehabilitation nursing” and “quality improvement” yielded three articles from Pub Med and three from CINAHL. “FIM[®] validity” and “reliability” was searched through Pub Med and revealed 13 to 221 articles filtered down to ten articles; CINAHL revealed five to 412 articles with six articles retrieved for a total of sixteen FIM[®] articles. In total, the search yielded 38 articles from various journals for use in this synthesis (see Table 1). Mosby’s (2004) research critique tool was used to identify the type, grade, and internal validity of literature. Titler’s Quality Outcome Tool published in 2001 was utilized for an extensive review of the literature.

Table 1.

Mosby Research Tool and Articles Synthesized

Level of Evidence	Description	Functional Independence Measure (FIM®) Articles	Behavioral Change Articles
I	Meta-analysis		
II	Experimental design – Randomized Controlled Trials		
III	Quasi-experimental design	1	
IV	Case controlled, cohort studies, longitudinal studies	7	1
V	Correlational studies	1	1
VI	Descriptive studies including surveys, cross sectional design, and qualitative studies	6	4
VII	Authority opinion or expert committee reports		
Other	Performance improvement, review of literature	1	1

FIM® Ratings

There were sixteen articles with published results utilizing the FIM® instrument. Gialanella et al. (2012), Kohler et al. (2010), Bottenmiller et al. (2006) and Chumney et al. (2010) stated FIM® ratings need to be captured soon after admission; Kohler et al. (2010) stated scoring should be completed within two to three hours after admission. Durkin et al. (2010) stated FIM® ratings should be captured throughout the day and night in an IRF. Cournan (2011) suggested non-licensed trained staff capture the FIM® data on admission and Bottenmiller et al. (2006) suggested registered nurses and licensed therapists capture the FIM® data upon admission. None of the authors included evidence-based interventions on how to capture FIM® ratings on the day of admission. The search highlighted gaps in the literature regarding

interventions on procedures to capture and measure FIM[®] ratings on the day of admission.

Literature results revealed the FIM[®] instrument was rigorously tested and found to be valid and clinically reliable (Berlowitz et al., 2008; Glenny & Stolee, 2009; Glenny et al., 2010; Nilsson & Tennant, 2011; Pollack et al., 2011).

Stroke Rehabilitation

Stroke rehabilitation was included in the literature search because stroke is one of the 13 diagnostic conditions. Early transfer of patients that experience a stroke to an IRF has been reported to demonstrate better functional outcomes (Wang, Camicia, Terdiman, Hung, & Sandel, 2011). Five articles were retrieved on stroke and measured improvements with FIM[®] ratings which validates the need for comprehensive rehabilitation services to be provided by an IRF with the stroke population. Wang et al. (2011) reported early transfer of stroke patients to an IRF may result in better functional improvements after the incidence of stroke. Berlowitz (2008) stated that co morbidities are an important factor when predicting stroke outcomes. Moreland et al. (2009) reported that stroke patients require detailed discharge planning due to emotional barriers, fear and anxiety.

Prospective Payment System

As IRFs are reimbursed based on a patient's admission diagnosis, admission FIM[®] ratings, age, and co morbidities, it was essential to perform a literature review and search that included criteria for admission to an IRF, the 75% rule for IRFs, Medicare guidelines for IRFs, Medicare audit recovery contractors, IRF-PAI tool, and strategies or challenges to obtain admission FIM[®] ratings. Twelve articles were located on the PPS; four articles identified lower lengths of stay for patients admitted to IRFs after PPS was implemented (Durkin et al., 2010;

Mallinson et al., 2008; O'Brien, 2010; Ottenbacher et al., 2004). Turner-Stokes (2011) highlighted that diagnosis does not accurately reflect payment under the PPS system. Murphy and Miles (2007) defined the impact of PPS and listed the thirteen categories or conditions of admission diagnosis that were included in the 75% rule under the PPS system of reimbursement.

After implementation of the 75% rule, some qualifying IRF patients were diverted to skilled nursing facilities (SNFs). It was important to compare the care received in SNFs to IRFs due to the difference in services and cost of care for both levels. Ottenbacher and Graham's (2007) findings demonstrated post acute care location matters and stated that IRF admissions were diverted to SNFs after implementation of the 75% rule. Chan et al. (2013) stated inpatient rehabilitation patients obtained the greatest level of cognitive improvements when compared to patients that received care at SNFs. Four articles were located on post acute care that supported rehabilitation services provided in an IRF and demonstrated better outcomes with care provided in IRFs as compared to SNFs.

Nursing Practice Change

In relation to nursing and behavior change, seven articles of value were identified related to behavioral changes were identified when implementing an evidence-based project. Dempsey (2009) and Bayley et al. (2012) stressed the importance of allowing enough time to facilitate the behavior change. In both articles, the authors reported that staff members need to be involved in the decision-making process for successful changes in practice to occur. Rosen et al. (2005) and Bayley et al. (2012) reinforced the need for management involvement to achieve and sustain behavioral changes.

Mitchell (2013) and McCluskey et al. (2013) stated that good communication, coaching, and knowledge regarding the expected change was necessary for changes in behavior to occur. Bayley et al. (2012) identified barriers to implementing evidence-based practice as lack of time and education, staffing issues, lack of equipment, and altered team function. In summary, behavioral changes in an IRF requires management oversight and coaching provided in a supportive environment, good communication strategies, a procedure to include nurses in making decisions regarding the proposed changes, and knowledge regarding the reason for the changes.

Critique and Synthesis

The literature synthesized supported the FIM[®] instrument as reliable and valid in measuring the burden of care in adults and patients over the age of 80 years old. All of the studies were conducted in the United States, but none of the studies included evidence-based interventions to capture FIM[®] ratings on the day of admission.

Behavioral change articles were included to identify evidence on potential interventions (change) to facilitate capture of FIM[®] ratings on the day of admission. There was a paucity of literature on interventions to capture FIM[®] ratings on the day of admission to an IRF. Therefore, the author used evidence on behavioral evidence-based interventions to guide practice changes.

Summary of the Literature Synthesis

The purpose of the literature synthesis was to identify evidence based interventions to increase capture of FIM[®] ratings on the day of admission to an IRF. This review could not identify a body of evidence on this topic. The initial review was followed by a review of the literature on behavioral changes in healthcare. Behavioral interventions were identified to

facilitate change and include allowing time for the task in need of change, management oversight, inclusion of staff in the decision-making process, good communication, and knowledge about why the change needs to occur. These evidence-based behavioral change interventions will be incorporated as the FIM[®] team identifies methods to capture FIM[®] ratings on the day of admission.

It is important to evaluate the strength, quality, quantity and consistency of the literature for this project. Although the literature quantity was limited, it was enough to demonstrate the need to continue this project and identify interventions on how to capture FIM[®] ratings on the day of admission to an IRF. Sixteen articles were found to support the FIM[®] instrument and identified as a strength for this project. The FIM[®] instrument was identified as being a valid and reliable tool thus not requiring this project to prove reliability of the FIM[®] instrument. The literature indicated that capturing FIM[®] ratings would be extremely difficult within the first twenty-four hours after admission to an IRF. Thus the focus for capturing FIM[®] ratings will be concentrated on evening and night shifts on the day of admission to an IRF.

FIM[®] measures the level of assistance required to perform a task, the literature supported the reliability of licensed and non-licensed staff trained or certified to obtain the FIM[®] ratings. FIM[®] ratings measures the amount of disability or burden of care required to care for patients. The quality of evidence was fair to good depending on the article. If interventions were included on how to implement suggestions published in the article, the rating would have been higher. The overall assessment for quality is good. Although patient diagnosis, co morbidities, age and admission FIM[®] ratings determine reimbursement, it was found that co morbidities did not predict rehabilitation outcome. The determining factor affecting outcome was admission diagnosis and admission FIM[®] ratings. Higher admission FIM[®] ratings resulted in a better

outcome. It was uncertain if patients with cognitive disabilities would significantly improve with rehabilitation care. The literature stated patients with cognitive disabilities do benefit from services in an IRF. Bowel incontinence was the only heavily weighted factor found to be unfavorable if not corrected or managed prior to discharge from an IRF. If bowel incontinence was not managed there was a higher probability the patient would be admitted to an SNF, in addition a lower bowel FIM[®] rating was noted upon discharge.

The quantity of literature was fair because of the specific information being searched for this project. Sixteen articles were found on FIM[®] relevant to this topic. There could be more articles not identified due to the search criteria entered, which will be classified as a weakness for this project. There was no consistency noted in the body of literature regarding interventions on how to obtain admission FIM[®] ratings. Consistency was identified with the reliability and validity of the FIM[®] instrument and literature on the PPS changes affecting IRFs and rehabilitation units. The majority of the articles found to support the FIM[®] instrument was rated as Level IV and VI and categorized as cohort or descriptive studies. Although the information provided in the articles was relevant to this study only two articles included suggestions to obtain FIM[®] ratings early after admission to an IRF.

The articles on behavioral changes will guide the FIM team on how to effectively implement changes in a healthcare organization although none of the articles found were specific to rehabilitation care or related to the FIM[®] instrument. The majority of articles discovered on behavioral changes were categorized as Level VI, descriptive studies. The information on behavioral changes will guide the FIM[®] team as practice changes are identified and implemented. The strength of the behavioral articles supported the process to implement changes in practice with techniques identified in each article. The quality of articles was graded as fair

due to some missing study components that. Seven articles were found to influence behavior changes and as a result, the quantity of articles was sufficient.

Gaps, weaknesses, and limitations were noted in the literature. The most concerning was the gap in the literature on evidence-based interventions or guidelines to capture FIM[®] ratings on the day of admission. Obtaining FIM[®] ratings on day one of admission was vaguely mentioned in two articles, which lead the author to conclude there are interventions being implemented by IRFs but not published. There were no identified interventions, guidelines, sample patient schedules, or documented processes for obtaining FIM[®] ratings on the day of admission located in the literature therefore, considered a gap, limitation, and weakness for this project.

Another limitation for this project was the number of articles found on the FIM[®] instrument with relevance to obtaining FIM[®] ratings on the day of admission to an IRF. A weakness of this project is the lack of focus on admission FIM[®] ratings and its link to reimbursement. Since the Balanced Budget Act of 1997, implemented by IRFs in 2002, there has been a significant change in IRF reimbursement and allowable admissions paid at the IRF PPS rate. The last limitation identified was the different methods utilized in each of the FIM[®] articles synthesized. Thus, it was not possible to compare and contrast results across studies.

Chapter 3. Methods

This chapter will describe the objectives, design, data collection, data analysis, interventions, measurement strategies, resources and timeline for this evidence-based practice SIP. The methods are essential to provide a descriptive explanation of this project beginning with the purpose.

Purpose

The purpose of this evidence-based SIP is to increase the quality of patient assessment and documentation of patient FIM[®] ratings on the day of admission to the IRF. Expected outcomes using the logic model were 1) increased FIM[®] rating documentation for new admissions; 2) increased facility LOS efficiency ratings; and 3) increase in reimbursement. Achievement of these combined outcomes was projected to increase agency reimbursement for care delivery.

Design

This evidence-based practice project measured the impact of training rehabilitation nursing staff on the process to obtain FIM[®] ratings. The author reviewed three models for program improvement - the Iowa model of evidence-based practice, the Precede-Proceed model of health and the Logic Model. The author chose the logic model as most relevant to the project objectives by identifying a problem or situation and defining how and when to proceed to the next level in a step-wise manner. The logic model was used to determine project priorities, which was imperative for this project since FIM[®] ratings are not widely understood outside of rehabilitation. The clarity of this model development process provided a non-threatening

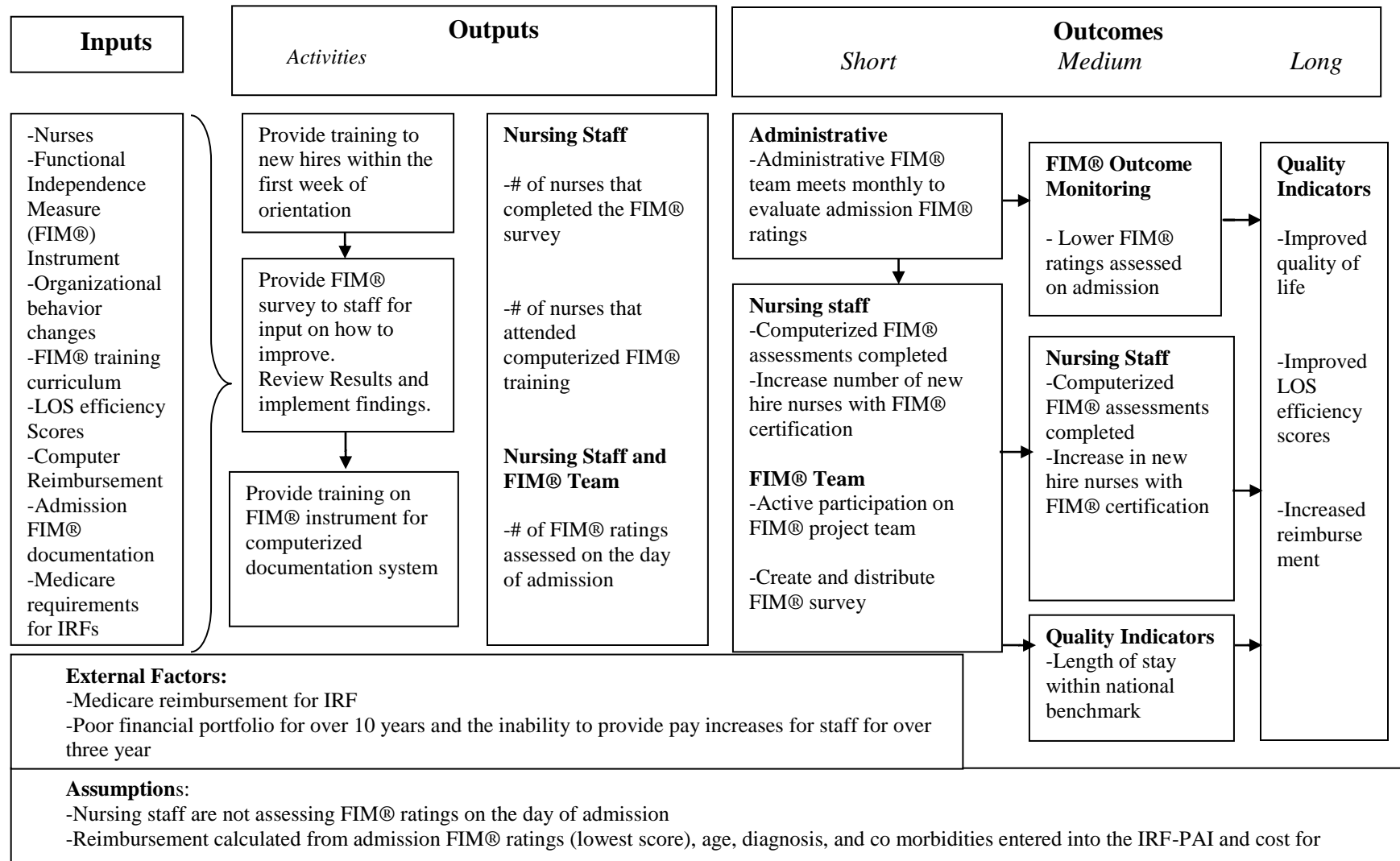
approach to changing employee behaviors, which were not affected, by traditional quality improvement approaches.

The logic model was selected to evaluate admission processes to an IRF and identify evidence-based interventions to increase the assessment of FIM[®] ratings on the day of admission. Since the logic model is aligned with systems theory it fits well with interdisciplinary rehabilitation care provided in a team setting.

The logic model tells a story about how a program functions (McLaughlin & Jordan, 1999). Systems theory is a multi-disciplinary approach that evaluates different areas and levels of care similar to rehabilitation care. In addition, the logic model identifies a program's logic and is designed to effectively communicate the elements of a program that work. These elements are classified as inputs and outputs (MacPhee, 2009). The logic model can be used as a conceptual map that outlines the components of a program (Lane & Martin, 2005) and organizes the data collection process, the evaluation process, and the factors affecting these areas (Dillon, Barga, & Goodin, 2012).

This SIP used the logic model shown in Figure 2 to implement organizational behavior changes to improve assessment and reimbursement. Behavioral changes implemented in this SIP will be explained in the implementation strategies section of this paper.

Figure 2.



Logic Model Program Goals: Functional Independence Measure (FIM®) Scholarly Inquiry Project.

Situation

The IRF FIM[®] admission ratings were higher than expected for the past ten years. The facility identified the failure to complete the assessment following admission as a contributing factor. Previous efforts to address this concern did not result in practice improvement. This SIP created a package of interventions developed and implemented over time to address the concern of inaccurate high FIM[®] admission ratings.

The first step in developing the project logic model was to discuss the situation being studied, identify key stakeholders, and create a team of willing members to participate in the project. This step is known as the ‘inputs’ phase of the logic model, and includes an assessment of the resources required for a project such as staff time, supplies, money, equipment, facilities, and volunteer time (Taylor-Powell & Henert, 2008). This phase also involves discussing the problem, reviewing the literature, testing assumptions related to the problem, and formalizing the logic model process (MacPhee, 2009). The situation studied in this project was the admission process used to obtain FIM[®] ratings on the day of admission to an IRF.

The facility organized a FIM[®] administrative team in August 2012 to improve capture and documentation of admission FIM[®] ratings. The administrative FIM[®] team was comprised of the CEO, CNO, Director of Therapy, IRF-PAI nurses, and finance specialist. In September 2012, the direct care FIM[®] team, which consisted of two nurse’s aides and a rehabilitation technician, was created and trained to use FIM[®]. The administrative team established a policy to obtain FIM[®] ratings on the day of admission by assessing FIM[®] components for each newly admitted patient. It was anticipated that creation of this team would improve assessment. However, the direct care FIM[®] team had no impact on the nursing staff documentation of admission FIM[®]

ratings. In November 2013, the direct care FIM[®] team discussed interventions to increase evening and night shift capture of admission FIM[®] ratings. In relation to nursing and behavior change, Dempsey (2009) and Bayley et al. (2012) stressed the importance of allowing enough time to facilitate the behavior change. Staff involvement in the decision-making process was also found to be crucial for successful changes in practice to occur (Bayley et al. 2012; Dempsey, 2009). Rosen et al. (2005) and Bayley et al. (2012) highlighted the need for management involvement to achieve and sustain behavioral changes.

The project interventions in this SIP focused on FIM[®] assessments and documentation on the day of admission. The author conducted a literature review and did not identify evidence-based interventions specific to changing FIM[®] rating assessments. Therefore, the project interventions focused on behavioral change to improve assessment practices.

Definitions

Admission Functional Independence Measure (FIM[®]) Ratings – FIM[®] ratings obtained within the first three days of admission to an inpatient rehabilitation facility or unit (Turner-Stokes et al., 2011).

Functional Independence Measure (FIM[®]) – The uniform measure of disability and burden of care for eighteen categories that determines the percentage of the task the patient is able to perform (O'Brien, 2010), see Table 2.

LOS efficiency – LOS efficiency provides a quality improvement measure for the facility that can be compared to other rehabilitation facilities that participate with UDSMR[®]. LOS efficiency is obtained by subtracting the admission FIM[®] ratings from the discharge FIM[®]

ratings and dividing by the length of stay (Bottemiller et al., 2006).

FIM® level 7 = Complete independence (CMS, 2012).

FIM® level 6 = Modified independence (CMS, 2012).

FIM® level 5= Supervision (CMS, 2012).

FIM® level 4= Minimal assistance, patient performed 75-99% of task (CMS, 2012).

FIM® level 3= Moderate supervision, patient performed 50-74% of task (CMS, 2012).

FIM® level 2 = Maximum assistance, patient performed 25-49% of task (CMS, 2012).

FIM® level 1 = Total assistance, patient performed 0-24% of task (CMS, 2012).

Inpatient Rehabilitation Facility (IRF) – A facility that specializes in providing rehabilitation services and is recognized by the CMS (CMS, 2012; Gage et al., 2009).

Patient Assessment Instrument (PAI) – The CMS utilizes this instrument to document the patient’s admission FIM® ratings, age, diagnosis, and co morbidities to calculate an estimated length of stay and payment the IRF will receive for that patient (Turner-Stokes et al., 2011).

Nursing staff – Registered nurses, licensed practical nurses, and nurses’ aides working at the RHOP.

R- link – The assigned name for the computerized healthcare documentation system at RHOP supported by the QuadraMed Corporation.

Rehabilitation Hospital of the Pacific (RHOP) – The inpatient rehabilitation facility in Honolulu, Hawaii that is the site for the project.

Uniform Data System for Medical Rehabilitation (UDSMR®) – A clinical data management system utilized for documentation, reporting outcomes and trending benchmarks for inpatient rehabilitation facilities and allows access to facility FIM® data through the internet (UDS-PRO, 2010).

Setting

This SIP was conducted at the RHOP, a freestanding private IRF located in Honolulu, Hawaii. The RHOP provides 24-hour care for inpatients admitted for rehabilitation services and provides three hours of therapy five days per week. The RHOP admits approximately 1600 inpatients every year of all backgrounds and cultures, and approximately 60 percent of patients admitted to RHOP have Medicare as their primary insurance. The remaining 40 percent of patients are covered through private insurance or Medicaid.

Senior leadership at RHOP identified the need to increase the accuracy of admission FIM[®] assessments and recording as a priority in the summer of 2012 and supported management to proceed with this scholarly inquiry project. The administrators at RHOP were committed and actively involved in this high priority clinical project.

Assumptions

The main assumption of this SIP was that evening and night shift nursing staff do not consistently document FIM[®] ratings on the day of admission. The lowest admission FIM[®] ratings obtained were expected to be on recorded on the first night that a patient is admitted, due to patient drowsiness and needs for extra assistance with basic tasks of daily living. See Table 2 for a description of FIM[®] components.

Table 2.

Description of FIM[®] Components

FIM[®] Component	Description
1. Toilet transfer	Includes all aspects of transferring on and off the toilet
2. Toileting	Maintaining personal hygiene and adjusting clothing before and after using toilet or bedpan
3. Bladder	Intentional control of the urinary bladder
4. Bowel	Intentional control of bowel movements
5. Bed/chair/wheelchair transfer	Measures all aspects of transfers from a bed to chair, or wheelchair, or coming to a standing position
6. Eating	Once the meal is presented, use of utensils to bring food to the mouth, chewing and swallowing.
7. Grooming	Oral care, hair grooming, washing the hands and face, and shaving or applying make-up
8. Dressing/undressing – upper body	Dressing and undressing above the waist, includes applying prosthesis or orthosis
9. Dressing/undressing – lower body	Dressing and undressing from the waist down, includes applying prosthesis or orthosis
10. Bathing	Bathing the body from the neck down (excluding the back) in the tub, shower or a bed bath
11. Tub/shower transfer	Scores transfers in and out of the tub or shower
12. Comprehension	Understanding auditory and visual communication
13. Expression	Clear non-vocal expression of language
14. Social interaction	Skills related to getting along with other in therapeutic and social situations
15. Problem solving	Skills related to solving problems of daily living.
16. Memory	Skills related to recognizing and remembering while performing daily activities in an institutional or community setting
17. Locomotion – walking	Measures walking distance on a surface once standing
18. Locomotion – wheelchair	Measures wheelchair distance once sitting in the wheelchair

Note. FIM[®] components outlined in the IRF-PAI training manual (CMS, 2012).

Population

The patient population at RHOP includes patients from all ethnicities with diagnoses including stroke, spinal cord injury, brain injury, orthopedic injury, debility, and various neurological conditions. The average age of the population admitted to RHOP is between 55 and 80 years old. Over the last 20 years, the youngest patient admitted was 3 years old and the oldest was 104 years old. In June 2012, the majority of patients admitted to RHOP were Asian (45%), married (42%), and female (52%) between the ages of 45-64 years old (40%) (UDS-PRO, 2010). The patient population in June 2014 was expected to be similar to June 2012. The average length of stay in June 2012 was 13.7 days, and was projected to be 12 days in June 2014.

Sample

The sample involved in this SIP included all patients discharged from RHOP in June 2012 and June 2014. No exclusion criteria will be applied. This SIP evaluated quality measures on an ongoing basis to improve quality of care. All individual patient data was de-identified. The de-identified FIM[®] data from 109 patients discharged in June 2012 was reviewed and compared to the 103 patients discharged in June 2014. Pre-intervention FIM[®] ratings from June 2012 were compared with post-intervention FIM[®] ratings from June 2014.

External Factors

The most important external factor identified was Medicare reimbursement, which is dependent upon admission FIM[®] ratings, age, co morbidities, and rehabilitation admission diagnoses. The Medicare reimbursement formula determines reimbursement for each patient and does not increase compensation if the patient's length of stay is longer than the Medicare projected length of stay.

Internal Factors

Internal factors included a change-resistant nursing culture, the widespread belief that nurses are too busy to document FIM[®] ratings, and a poor understanding of the organizational impact of FIM[®] documentation. Therefore interventions focused on behavioral changes to address the resistance to change.

Outputs

The second step in the logic model is ‘outputs,’ and consists of identifying activities and interventions to be enhanced or changed within the current program. This step documents the program enhancements, includes the intended receiver of the education, and has significant impact on the outcome of the project (Dillon et al., 2012). The outputs represent the deliverables, or what will be accomplished, as a result of inputs and activities (MacPhee, 2009); essentially the output is the action that will impact the outcome. The outputs in this project were the interventions implemented to change behavior. The activities for this project included a nursing staff survey on how to improve the current processes of obtaining FIM[®] ratings on the day of admission, new hire training on FIM[®] during orientation, in-house staff training on FIM[®] with pre- and post-test, and the development of a standardized process to capture FIM[®] ratings upon admission.

The output step also addresses the intervention activities and intended intervention recipients (Taylor-Powell & Henert, 2008). The primary intervention recipients in this SIP were direct care nursing staff at RHOP, and the secondary recipients were newly admitted IRF patients. Project activities included staff surveys, observations, FIM[®] data review, increased organizational communication, and implementation of interventions and behavioral changes identified by the staff survey and FIM[®] team. Output activities included training, developing

protocols or workshops, assessing through observation, and partnering with others (Dillon et al., 2012).

Pre-SIP Activities Implemented

A range of activities were implemented to facilitate organizational behavior changes to improve quality and increase FIM[®] documentation prior to formal initiation of this SIP. Significant financial losses greatly concerned the chief executive officer (CEO) of RHOP, appointed in 2012. Recent internal data revealed that admission FIM[®] ratings were higher than national benchmarks and LOS efficiency ratings were significantly lower than national benchmarks. Through an internal facility newsletter called the “REHAB Connection,” RHOP staff was notified that quality outcomes were below expected levels and an administrative team was appointed to improve these quality metrics.

Communication about length of stay outcomes has been included in the internal facility newsletter on a routine basis since 2002. In July 2012, with the support of the CEO, nursing management decided that nurses’ aides (NAs) would be trained on FIM[®] and implemented. Furthermore, NAs challenged the certification requirement to assess FIM[®] ratings because NAs routinely provide care that can be translated into FIM[®] ratings. The FIM[®] instrument was revised in July 2012 to allow staff to enter FIM[®] ratings at the bedside, which created an organizational awareness of the importance of assessing FIM[®] ratings upon admission.

In August 2012, the administrative FIM[®] team was established and management decided that this project would be added to the hospital Six Sigma initiatives to improve quality. The administrative FIM[®] team determined that establishing a direct care FIM[®] team was necessary to focus on assessing and documenting admission FIM[®] ratings to improve quality. The FIM[®] team

positions were approved and management decided that paraprofessionals would be hired, one position would be an NA and the other would be a rehabilitation technician working together to assess FIM[®] ratings on the day of patient admission. Since the lowest admission FIM[®] ratings are entered in the IRF-PAI, staff assistance or cueing is not allowed when admission FIM[®] ratings are assessed. Therapists are known to provide patients with cues or suggestions and nurses tend to provide extra assistance for patients when activities of daily living are being completed. A review of facility FIM[®] ratings revealed that therapy staff tended to rate patients higher and nurses tended to rate patients lower. Therefore, the FIM[®] team was composed of unlicensed paraprofessional staff to remove the potential bias in FIM[®] ratings.

In late September 2012, the FIM[®] team members were hired on a trial-basis to determine if a dedicated direct care FIM[®] team would increase the number of FIM[®] assessments completed within the first three days of admission. This decision was extremely unpopular among RHOP staff. Therapists were not pleased with the decision to hire unlicensed paraprofessional staff to assess patients on admission and the nursing staff didn't understand what their job function was and in turn would ask the FIM[®] team to answer call lights. The FIM[®] team members met with resistance and quickly became unhappy and questioned their decision to join the FIM[®] team.

To facilitate these changes, the CEO, Chief Medical Director, and Chief Nursing Officer (author) met with the therapy department and emphasized the financial imperative for adhering to the new FIM[®] guidelines. Nursing management also met with small groups of nurses on evening shift to explain the reason for organizational change and followed up with individual nurses who questioned the FIM[®] team about their job duties.

Clear communication was crucial for improving the working relationship between the FIM[®] team and nursing staff. New guidelines were established for the FIM[®] team that included a

verbal report to the nursing staff after each patient assessment to explicitly return patient care back to the assigned RN. After each patient assessment was completed, the FIM[®] team provided the RN and NA assigned to the patient a report on the transfer, bathing, toileting, ambulation skills and any patient concerns. Because the FIM[®] team routinely provided care previously delivered by nursing staff, this report was important for avoiding duplicative care. The report on the patient's function to the assigned nurse indirectly educated the nurse about the duties the FIM[®] team performed and provided information on the patient's level of function that they would not have known other than reading the chart. The assessments collected by FIM[®] team members allow the assigned nurse to successfully carry over care.

In the course of assessing a newly admitted patient, the FIM[®] team also answered many questions about RHOP asked by the patient and his or her family. If a concern was identified by the FIM[®] team it would be immediately addressed and resolved unless the patient or family wanted to speak with a manager or supervisor. This benefited the nursing staff by allowing them to focus on other nursing duties. In the last 18 months, RHOP has been able to identify patients that required a high level of communication earlier to adjust our care and meet the patient and family needs. An indirect benefit from the FIM[®] team was an increase in facility satisfaction ratings, which is most likely due to the dedicated attention given to patients and their families by the FIM[®] team on the day of admission.

Innovative Practice Changes

The literature search did not reveal any EBP changes that could be implemented to increase the assessment and documentation of patient FIM[®] ratings on admission to an IRF. A staff survey was created and distributed to identify innovations that would fit in the social system

at RHOP due to the lack of EBP interventions. The innovations for this SIP was developed based on the staff survey results, IRF requirements for patient admission FIM[®] submission and perceived best practices for obtaining admission FIM[®] ratings.

The innovation for this SIP is the implementation of the FIM[®] team and the development and implementation of the computerized FIM[®] instrument. Training was provided on the newly built FIM[®] instrument with practice changes that focus on early capture of FIM[®] ratings on the day of admission. The documentation changes include the computerized FIM[®] instrument documentation populating the nursing (licensed and non-licensed) work list for five shifts. The licensed and non-licensed nurses have separate work lists with tasks they are required to document each shift.

When implementing an innovation it's important to understand the five attributes of the innovation. The five perceived attributes of innovation are relative advantage, compatibility, complexity, trialability, and observability (Rogers, 2003). The first attribute is relative advantage known as the degree to which an innovation is perceived as being better than the idea it supersedes (Rogers, 2003). This SIP is focused on obtaining FIM[®] ratings on the day of admission since the lowest score is entered into the inpatient rehabilitation facility patient assessment instrument (IRF-PAI). The lower the FIM[®] rating indicates a higher burden of care.

CMS allows a maximum of three days to assess admission FIM[®] ratings before being required to enter into the IRF-PAI on day four of admission. The admission ratings can be entered before the third day if the facility chooses to enter the data sooner. There is some benefit for both the patient and team to entering admission FIM[®] ratings before the third day since projected length of stay can be obtained faster to assist the team with the development of an individualized treatment plan within the projected length of stay. A projected length of stay and

reimbursement is calculated after entering the lowest admission FIM[®] ratings, the patient's age, diagnosis and co morbidities in the IRF-PAI. The relative advantage is to assess admission FIM[®] ratings as soon as the patient arrives on campus to identify the burden of care. Once the patient arrives on campus, the patient transfer from the vehicle to the wheelchair can be assessed and scored in the parking lot. Then once the patient arrives to the assigned room, an RHOP staff member will transfer the patient into the bed and assist with changing their clothing, which will also be scored.

The second attribute is compatibility which is the degree to which an innovation is perceived as consistent with the existing values, past experiences, and needs of potential adopters (Rogers, 2003). Since our staff are required to be FIM[®] certified with re-certification every two years, this project should be compatible for them since staff are already assessing patients and gathering FIM[®] ratings just not as timely as expected. The goal of our FIM[®] team is to facilitate an adoption procedure which will include a decrease in the number of shifts required to obtain admission FIM[®] ratings from nine to five to lessen the workload.

The third attribute is complexity, the degree to which an innovation is perceived as relatively difficult to understand and use (Rogers, 2003). Although the FIM[®] instrument is unique to rehabilitation facilities, certification provides a foundation for equal and similar training. Certain categories of the FIM[®] instrument may seem complex as the number of tasks need to be totaled and divided by the amount the patient can do on his/her own. The complexity is in the form of mathematics since each FIM[®] rating is a percentage of what the patient can perform on his/her own divided by the total number of steps involved. The nurse calculates the percentage of the task completed manually based on the number of steps involved. Ideally the

lowest FIM[®] ratings should be captured on the day of admission since the patient has not started his or her therapy treatment plan.

The fourth attribute is trialability the degree to which an innovation may be experimented (Rogers, 2003). One of the innovations in this SIP is to build a template in the computer system to document admission FIM[®] ratings. The FIM[®] instrument will be built in our computerized documentation system and will include the eighteen FIM[®] categories. The template will appear in the nurses' work list as a reminder to document FIM[®] ratings before the end of the shift.

The fifth attribute is observability which is the degree the results of an innovation are visible to others (Rogers, 2003). In relation to this SIP the most observable part of the project is the removal of the paper FIM[®] instrument and replacing with a computerized version. This change will impact the nurse's workflow as the paper FIM[®] instrument was located at the bedside and will be removed once the computerized version is live. If this SIP is successful there will be a noticeable increase in reimbursement, increase in LOS efficiency and the number of admission FIM[®] assessments will be noted and disseminated.

Data Analysis

The procedure for pre-SIP data collection was previously discussed and the SIP interventions are explained by objective in Table 3. Procedures for collecting data for this SIP were categorized by evaluation objective of which there are seven objectives being evaluated to determine if the expected outcomes were achieved. The SIP investigator was the primary data collector and chart auditor with one FIM[®] team member to facilitate a consistent data collection process. Facility outcome data was obtained for June 2012 and will be obtained for June 2014 from UDSMR[®].

Data Analysis Plan

Descriptive statistics were utilized as the data analytical procedure for this SIP. Descriptive statistics organize and summarize numerical data gathered from samples (Nieswiadomy, 2008). The data set within this SIP was measured utilizing a descriptive comparative design. LOS efficiency outcome data was obtained from UDSMR[®] for June 2012 and directly compared to June 2014 to determine if a positive outcome was achieved in June 2014. The population of all June 2012 and June 2014 discharges was compared to determine if the innovation was successful at decreasing admission FIM[®] ratings by one point and increasing LOS efficiency outcomes by one point. Providing a comparison of outcome data over time helped to determine if the innovation introduced was successful. The admission FIM[®] ratings were collected and presented using a frequency distribution table and graph. A table format for the LOS efficiency data and for admission FIM[®] ratings was utilized to compare data to national benchmarks and determine if goals for each objective were met (at least a one point decrease in the admission FIM[®] ratings and a one-point increase in LOS efficiency outcomes).

The admission FIM[®] rating per category was logged for June 2012 and June 2014 to identify the central tendency for the discharges in June 2012 and June 2014. Measures of central tendency are statistics that describe the average, typical or most common value for a group of data and summarizes a frequency distribution by the use of a single number (Nieswiadomy, 2008). Descriptive statistics were used to compare data from two populations at two different periods in time to evaluate if this quality improvement project was influenced by the innovation introduced within the study (Nieswiadomy, 2008). The innovation introduced was the FIM[®] computerized template, the FIM[®] team and the FIM[®] training provided to staff. The outcome data was then measured utilizing descriptive statistics.

Outcome data was evaluated in multiple ways including a process to triangulate data sources to determine if the intervention appeared to positively impact the outcome when comparing two sets of data over time. Triangulation of data sources is important to establish if findings are in accord and complementary with other data sources (McDavid et al., 2013). Evaluating data thoroughly to determine if the data is consistent by utilizing categories to group similar data will assist with analysis and evaluation.

Data Collection

CMS requires patient FIM[®] data to be submitted to an approved online documentation system. RHOP uses UDSMR[®] to record facility FIM[®] data and this project utilized UDSMR[®] benchmark admission FIM[®] data and LOS efficiency data. National benchmarks vary month-to-month due to patient populations and diagnostic categories. This project utilized national benchmarks from the UDSMR[®] for FIM[®] ratings submitted for discharges in June 2012 and June 2014. RHOP mean admit FIM[®] ratings for June 2012 were compared to June 2014, of which lower ratings are desired. RHOP mean LOS efficiency in June 2012 was compared to June 2014; a higher score reflects enhanced efficiency and better quality of care provided.

Operating income will be utilized to determine the amount of increase in reimbursement that was achieved in June 2014. The operating income in June 2012 was adjusted for inflation utilizing an approved hospital calculation for inflation prior to comparing June 2012 and June 2014. The RHOP finance manager will report the net operating income obtained from Affinity, the RHOP financial billing system. See Table 3 for the complete data collection procedure and instrumentation.

Table 3.

Data Collection

Variables	Instruments	Data Collection Point	Data Analysis
Process Measures			
Knowledge pre-implementation	Investigator-designed tool	Within 5 days before start of educational sessions	Descriptive Statistics
Knowledge post-implementation	Investigator-designed tool	Immediately after educational session	Descriptive Statistics
Barriers to implementation	Interviews and discussions	Weekly post-implementation	Identify Themes
Outcome Measures			
Number of admission FIM [®] ratings	Chart Audits	June 2012 and June 2014	Descriptive Statistics & Trend Analysis
Admission FIM [®] outcome ratings	Data from UDSMR [®]	June 2012 and June 2014	Descriptive Statistics & Trend Analysis
LOS efficiency facility ratings	Data from UDSMR [®]	June 2012 and June 2014	Descriptive Statistics & Trend Analysis
Net Medicare reimbursement	RHOP net Medicare reimbursement	June 2012 and June 2014	Descriptive Statistics & Trend Analysis

Data was evaluated based on the SIP objectives using credible measurement techniques. Each objective had specific measurements as stated in Table 4 and were considered SMART (specific, measureable, attainable, realistic and timely) objectives. The investigator collected the relevant data required for this SIP and presented to stakeholders as data became available. The author collected data for this SIP according to the data analysis plan and included timeframes and data sources as noted in Table 4.

Table 4.

Data Analysis

GOAL: Assessing admission Functional Independence Measure (FIM®) ratings on the day of admission.						
Outcome	SMART Objectives	Evaluation data				Timeframe
		Measure	Baseline	Target	Data Source	
FIM® trainings conducted and received	1. The FIM® team will train at least seventy percent (70%) of nursing staff, 96 full time equivalents (FTEs), on the computerized FIM® template in March and April 2014.	FIM® computerized training completed	Training every 2 years	70%	Sign-in sheets	April 2014 – Goal met 87 FTEs trained (90%)
FIM® template implemented	2. Nursing staff that receive training in March and April 2014 will score at least 75% on the post-test and post-test training scores will be 10% higher when compared to pre-test scores.	Post-test scores	Pre-test	Score of 75% on post-test and 10% higher than pre-test	Post-test	April 2014 – Goal met post-test score 99% and greater than 10% higher than pre-test (79%)
	3. The computerized FIM® instrument will go-live in April 2014.	Go-live date	April 2014	April 15, 2014	R-link go-live	April 2014 – Goal met 4/15/14
Decrease in admission FIM® ratings	4. Increase in the number of FIM® assessments documented on the day of admission by fifteen percent (15%) from nursing staff by June 2014 when compared to June 2012.	June 2012 compared to June 2014	June 2012 data (still collecting)	15% increase in day one FIM® documentation	Chart Reviews	August 2014= 89.18% Goal met
	5. A one point decrease of facility admission FIM® ratings will be demonstrated comparing June 2012 and June 2014.		2012 - 63.6 admission FIM® ratings	One point increase admission FIM® facility rating	UDSMR® Reports	August 2014= 52.9 Goal met
Increase LOS efficiency ratings	6. A one-point increase in length of stay (LOS) efficiency facility ratings will be demonstrated comparing June 2012 and June 2014.		2012 - 2.38 LOS efficiency facility ratings	One point decrease in LOS efficiency rating	UDSMR® Reports	August 2014= 4.08 Goal met
	7. Increase operating income by fifteen percent (15%) will be demonstrated comparing June 2012 and June 2014.	June Operating Margin	2012 - \$2,989,402 2014 - \$3,403,199	Increase operating income by 15%	Affinity (financial data system for RHOP)	August 2014- 9.26% with 5.47% inflation factor Goal not met

Project Financials

Nurse training costs were paid as professional (development) time through the hospital's time off program utilizing the code for conference and education. Return on investment was achieved with increase in operating income and admission FIM[®] ratings equal to or lower than national benchmarks. FIM[®] recertification training is required every two years and scheduled between January and June 2014, and occurred independently of this project.

Approximately 20 percent of the author's time was dedicated to implementation of this project over a two-year period, totaling approximately \$50,000 in salary. The project lead requested an additional FIM[®] team member to be assigned to the admissions office to perform car transfers and document FIM[®] ratings upon patient arrival on campus. Estimated cost for another part-time FIM[®] team position was approximately \$20,000 annually including benefits. The cost for the chart pull for 109 discharged patients in June 2012 was approximately \$800. An additional \$300 was added for staff salary from medical records.

Required Resources

Every year during the budgeting process managers and directors allocate funds for education and training. These funds are paid to employees as professional time under the paid time off program when attending educational in-services or conferences. Nursing staff were required to attend the FIM[®] training sessions paid under the category of professional time. The nursing staffing clerk was informed about the FIM[®] training sessions and asked to provide adequate staffing to the units to increase staff attendance at the FIM[®] training sessions. The team conference rooms on each unit were utilized for the training sessions due to the convenient

location. The FIM[®] team facilitated the training sessions for staff and included a pre-training pre-test and after training post-test.

Ethical Considerations

This project involved de-identified chart reviews of FIM[®] ratings documented on the day of admission on the FIM[®] instrument and compared at two different intervals in 2012 and 2014. This project included all discharged patients during the established timeframes and involved RHOP nursing staff. There was no plan to randomize subjects or exclude any patients or nursing staff from this project. This SIP is an evidence-based project intended to improve medical care and not anticipated to increase harm to patients as compared to current medical care already being provided. Equal care and treatment will be provided to all patients admitted to RHOP.

Information collected on discharged patients was not identifiable and remained anonymous as charts were reviewed for admission FIM[®] ratings on evening and night shift on the day of admission. The report available from UD^{SMR}[®] included de-identified facility outcome data as compared to national benchmarks. Standard evidence based procedures were implemented to improve quality outcomes and reimbursement and reported in an aggregate format. The author completed the CITI (Collaborative Institutional Training Initiative) on-line training in preparation for implementing this SIP. In addition, internal facility committee members and scholarly advisors to ensure adequate human subject protection have reviewed this SIP.

Facility LOS efficiency and admission FIM[®] data was reviewed and trended through UD^{SMR}[®] from de-identified records of patients discharged from RHOP in June 2012 and compared to June 2014. The data reported was not identifiable or connected to any particular

patient, but instead to facility outcomes. No human subjects were identified in this study therefore an institutional review board application was deemed not necessary by the facility. The premise of this SIP is to do no harm and improve care based on project findings.

Limitations

This project was conducted at one rehabilitation facility and has broad inclusion criteria, therefore the results may not be generalizable to other IRFs since the variables are not controlled and conditions are not constant. There are limitations with the small sample size selected for this project since we are evaluating discharge data from two specific months in time that may not be representative of the true rehabilitation population at RHOP.

Gathering data from June 2012 was a manual process and may not have been a true reflection of the nurses' pre-intervention documentation practices due to the small sample size. Allowing only one month for innovation education may not be adequate to engage the nursing staff and obtain the results desired to achieve sustained practice changes. The instrument to gather admission FIM[®] ratings was developed by the author and is not valid or reliable as compared to UDSMR[®] reporting data, which is highly reliable and valid. Nursing and therapy staff members are required to complete FIM[®] recertification every two years and RHOP staff are due to recertify by June 2014. Recertification occurred independently of this project but may favorably alter the results of this project.

There were a few identified quality concerns with reviewing hard copy paper charts from 2012 and comparing to electronic documentation from 2014 potentially resulting in an imprecise data comparison. One staff member will review charts from June 2012 and one additional FIM[®]

team member assisted the investigator in June 2014 to review charts within the window allowed for data collection.

Timeline

The timeline includes the task and year task completed. The timeline for this SIP is explained in Table 5.

Table 5.

Overall SIP Timeline

Task	2014	2015
Brief Key Leaders & Staff	Completed January	
Proposal Defense	Completed March	
Prepare Instrument for Distribution	Completed March	
Train Staff	Completed March & April	
Implement Practice Changes	Initiated on April 15th Completed in May	
Collect Data	Initiated in May Completed in September	
In Progress Review	Completed throughout project	
Develop Database	Completed in July	
Enter Data	Completed in August	
Analyze Data		Completed in September
Interpret Data		Completed in October
Prepare & Submit Dissemination Products		Scheduled on April 14, 2015

August 2012. The administrative FIM[®] team was initiated and comprised of management staff. The creation of the administrative FIM[®] team started the journey to increase FIM[®]

documentation, improve quality and allowed management to discuss strategies on how to address the facility admission FIM[®] ratings. The administrative FIM[®] team approved the direct care FIM[®] team that started in September 2012 and included one nurse's aide and a rehabilitation technician.

December 2013. The direct care FIM[®] team met weekly to identify and address admission FIM[®] issues. A FIM[®] team survey was created in December 2013 to include the nursing staff in the decision-making and change process. The survey was distributed to nursing staff in December 2013 and data collected in January 2014.

January 2014. The direct care FIM[®] team reviewed the FIM[®] survey results and selected project interventions. The paper copy of the FIM[®] instrument kept at the bedside during the first three days of admission was updated to enlarge the font to quickly identify the FIM[®] component for charting. Based on the survey results, the FIM[®] team decided to institute an FIM[®] team orientation for newly hired staff because FIM[®] certification was not scheduled until the second or third month after hire. Orientation education focused on all 18 FIM[®] components during the first week of new hire orientation and was first conducted in January 2014.

March 2014. The survey revealed that the nursing staff preferred to document FIM[®] ratings digitally rather than on paper. Staff commented that they would like the FIM[®] documentation to be prompted on the nursing work list for all levels of nursing staff. In March 2014 the FIM[®] template was launched in R-link. Training was scheduled to review the new template and process to obtain admission FIM[®] ratings. The admission FIM[®] template in R-link was required for five shifts instead of nine shifts to encourage documentation of day one FIM[®] ratings.

April to June 2014. On April 15, 2014 the computerized FIM[®] instrument became live in R-link. In May and June a retrospective chart review will be completed for 109 patients discharged in June 2012 to review the number and category of FIM[®] ratings documented on the day of admission. This data was compared to the admission FIM[®] data collected with patients discharged in June 2014.

July 2014. The number of admission FIM[®] ratings and lowest FIM[®] ratings were recorded per each of the 18 FIM[®] components. This data was compared with June 2012 FIM[®] data.

Outcomes

The third step in the logic model is evaluation of the outcomes. Evidence of successful planning and implementation is determined by the plan's goals and if they were successfully met (MacPhee, 2009). This step identifies the outcomes and documents the goals to be achieved, including short-term, medium-term, and long-term outcomes.

Short-term outcomes for this project include development of a FIM[®] survey, implementing interventions identified by the FIM[®] team, and evaluating monthly admission FIM[®] ratings. Mid-term outcomes included changes in staff behavior, attitude, and knowledge about capturing admission FIM[®] ratings. FIM[®] training includes a pre- and post-test, and improvement is expected between tests. Operating income was expected to increase in fiscal year 2014 as compared to fiscal year 2012.

Long-term outcomes included improvements in FIM[®] ratings captured on the day of admission, where admission FIM[®] ratings will decrease by one point and be equal to or less than national benchmarks and LOS efficiency ratings will increase by one point and be equal to or

greater than national benchmarks. The rate of FIM[®] change with time is known as LOS efficiency (Bottemiller et al., 2006), which suggests a higher LOS efficiency rating implies the patient will be discharged home. Discharge home is the ultimate goal for the IRF patient and greater LOS efficiency ratings are associated with patients being discharged home (Bottemiller et al., 2006).

Measures

Objective 1: The FIM[®] team will train at least seventy percent (70%) of nursing staff, 96 full time equivalents (FTEs), on the computerized FIM[®] template in March and April 2014. Training for nurses on the computerized FIM[®] instrument will start in March 2014 and will end in April 2014. The total number of staff trained will be identified and divided by the total staff on the budgeted worksheet (96 nursing FTEs).

Measurement: The achievement of this objective was evaluated by training at least 70% of staff on FIM[®], 67 FTEs will be trained on the computerized FIM[®] instrument prior to go-live.

Objective 2: Nursing staff that receive training in March and April 2014 will score at least 75% on the post-test and post-test training scores will be 10% higher when compared to pre-test scores. A pre and post test was created by the FIM[®] team to evaluate knowledge transfer after FIM[®] training to determine if instruction was successful in the transfer of knowledge to the nurses, see table 5. The pre and post test questions were exactly the same. The pre-test was distributed and collected prior to FIM[®] training and the post-test was distributed and completed during FIM[®] training sessions.

Measurement: The achievement of this objective was measured by a score of at least 75% on the FIM[®] post-test and a 10% higher aggregate score when compared to the FIM[®] pre-test scores.

Objective 3: The computerized FIM[®] instrument will go-live in April 2014. The computerized FIM[®] instrument will go-live in April 2014 after 70% of nurses, at least 67 FTEs, are trained on the computerized FIM[®] instrument.

Measurement: The achievement of this objective was evaluated with the go-live of the FIM[®] instrument in April 2014.

Objective 4: Increase in the number of FIM[®] assessments documented on the day of admission by fifteen percent (15%) from nursing staff in June 2014 when compared to June 2012.

Measurement: The achievement of this objective was measured to evaluate an increase of 15% in admission FIM[®] ratings on the day of admission documented in June 2014 when compared to June 2012. FIM ratings are measured by evaluating the amount of the FIM[®] task that can be performed independently. FIM[®] assessments documented in June 2012 on the day of admission (during evening and night shift) were compared to June 2014. FIM[®] admission ratings by category was collected in June 2012 and compared to June 2014.

Objective 5: A one point decrease of facility admission FIM[®] ratings was demonstrated by comparing June 2012 and June 2014. The achievement of this objective was measured by a one point decrease in admission FIM[®] ratings when comparing June 2012 and June 2014. Admission FIM[®] data was extracted from the UDSMR[®], a reliable data collection agency acknowledged by CMS (UDS-PRO, 2010). The data entered by rehabilitation facilities in the national database known as UDSMR[®] is automatically compared to facilities in the nation and benchmarked against our facility. This data provides feedback on facility admission FIM[®] assessments as compared to national benchmarks. In addition, this objective was selected by the administrative FIM[®] team because the stakeholders agree that this is an important quality measures for RHOP.

Measurement: The success of this initiative was measured against a one point decrease in admission FIM[®] ratings when comparing June 2012 and June 2014 ratings.

Objective 6: A one-point increase in LOS efficiency facility ratings was demonstrated by comparing June 2012 and June 2014.

Measurement: The achievement of this objective was measured by a one-point increase in facility LOS efficiency ratings in June 2014 when compared to June 2012. LOS efficiency ratings are measured by totaling the FIM[®] gains during admission and dividing by the LOS. The LOS efficiency data from June 2012 and June 2014 was compared to analyze the differences between pre-intervention and post-intervention outcomes. The LOS efficiency ratings in June 2012 were compared with ratings obtained in June 2014. This outcome was achieved by increasing FIM[®] documentation by the FIM[®] team and evening and night shift nurses in June 2014 when compared to June 2012. The expectation was that more FIM[®] assessments would be completed on the day of admission in June 2014 which will result in a higher LOS efficiency score in June 2014.

Objective 7: Increase in RHOP operating income by fifteen percent (15%) will be demonstrated by comparing June 2012 and June 2014.

Measurement: The achievement of this objective was measured by an increase in operating income by 15% in June 2014 when compared to June 2012 with a 5.47% adjustment for inflation. The data was obtained from the RHOP finance department and validated by the finance manager. The data was compared to determine if there appeared to be a casual association between the EBP interventions implemented and an increase in operating income post-intervention in June 2014.

Each objective was analyzed based on the expected outcome or target. Objective number one was analyzed by totaling the number of staff trained on the innovation divided by the number of FTEs (96) to obtain a percentage of staff trained on the FIM[®] instrument. Seventy percent of the nursing staff was trained prior to implementation of the FIM[®] computerized template to meet objective number one. Objective number two was analyzed by the percentage of change score obtained from the pre and posttest with the expectation that the post test score will be higher. To meet objective three the FIM[®] instrument had to have gone live in April 2014.

To address objective number four an increase in the number of FIM[®] ratings collected on the day of admission needed to be realized. The admission FIM[®] ratings was collected and presented using a frequency distribution table and graph to compare June 2012 and June 2014. The UDSMR[®] automatically displayed reports utilizing graphs and frequency polygons, these reports include the facility LOS efficiency and admission FIM[®] ratings as compared to national benchmarks. The admission FIM[®] rating per category was logged for June 2012 and June 2014 to identify the central tendency for each category, see Table 2 for the list of categories.

To evaluate objective number five the admission FIM[®] ratings in June 2012 will be compared to June 2014 utilizing the cross tabulation technique to compare two groups. To address objective number six the LOS efficiency outcomes in June 2012 will be compared to June 2014 utilizing the cross tabulation technique to compare two groups. UDSMR[®] provides facility specific data to compare admission FIM[®] and LOS efficiency ratings with national benchmarks. If objectives five and six were met, a one-point decrease in the admission FIM[®] ratings and a one-point increase in LOS efficiency ratings will be appreciated when comparing June 2012 and June 2014. To address objective number seven the operating income from June

2012 compared to June 2014 utilizing the cross tabulation technique to compare to groups simultaneously would reveal a 15% increase.

Chapter 4. Results

Preliminary Practice Changes

This chapter will explain the results of this SIP; review the sample, population, objectives and outcomes as it related to this quality improvement project. The preliminary practice changes was focused on behavioral changes with staff to obtain FIM[®] ratings on the day of admission. Involving the staff in the change process and seeking their input on practice changes was essential to the success of this project. The FIM[®] team created a survey for staff to complete regarding the admission FIM[®] process, admission assignments, and the physical location of the FIM[®] instrument, a modest step towards the involvement of staff in the decision making process. Nursing staff previously documented the FIM[®] ratings on paper, a manual process, which was evaluated and determined that a computerized version would increase documentation and improve compliance with obtaining admission FIM[®] ratings.

Previously the FIM[®] documentation was kept and completed at the patient's bedside to allow for the staff to quickly document FIM[®] ratings after providing care. This process was re-evaluated with staff input and determined that a computerized version of the FIM[®] instrument would increase documentation compliance. Increasing staff knowledge on the situation in need of change was essential for the success of this project. The FIM[®] team aspired to increase the knowledge of staff on FIM[®] ratings by practicing FIM[®] documentation through proctored mini case study scenarios which increased the staff comfort level and confidence in documenting FIM[®] ratings. As staff became more familiar with the FIM[®] instrument their knowledge base was increased as the case studies were presented and discussed. The team defined the first day of admission in hours since there is some confusion of when the clock ends for the first twenty-four

hours. Patients that were within three days of admission were also identified on the nursing shift report as a reminder to staff to complete the FIM[®] documentation.

The practice changes listed above required management oversight and commitment to hardwire the suggested changes into practice. Management oversight was especially important since the majority of the changes in practice needed to occur on evening and night shifts when the FIM[®] ratings are projected to be at the lowest in the first twenty-four hour period. These practice changes were just a few suggestions that the FIM[®] team had already discussed. In addition, the admission process was evaluated for consistency and potential development of a patient schedule for suggested FIM[®] documentation on the day of admission.

Description of Sample

The sample involved in this SIP included all patients discharged from the RHOP in June 2012 and June 2014. No exclusion criteria were applied. De-identified FIM[®] data from 109 patients discharged in June 2012 was reviewed and compared to de-identified FIM[®] data from 103 patients discharged in June 2014. Pre-intervention FIM[®] ratings from June 2012 were compared with post-intervention FIM[®] ratings from June 2014.

Patient Population

The patient population at RHOP includes patients with diagnoses of stroke, spinal cord injury, brain injury, orthopedic injury, debility, and various neurological conditions. In June 2012, the patients were Asian (45%), married (42%), and female (52%) between the ages of 45-64 years old (40%) (UDS-PRO, 2010) (see Table 6).

In June 2014, the majority of patients were Asian (57%), married (60%), and male (59%) between the ages of 45-64 years old (35%) (UDS-PRO, 2010). The average length of stay in June 2012 was 13.7 days and 12.5 in June 2014 (see Table 6).

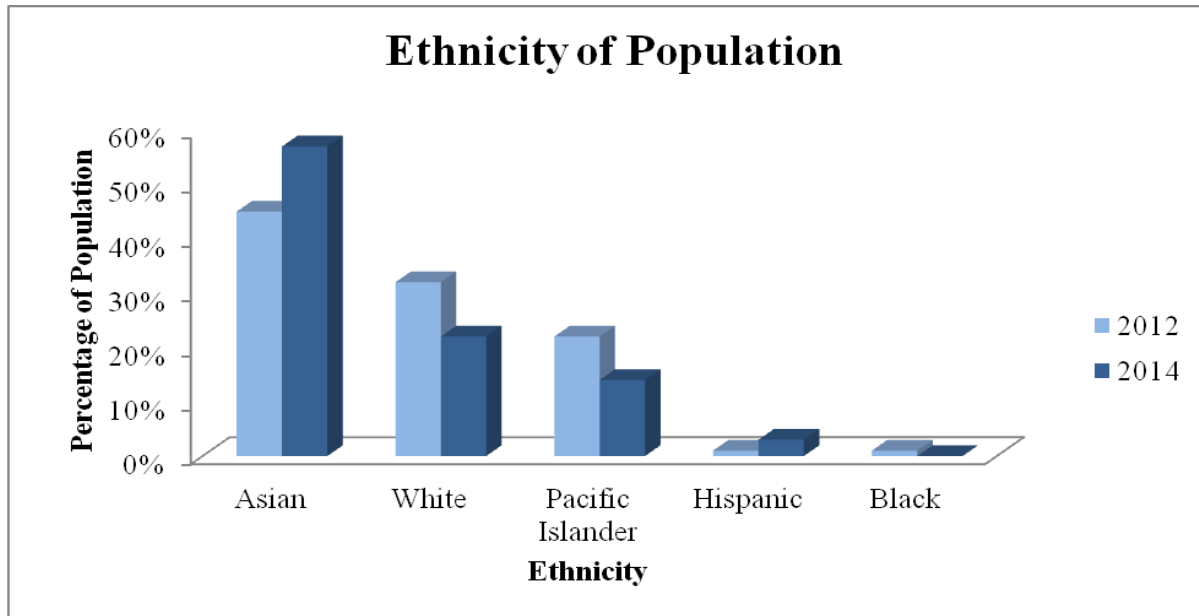
Comparing June 2012 and June 2014, Asian patients were the largest ethnic group in both years with White being the second highest (see Figure 3). The age of the patients in both years was between 75-105 (see Figure 4); with the majority of patients in 2012 being female and in 2014 being male and married (see Figure 5 & 6). Discharge to home was the disposition for greater than 80% of the discharges in both June 2012 and June 2014 with transfers to acute and discharge to skilled nursing facilities almost identical in both years (see Figure 7). Average LOS was reduced by 1.2 days in June 2014 (see Figure 8).

Table 6.

Population Data

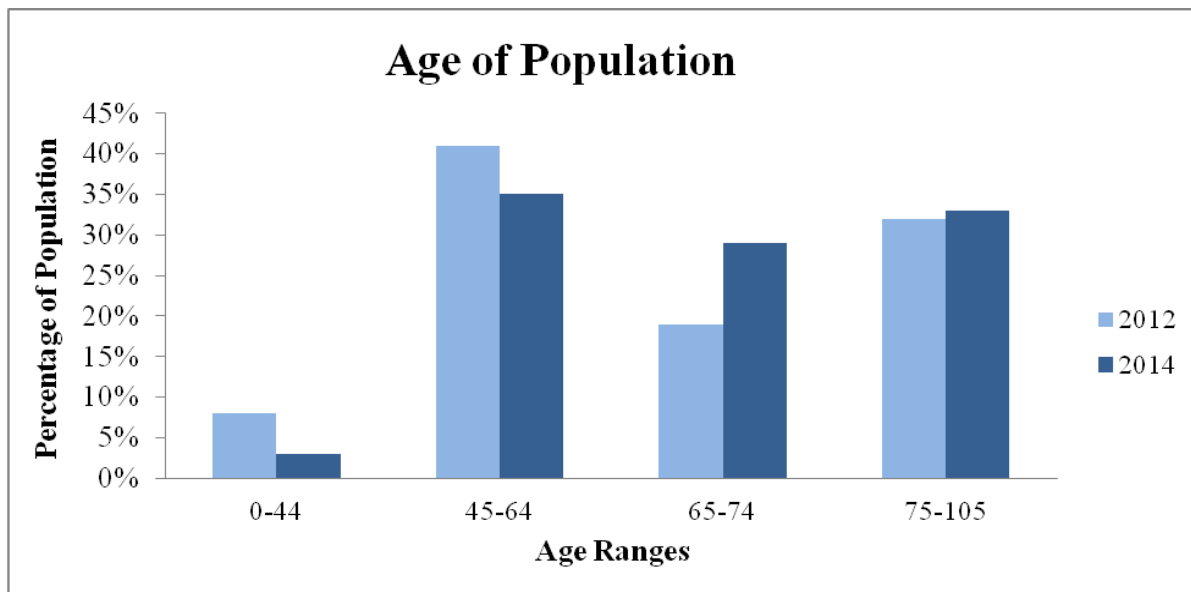
	June 2012	June 2014
Ethnicity *more than one category may be selected therefore sum may exceed 100%	45% Asian 32% White 22% Pacific Islander 3% Hispanic 1% Black	57% Asian 22% White 14% Pacific Islander 3% Hispanic
Age	0-44 = 8% 45-64 = 41% 65-74 = 19% 75-105 = 32%	0-44 = 3% 45-64 = 35% 65-74 = 29% 75-105 = 33%
Marital Status	43% Married 19% Single 15% Divorced 23% Widowed	60% Married 17% Single 5% Divorced 18% Widowed
Gender	52% Female 48% Male	59% Male 41% Female
Discharge Destination	81% Home 9% Acute Care 6% Skilled Nursing Facility (SNF) 2% Assisted Living 1% Transitional Living 1% Board and Care	84% Home 7% Acute Care 6% Skilled Nursing Facility (SNF) 2% Rehab Facility 1% Board and Care
Average Length of Stay	13.7 days	12.5 days

Figure 3.



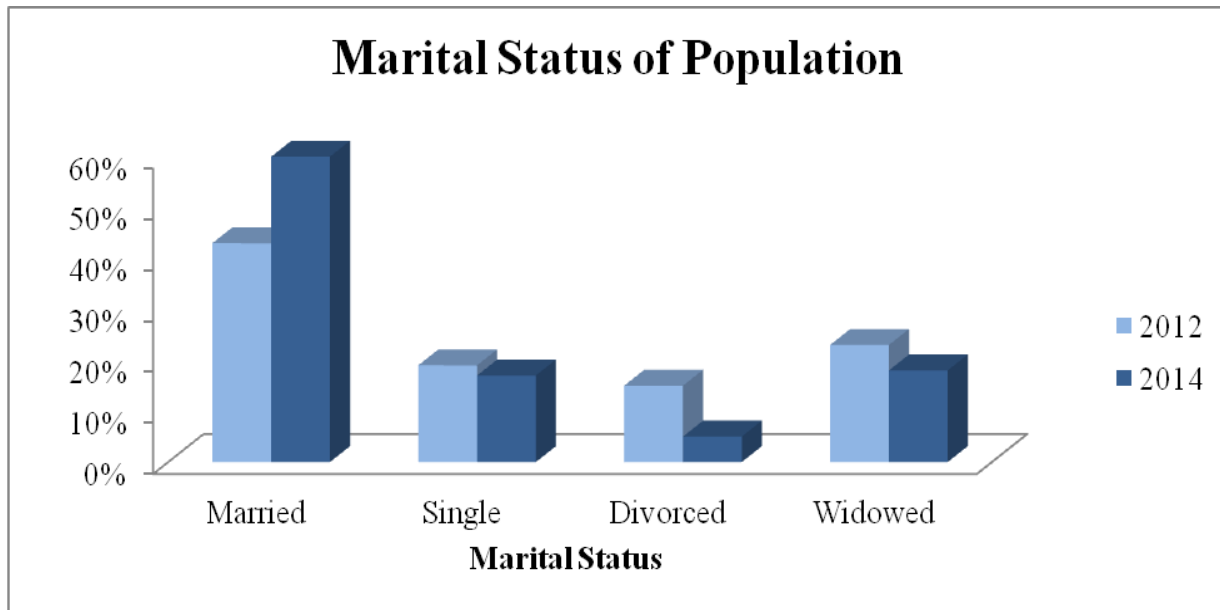
Ethnicity 2012 and 2014

Figure 4.



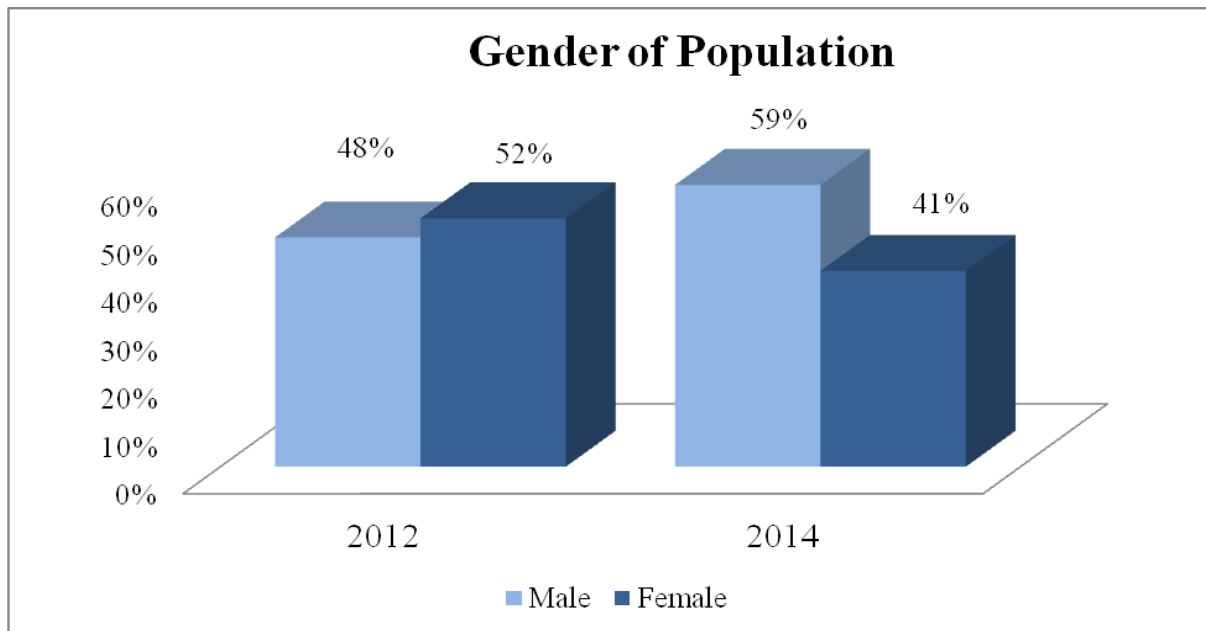
Age of Population

Figure 5.



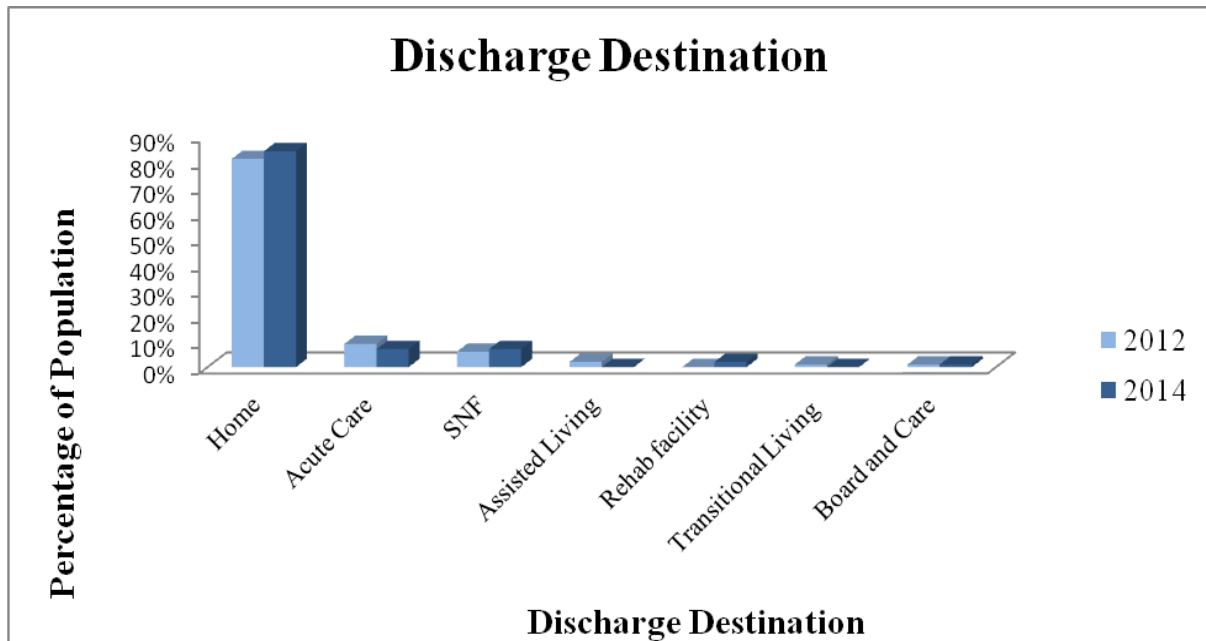
Marital Status of Population

Figure 6.



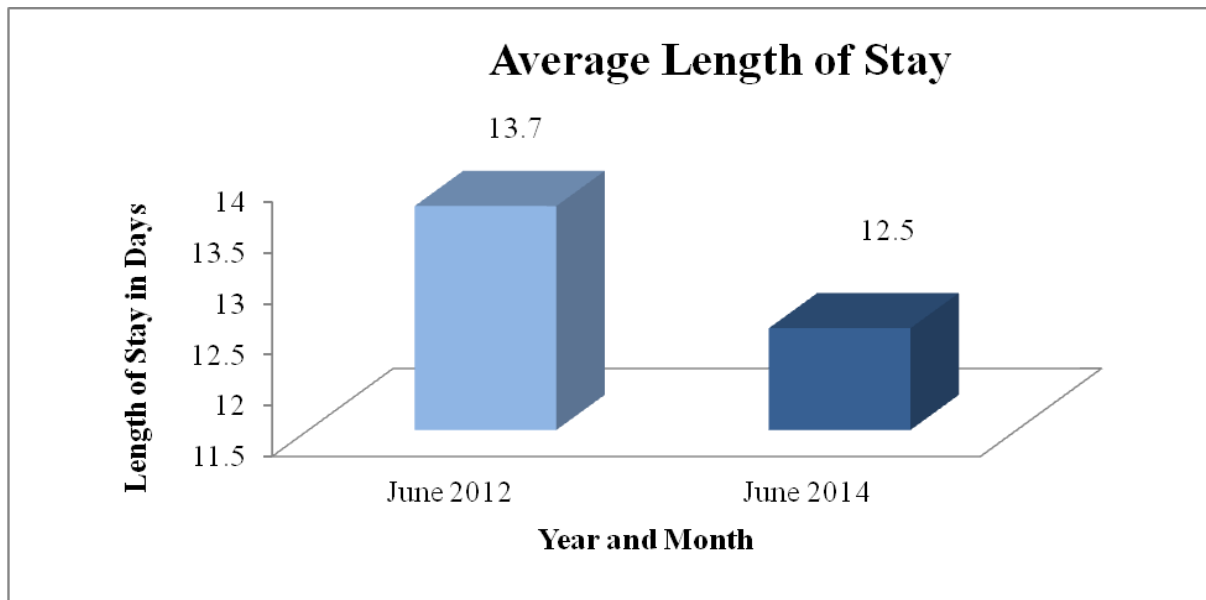
Gender of Population

Figure 7.



Discharge Destination

Figure 8.



Average Length of Stay

Descriptive Analysis

This project evaluated FIM[®] ratings at two different periods of time utilizing a times series design and trend analysis. The data collected from June 2012 was compared to June 2014 after the implementation of the SIP interventions to increase the capture of admission FIM[®] ratings. Objective four was adjusted to include the FIM[®] team admission FIM[®] ratings since nurses made up the FIM[®] team. The FIM[®] team ratings captured on day one were included in the data for 2014.

Objectives & Outcomes

The quantitative data collection was based on the SIP objectives and evaluation of the data after implementation of pre-SIP interventions and the computerized FIM[®] template. Quantitative data will evaluate if the implementation of this SIP met the proposed objectives.

Expected and Actual Outcomes Relative to Objectives

Objective 1: The FIM[®] team will train at least seventy percent (70%) of the nursing staff which included nurse aides, licensed practical nurses and registered nurses, 96 full time equivalents (FTEs), on the computerized FIM[®] template in March and April 2014. A total of 87 FTEs received the FIM[®] template training by April 17, 2014. Forty-five were registered nurses (RNs), thirteen were licensed practical nurses (LPNs), twenty-eight were nurses' aides (NAs) and one nurse did not write a name on the post-test. Sixteen training sessions were provided between 3/10/14 to 4/14/14. Training was completed over four weeks on day, evening and night shifts to capture as many nurses as possible (see Table 7). The first objective was achieved.

Table 7.

Nursing Staff Trained on FIM®

Number of Nurses Trained	Type of Nurses	Objective Achieved
87 of 96 FTEs	RN-45 LPN-13 NA-28 Blank - 1	Yes 91% (87/96)

Objective 2: Nursing staff that receive training in March and April 2014 will score at least 75% on the post-test results. Post-test training scores will be 10% higher when compared to pre-test scores. Thirty-five pre-tests were collected from various staff two to three weeks before the training session. The average pre-test participant score was 79%. Training was provided and the post-test was distributed to staff at the training sessions. Staff was trained on general FIM® concepts, the FIM® template and educated on the importance of documenting FIM® on the day of admission. Eighty-seven post-tests were completed. The post-test was provided approximately three to four weeks after the pre-test depending on which FIM® training session the nurse attended. The average post-test participant score was 99%. The average post-test training scores were 20% higher than pre-test. The second objective was achieved as shown in Table 8.

Table 8.

Nursing Staff Pre and Post-test Scores

Nurses Pre-test Score	Nurses Post-test Score	Objective Achieved
Pre-test average score 79%	Post-test average score 99%	Yes

Objective 3: The computerized FIM[®] instrument will be implemented in April 2014. The third objective: “the computerized FIM[®] instrument will go-live in April 2014,” was met. The FIM[®] team met with the nurses assigned to the computer build team in November of 2013 to design the FIM[®] template for documentation in R-link for the nursing staff and FIM[®] team that would populate staff work list for completion. The computerized FIM[®] template was activated in the live environment of R-link on April 15, 2014 at the RHOP. The FIM[®] template was created to replace the paper version of the FIM[®] instrument and is considered one of the innovations in this SIP.

Objective 4: To increase in the number of FIM[®] assessments documented on the day of admission from nursing staff by fifteen percent (15%) in June 2014 when compared to June 2012. The fourth objective: “increase in the number of FIM[®] ratings documented on the day of admission by fifteen percent (15%) from nursing staff by June 2014 when compared to June 2012.” This objective was met when evaluating the nursing staff FIM[®] documentation which also included the FIM[®] team documentation on day one in June 2014 (see Table 9).

Table 9.

Admission FIM[®] Ratings Documented

	June 2012	June 2014	Objective Achieved
Discharges	n=109	n=103	Yes
Admission FIM [®] Rating Collected on Day One	1036	912	
Possible FIM [®] Ratings (14 categories over 2 shifts)	3052 (109 X 28 = 3052)	2884 (103 X 28 = 2884)	
Percentage of admission FIM [®] ratings collected on day one by nursing staff	33.94%	31.62%	
Percentage of admission FIM [®] ratings collected on day one by the FIM [®] team	N/A	1442 (103 X 14) 1288/1442= 89.94%	

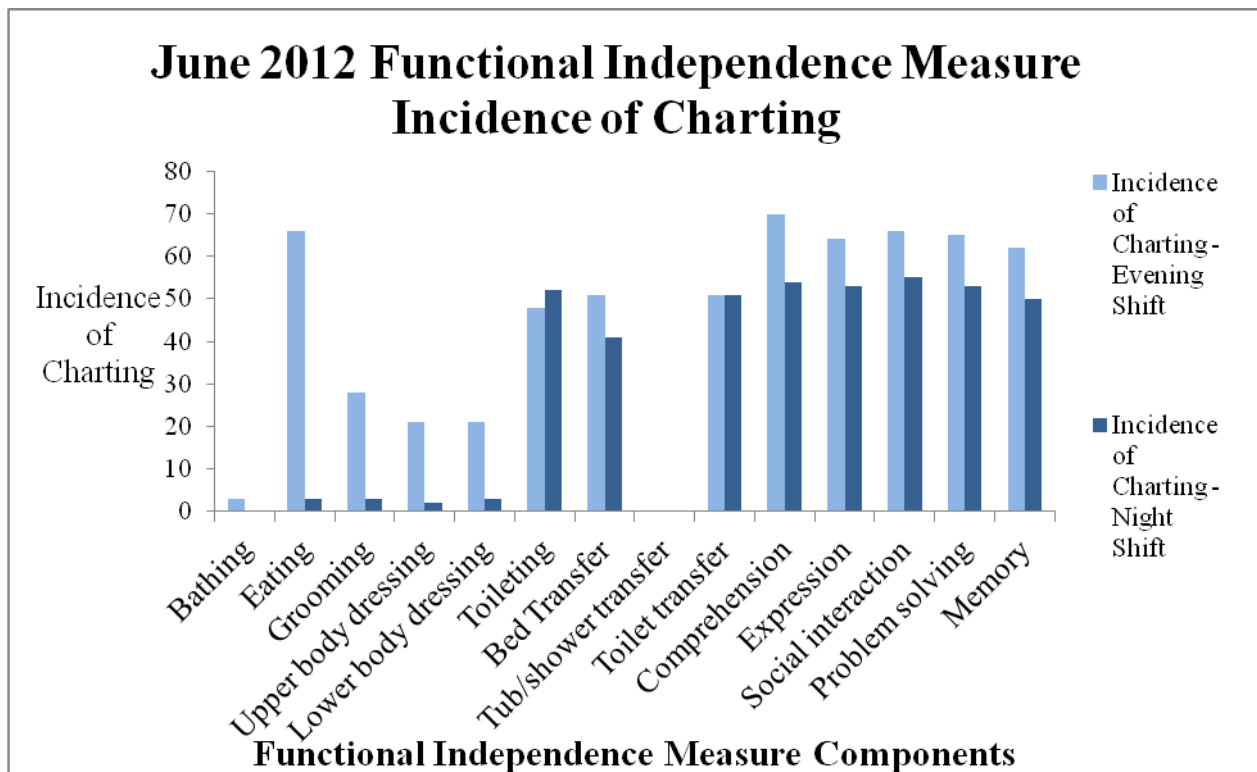
In June 2012 there were 109 patients discharged from the RHOP with nursing staff documenting 1036 of 3052 possible FIM[®] ratings (33.94%) (see Table 9). Of the eighteen total FIM[®] components, bowel and bladder components are mandatory for licensed nurses to complete in a separate template; the physical therapists are assigned to rate stairs and ambulation. The FIM[®] documentation was completed by the nurses on the day of admission since the FIM[®] team was not initiated in June 2012.

In June 2012 there were 109 patients discharged from RHOP that resulted in nurses documenting 1036 FIM[®] ratings. There were fourteen components that could have been documented on over two shifts resulting in 3052 possible FIM[®] ratings that totaled 33.94%.

Although there are eighteen total FIM[®] components, bowel and bladder components are mandatory for licensed nurses to complete in a separate template and the physical therapists are assigned to rate stairs and ambulation. The FIM[®] documentation was completed by the nursing staff on the day of admission since the FIM[®] team was not initiated in June 2012.

In June 2012 the evening shift nurses documented more in the order of cognitive components, toilet transfers, bed transfer and toileting. There were no incidences of bathing or tub/shower transfers by evening nurses in June 2012. The night shift nurses documented more in the order of cognitive components, toileting, toilet transfers, and toileting. There were no incidences of bathing or tub/shower transfers by night shift nurses in June 2012.

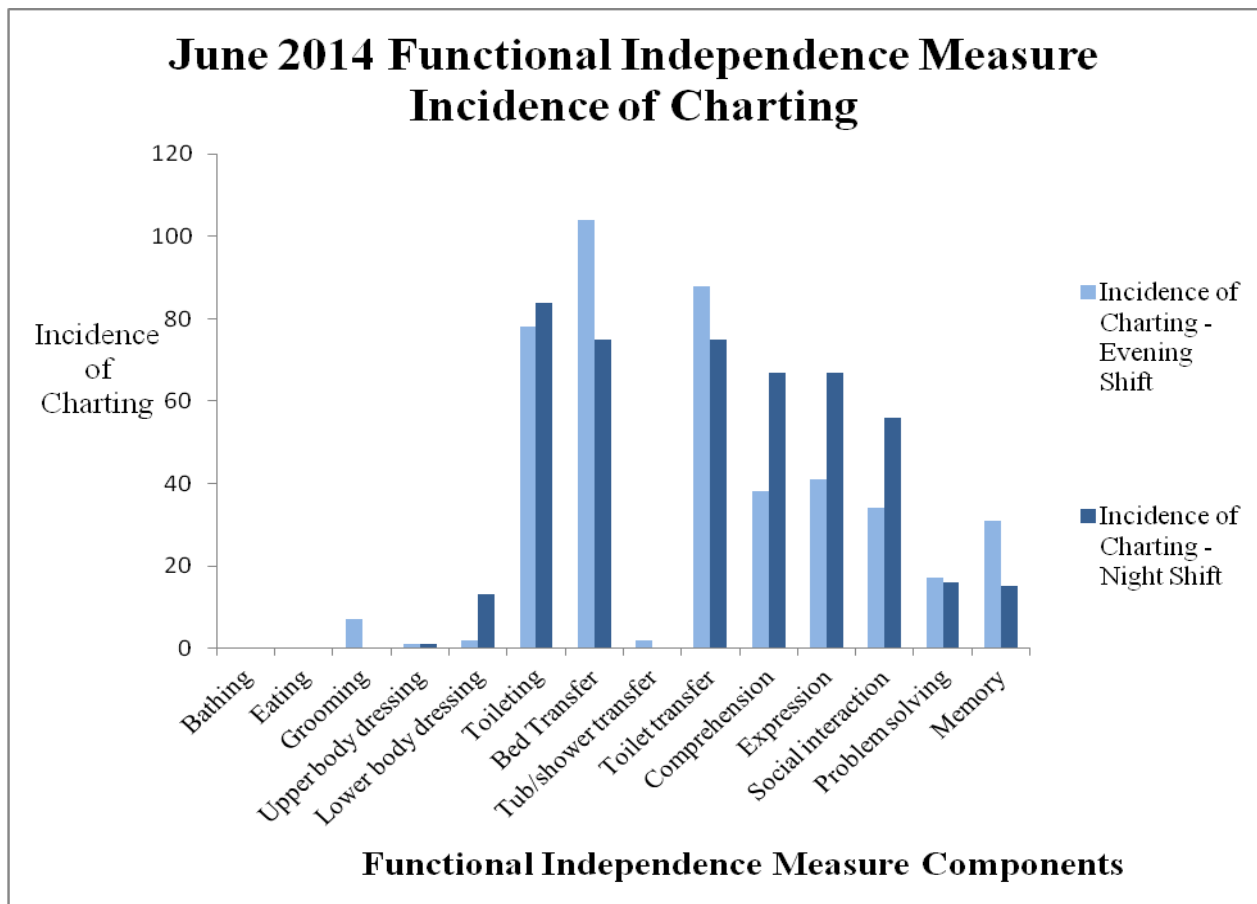
Figure 9.



June 2012 Functional Independence Measure Incidence of Charting

In June 2012, 59% of the FIM[®] ratings were documented by the evening shift nurses totaling 616 of the 1036 entries, as noted in Figure 9. The night shift nurses documented 41% of the FIM[®] ratings totaling 420 of the 1036 entries. Together, on the day of admission evening and night nurses accounted for 33.94% of the possible FIM[®] ratings. In June 2012 the bowel and bladder components were mandatory for nurses to document and required a three day look back upon admission to identify the final admission bowel and bladder admission FIM[®] ratings. Therefore, bowel and bladder components were not included in the 2012 data collection.

Figure 10.



June 2014 Functional Independence Measure Incidence of Charting

In June 2014, 103 patients were discharged from RHOP and nurses documented 912 of 2884 possible FIM[®] ratings. This totaled 31.62% of FIM[®] rating completed documentation. The nurses' documentation of FIM[®] ratings did not exceed the documentation in June 2014. This result was expected as the FIM team was responsible to document admission FIM[®] ratings. The June 2014 FIM[®] ratings were documented more by night nurses as noted by 51% of the FIM[®] ratings totaling 469 of the 912 entries made by night shift nurses (see Figure 10). The evening shift nurses documented 49% of the FIM[®] ratings totaling 443 of the 912. Both evening and night shift on the day of the admission accounted for 31.62% of the possible FIM[®] ratings. In June 2014 the bowel and bladder components were mandatory for licensed nurses to document and required a three day look back upon admission to identify the final admission bowel and bladder admission FIM[®] ratings. Therefore, this component was not included in the 2012 or the 2014 data collection.

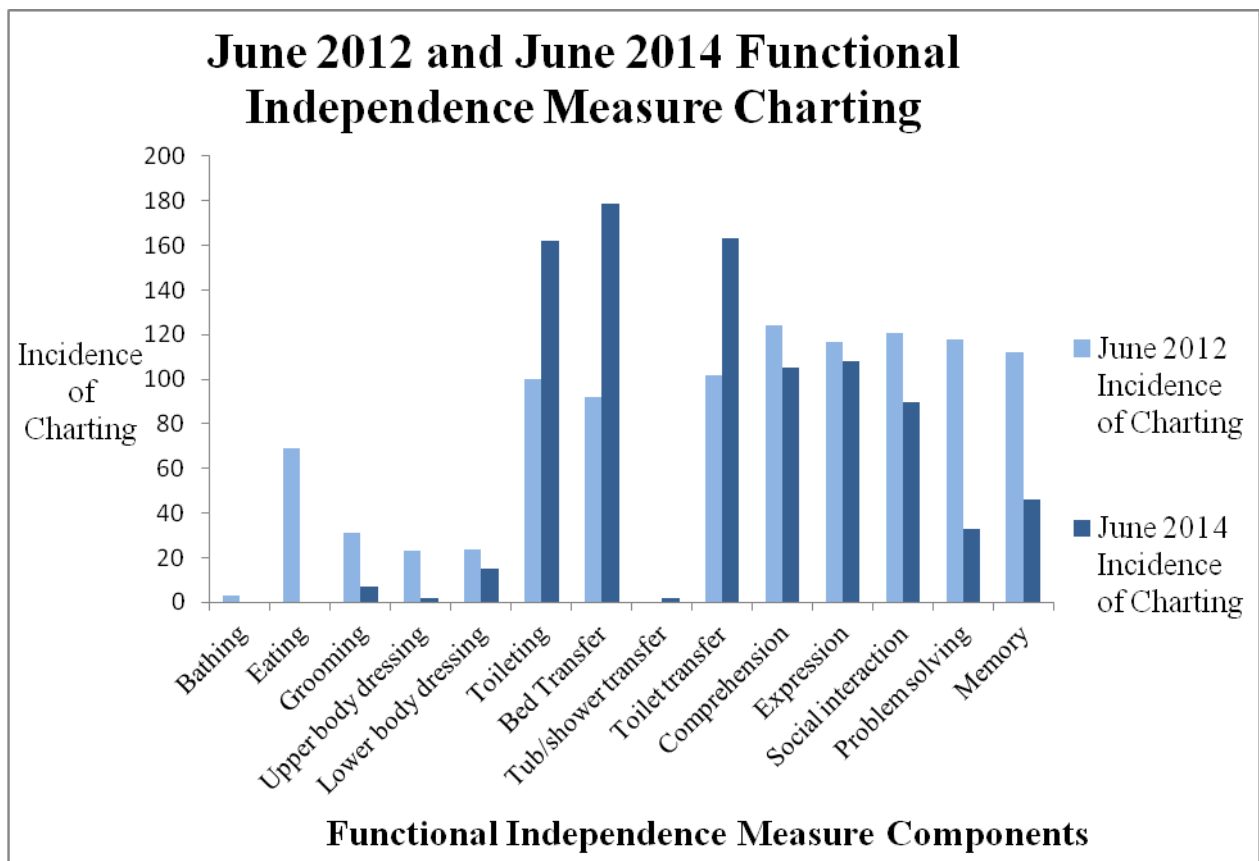
In June 2014 there was a change in FIM[®] documentation from cognitive components to bed transfers, toileting, and toilet transfers. The evening and night shift nurses had similar patterns in scoring more functional and less cognitive components. Evening shift nurses in June 2014 captured more FIM[®] ratings in bed transfers, toilet transfers and toileting and less on cognitive components. Grooming FIM[®] ratings were not captured as much by evening shift nurses in 2014 as the FIM[®] team completed the grooming tasks upon admission. Two tub/showers were completed and two lower body dressing components were rated with no incidence of bathing or eating documented on the FIM[®] template by the evening shift nurses.

The June 2014 night shift nurses scored the highest in toileting, toilet transfers and bed transfers while still documenting on three of the five cognitive components. There was no documentation on bathing, eating, grooming, or tub/shower transfer by night shift staff. Problem

solving and memory were the two cognitive components documented less in June 2014 by evening and night shift nurses.

In June 2014 night shift nurses scored the highest in toileting, toilet transfers and bed transfers while still documenting on three of the five cognitive components. There was no documentation on bathing, eating, grooming, or tub/shower transfer by night shift staff. Problem solving and memory were the two cognitive components that were documented less in June 2014 by evening and night shift nurses.

Figure 11.

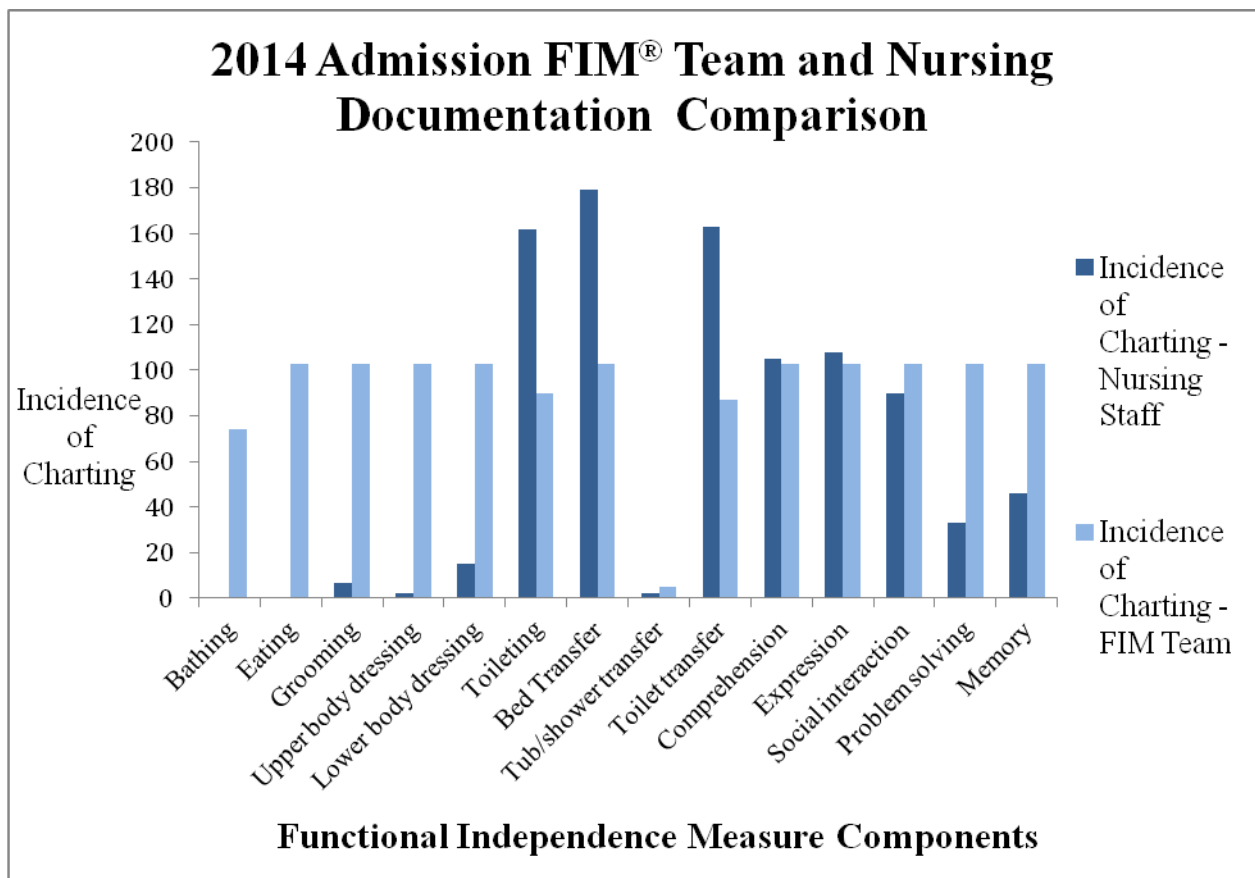


June 2012 and June 2014 Functional Independence Measure Charting

In June 2012 the nurses documented more on cognitive components; comprehension, expression, social interaction, problem solving, and memory, as noted in Figure 11. In June 2014 the nurses in general documented more on toileting, bed transfers and toilet transfers.

The evening and night shift documentation of admission FIM® ratings actually decreased when comparing June 2012 and June 2014 (see Figure 11). The June 2012 and June 2014 data had no incidences of documentation for bathing or tub/shower transfer on night shift. The number of bed transfers rated on evening shift doubled in 2014 when compared to 2012.

Figure 12.



June 2014 FIM® Team and Nursing Documentation Comparison

The FIM[®] team documented 89.94% of FIM[®] components on the day of admission, as noted in Figure 12. The FIM[®] team was not available in June 2012 and positively affected the FIM rating comparison for June 2014. For instance if the FIM[®] team rated the patient on eating and grooming then the nurse was not required to enter another rating since the rating was only required when the event was observed.

The significant increase in FIM[®] documentation in June 2014 is attributed to the FIM[®] team documentation of 89.18% of the admission FIM[®] ratings, greater than the expected 15% increase. The FIM[®] team documented on every patient discharged in June 2014 (n=103) for eating, grooming, upper and lower body dressing, bed transfer and all five cognitive components. Toileting, toilet transfer and bathing had significant numbers of entries with only five tub/shower entries. Tub/shower is the most difficult component to evaluate by the nursing staff and the FIM[®] team due to the amount of energy and effort required by the patient to complete the bath in the tub or shower on the day of admission.

In June 2014 the FIM[®] team, consisting of three nurses staff and one rehabilitation technician, met the patient in the admissions office and initiated the process for obtaining FIM[®] ratings as soon as the patient arrived. This change in practice contributed to a significant number of FIM ratings captured by the FIM[®] team on the day of admission.

The FIM[®] team admission FIM[®] ratings suggested the creation of the FIM[®] team appeared to be a successful innovation. The investigator performed additional chart audits to calculate the amount of documentation completed on day one of admission by the FIM[®] team and compared to documentation by the nursing staff, see Figure 12. The FIM[®] team documented 1286 FIM[®] entries on admission for patients discharged in June 2014 compared to the nursing staff that documented 912 FIM[®] entries. Since the FIM[®] team was comprised of nurse's aides

and one rehabilitation technician their day one FIM[®] documentation was included in objective four. Therefore, the objective was met (see Table 10).

Table 10.

2014 Admission FIM[®] Rating Documentation

	Nursing Staff	FIM[®] Team	Objective Achieved
Number of actual admission FIM [®] ratings on day one	912	1286	Yes
Total possible FIM [®] components	2884	1442	
Percentage of admission FIM [®] documentation	31.62%	89.18%	

Objective 5: A one point decrease of facility admission FIM[®] ratings will be demonstrated by comparing June 2012 and June 2014. The fifth objective: “a one-point decrease of facility admission FIM[®] ratings was evaluated comparing June 2012 and June 2014” (see Table 11). The data for this objective was obtained through chart audits in June 2012 and June 2014 that was completed by the author and a FIM[®] team member. The data was collected manually from paper charts in June 2012 and from the electronic medical record (R-link) in June 2014.

Prior to implementing this SIP, the admission FIM[®] ratings were collected on day two of admission after the patient had an opportunity to rest for one night. The change in practice of

capturing admission FIM[®] ratings on day one was a practice change implemented by this SIP. The implementation of the FIM[®] team was an important innovation for capturing FIM[®] ratings on the day of admission. Objective five was met and exceeded the expected one point decrease in admission FIM[®] ratings; the decrease was exactly 10.7 points.

Table 11.

Facility Admission FIM[®] Ratings

June 2012 Admission FIM[®] Rating	June 2014 Admission FIM[®] Rating	Objective Achieved
63.6	52.9	Yes

Objective 6: A one-point increase in LOS efficiency facility ratings will be demonstrated by comparing June 2012 and June 2014. The sixth objective: “a one-point increase in LOS efficiency facility ratings was evaluated comparing June 2012 and June 2014,” see Table 12. The data was collected through UDSMR[®] database specific for RHOP during June 2012 and June 2014. Admission and discharge FIM[®] data for RHOP is entered in UDSMR[®] allowing the facility to create specific reports on quality data of which the LOS efficiency is one of the standard reports available. LOS efficiency is a quality measure selected to monitor length of stay and FIM[®] improvements during patients’ hospitalization, this indicator allowed administrators to monitor quality of care during implementation of this SIP.

The higher LOS efficiency rating reflects increased quality while the lower the LOS efficiency means a decrease in quality of care. If the LOS efficiency decreased even though the FIM[®] ratings were captured on the day of admission, staff efficiency would be an immediate concern. In this situation LOS efficiency increased to an all-time facility high indicating that patient care was being provided in an efficient manner. Objective six was met and the increase was 1.7, 0.7 higher than expected.

Table 12.

Length of Stay Efficiency Ratings

June 2012 Length of Stay Efficiency Rating	June 2014 Length of Stay Efficiency Rating	Objective Achieved
2.38	4.08	Yes

As a result of the LOS efficiency improvements the facility PEM score calculated through UDSMR[®] improved drastically over a short period of time. These improvements are noted in Table 13 and resulted in RHOP receiving a top performer award from UDSMR[®] in July 2014. In February 2015 the PEM score was noted at 91.8 placing RHOP in the 99% rank amongst all rehabilitation facilities that participate with UDSMR[®].

Table 13.

Program Evaluation Model (PEM) Scores

Year	Program Evaluation Model Score	Percentile Rank
2010	71	50%
2011	73.9	65%
2012	73	76%
2013	87.8	97%
2014	91.8	99%

Objective 7: Increase in operating income by fifteen percent (15%) will be demonstrated by comparing June 2012 and June 2014. In June 2014, 64% of patients classified in the high case mix group (CMG) which reflects patient complexity based on admission FIM[®] ratings, see Table 14. The higher CMG suggests patients are being admitted and evaluated with lower admission FIM[®] ratings indicating patients are more complex and therefore a higher reimbursement is expected.

The inflation rate of 5.47% was applied to normalize the data and resulted in a 9.26% average increase in reimbursement per case, which did not meet the expected 15% increase. The inflation factor was more than expected by the investigator and resulted in this objective not being met. If the inflation factor was not added the total increase would be 14.73% rounded up to 15%, which would have resulted in objective seven being met.

The revenue over expense over the last seven years is presented in Table 15, which describes a loss in 2008 and 2009. A financial gain was appreciated in 2010 due to a reduction of

bad debt, increase in investment income, decreased personnel costs, closure of four outpatient clinics and an inpatient sub-acute unit at the main hospital campus. In 2011 and 2012 the hospital incurred significant losses unless revenue increased. In 2012 the FIM[®] team was initiated and revenue started to increase in 2013 and 2014 as a result of obtaining FIM[®] ratings as soon as possible upon arrival to the facility.

Table 14.

Reimbursement

	June 2012 n=109	June 2014 n=103	Objective Achieved Met
Operating Income	\$2,989,402	\$3,403,199	No (9.26%)
Operating Income and Average per case (including inflation factor 5.47% for June 2012)	\$3,152,922 Per case \$28,925	\$3,403,199 Per case \$33,040	
Patient population in high case mix group (CMG)	25%	64%	

Table 15.

Financial Review

Fiscal Year	Revenue over expense	Gain or Loss
2008	(\$3,408,077)	Loss
2009	(\$1,359,910)	Loss
2010	\$2,304,466	Gain
2011	(\$2,230,686)	Loss
2012	(\$1,627,686)	Loss
2013	\$1,177,516	Gain
2014	\$1,900,301	Gain

Six of the seven SIP objectives were met. Objective 7 was not met as the operating income did increase but the increase was not up to the projected 15% when compared to June 2012 with the adjustment for inflation.

Summary

The purpose of this SIP was to increase the assessment of admission FIM[®] ratings on the day of the patient’s admission to improve the quality of care provided to patients and reimbursement paid by insurance plans to RHOP. The conceptual framework selected to guide this project was the logic model to carefully plan each step of this SIP and to identify clear outcomes to evaluate its success.

A time series design was chosen to evaluate admission FIM[®] outcomes, FIM[®] LOS efficiency, and admission FIM[®] ratings at two points in time after the introduction of the innovation. The innovation for this SIP are the implementation of the FIM[®] team, process changes targeted at early FIM[®] patient assessments and a computerized FIM[®] instrument that populates the nursing staff work list periodically during the first forty-eight hours after

admission. The sample population is the discharged patients from RHOP during June 2012 and June 2014 with no patient exclusions applied.

The data indicated that the implementation of the FIM[®] team was instrumental in meeting objectives four, five and six. The increased documentation of admission FIM[®] ratings was noted prior to the implementation of the computerized nursing FIM[®] template. The expected increase in computerized FIM[®] template documentation was successful when combining the nursing and FIM[®] team documentation of admission FIM[®] ratings on day one. In addition, an increase in the documentation of FIM[®] ratings for toileting, bed transfers and toilet transfers was noted in June 2014 when compared to June 2012. Therefore, the nursing FIM[®] template innovation with the innovation of creating a FIM[®] team to complete admission FIM[®] ratings were successful. The FIM[®] team and nursing documentation upon admission was successful at improving quality outcomes and increasing reimbursement.

The learning point from this SIP is the importance of providing staff certification through FIM[®] training during the new hire orientation period. During this SIP, staff was trained on FIM[®] and the importance of immediate capture of FIM[®] upon admission. The changes in the process of implementing FIM[®] training and certification during orientation were effective.

The introduction of the FIM[®] template with the link to the staff work list was effective in triggering staff to document admission FIM[®] ratings as the template was completed for each new admission. The creation of the FIM[®] team and process changes implemented for early capture of FIM[®] ratings was the most successful innovations for this SIP. The FIM[®] team documentation of admission FIM[®] was especially critical to the success of this SIP. The author believes the admission nurses were focused on completing the nursing evaluation upon admission and although trained in FIM[®], it was not their immediate priority as it was for the FIM[®] team. The

combination of the FIM[®] team and the diligent nursing admission assessments resulted in a successful SIP.

Chapter 5. Discussion of Findings

The FIM[®] team was implemented following the Logic Model in an effort to establish a process to obtain early capture of FIM[®] ratings with each patient admitted. The data components was collected and aggregated utilizing descriptive statistics based on objective and the findings suggest that the SIP innovations were successful at improving the quality of care provided to patients at the RHOP.

There were numerous pre-SIP interventions that contributed to the success of this SIP including the creation of the administrative FIM[®] team and the direct care FIM[®] team. Both the direct care and administrative FIM[®] teams were stakeholders in this SIP and contributed towards the success of this project. This section will review the outcome data; evaluate findings as it relates to the FIM[®] process, implications for IRFs, and overall practice recommendations.

Expectations and Actual Outcomes Compared to Objectives

The innovations introduced supported the outcomes. The FIM[®] team collected admission FIM[®] ratings as the patient entered the facility, extensive FIM[®] training was provided and the R-link FIM[®] template was initiated. Each objective supported the innovations introduced and the ability of the facility to enter FIM[®] ratings on day one of admission. The clinical question centered on the ability of the FIM[®] team and the nursing staff to increase the number of FIM[®] ratings obtained on the day of admission.

The number of FIM[®] ratings captured on admission increased as anticipated with the implementation of the FIM[®] team and was successful at meeting objectives five and six. The administrative FIM[®] team guided this SIP and provided input on how to create the computerized FIM[®] template with specific instructions to capture the lowest ratings and included how to list

the FIM[®] levels in the template from lowest to highest. Training on the FIM[®] template and early capture of FIM[®] ratings was successfully completed and noted in objectives one and two. The evaluation objectives were met by the staff being trained on the application of the FIM[®] template which was implemented on April 15, 2014. More than 70% of the nursing staff was trained and the post-test scores were 20% higher than the pre-test scores with the overall post-test scores at an unexpected 99%.

Although the post-test scores increased it was unknown if the increase in post-test scores was related to the FIM[®] training completed with this SIP or the recent FIM[®] training and certification completed this year with all levels of nursing staff which is due every two years. Regardless the staff appeared to exhibit an increased knowledge of FIM[®] after the SIP FIM[®] template training as noted by increased post-test scores.

The facility LOS efficiency rating increased, the facility admission FIM[®] ratings decreased and operating income all increased but the latter was not to the expected level. Six of the seven objectives were met. Objective seven was the only objective not met as the operating income did not increase by 15% with the addition of the inflation factor.

Interpretation of Findings

This SIP was implemented as a quality improvement project and the outcomes were linked to quality objectives supported by the organization. This project was identified as a priority and the majority of admission FIM[®] ratings were being collected on day two and three of admission therefore this quality improvement project focused on collecting admission FIM[®] ratings on the day of admission.

The objectives were evaluated by performing chart audits and running outcome reports in UDSMR[®] based on project objectives. The results supported the innovations introduced as noted by decreased admission FIM[®] ratings, increased LOS efficiency and increased reimbursement. Although operating income did not meet the anticipated increase of 15% the projected increase in operating income included in objective seven may have been too aggressive for this SIP.

FIM[®] Ratings

The decrease in admission FIM[®] ratings was credited to the early capture of FIM[®] ratings upon arrival to the facility. The increase in FIM[®] documentation supported lower FIM[®] ratings upon admission and resulted in FIM[®] ratings dropping by 10.7 points which was a phenomenal decrease in two years. This outcome was suggestive that the early capture of FIM[®] ratings was the main contributor. The admission FIM[®] documentation was anticipated to increase with the implementation of the FIM[®] team and expectation of early FIM[®] rating capture as the main duty within the FIM[®] team member's role. The FIM[®] team completed 89.18% of FIM[®] documentation on the day of admission which was a huge success for this SIP. The nursing admission FIM[®] documentation was much lower than the FIM[®] team admission documentation and may suggest that the nurses were relying on the FIM[®] team to collect the admission FIM[®] ratings on the day of admission.

Admission FIM[®] ratings decreased by 10.7 points compared to an expected one point decrease. Admission FIM[®] ratings are required by Medicare to be collected within the first three days of admission. Previously RHOP staff waited until day two to begin capture of admission FIM[®] ratings. The problem that occurred was due to a delay in capturing day one FIM[®] ratings and it then appeared as though our patients presented at a higher functional level upon arrival to

our facility when admission FIM[®] data was compared to national counterparts that subscribe to UDSMR[®].

The LOS efficiency increased by 1.7, 0.7 higher than the expected. The success of this finding is linked to the increase in admission FIM[®] rating documentation and can also be traced back to the FIM[®] team and the early capture of FIM[®] ratings. Early capture of FIM[®] ratings provides accurate LOS projections for new admissions. In June 2012 the admission FIM[®] ratings were captured on day two and were falsely elevated to indicate the patients were functioning at a higher level upon admission.

Documentation

In June 2012 the nurses documented consistently on the cognitive FIM[®] ratings and in June 2014 the nurses documented more on bed transfers, toileting and toilet transfers thus increasing the diversity of FIM[®] documentation. Since the FIM[®] team was active in 2014 and did not exist in 2012; the FIM[®] team focused on capturing FIM[®] ratings immediately upon arrival to RHOP which increased the incidence of FIM[®] documentation in June 2014. RHOP is in the process of expanding the FIM[®] team to add an additional member that will be assigned to the admissions office to assist with immediate assessment of the FIM[®] components.

Bathing and eating were not documented by the nursing staff in June 2014, probably because the FIM[®] team provided baths on the day of admission. Grooming was also impacted as the nurses only charted FIM[®] grooming ratings six times in June 2014 and the FIM[®] team captured bathing and grooming ratings for all 103 patients admitted. During the FIM[®] training bathing was focused on to increase capture upon admission.

Upper body dressing FIM[®] ratings was documented once on evening and once on night shift in 2014 by the nursing staff and the FIM[®] team captured 103 upper body dressing FIM[®] ratings. Since patients are changed into hospital clothing upon arrival for ease of assessment by licensed staff it was expected that upper body dressing FIM[®] ratings would be captured by the FIM[®] team with all patients. In 2014 lower body-dressing FIM[®] ratings were charted thirteen times by night shift and twice by evening shift staff and the FIM[®] team captured 103 lower body dressing ratings. Lower body dressing is usually charted when the nurses' change the patient's clothing upon admission and the shorts or pants are removed. These findings indicate there is an opportunity for further training in these areas to increase capture of FIM[®] ratings as the patient performs these tasks.

The nursing FIM[®] documentation in 2014 did not significantly increase perhaps due to complacency of the nursing staff since the implementation of the FIM[®] team and the expectation that the FIM[®] team would capture admission FIM[®] ratings. This was found to be true when the FIM[®] team members were off for various reasons and the majority of the facility admission FIM[®] ratings were not captured on the day of admission. As the data was evaluated it was identified that in June 2012 the FIM[®] components were not captured on day one but instead on day two and thus reflected higher admission FIM[®] ratings when compared to June 2014.

In evaluating the FIM[®] documentation characteristics it appeared as though the nurses quickly documented and initialed on the FIM[®] instrument paper copy in June 2012 but in June 2014 the template required at least three clicks to document one FIM[®] rating. In June 2014 the FIM[®] team was evaluating FIM[®] ratings as soon as the patient arrived on property which impacted the amount of admission FIM[®] ratings the nursing staff had left to evaluate on the day of admission.

FIM[®] Team

The direct care FIM[®] team met periodically throughout the implementation of this SIP and after the SIP was completed to discuss ideas to improve patient flow and early capture of FIM[®] ratings. The FIM[®] team discussed process improvements to streamline the admission process which included purchasing walk-talkies to increase communication regarding the arrival of new admissions while maintaining confidentiality. The walkie-talkies allowed the FIM[®] team members to directly communicate with one another to organize the capture of FIM[®] ratings with each new admission.

The FIM[®] team members were instructed to provide a ‘hand off’ report on the patient’s progress with the FIM[®] components to the assigned nurse. This communication was important for patient safety as well as educating the nursing staff on the role of the FIM[®] team and the capture of admission FIM[®] ratings timely. The ‘hand off’ report provided the nursing staff information about the level of assistance the patient will need with activities of daily living later in the shift.

Staff members that utilize FIM[®] on a daily basis may be wondering about bowel and bladder FIM[®] ratings. The bowel and bladder FIM[®] ratings were not included in the data collection for June 2012 and June 2014 since admission bowel and bladder ratings require a look back period that extends into the patient’s acute care stay as well as the first three days of the IRF admission. The nursing staff is responsible for charting bowel and bladder ratings for all patients upon admission, periodically throughout the patient’s stay and upon discharge. Therefore, bowel and bladder ratings were not included in the admission FIM[®] documentation since it is mandatory for the nurses to document on bowel and bladder FIM[®] for every patient.

There was a suggestion from the direct care FIM[®] team to improve access to the bowel and bladder FIM[®] components in the template. Although the licensed staff members were required to chart the bowel and bladder ratings it was suggested to allow the NAs and LPNs the ability to chart the ratings to provide the level of assistance for the bowel and bladder components. The administrative FIM[®] team suggested that the bladder volume instrument (BVI) be added to the bladder FIM[®] rating list to allow the nurses to select BVI when a BVI was performed which automatically resulted in the initiation of the bladder protocol and a FIM[®] 4 for bladder. These suggestions went live in R-link. The BVI was added to the FIM[®] template and was live in July 2014. The bowel and bladder components were added to the LPNs and NAs FIM[®] template in December 2014.

Overall Review and Unexpected Findings

Upon review of the data it was noted that the FIM[®] team was instrumental in capturing admission FIM[®] ratings. After evaluating objective four it was noted that the nursing staff did not increase their documentation of admission FIM[®] ratings yet objective five was hugely successful due to the FIM[®] team. The FIM[®] team did not exist in June 2012 therefore the author can deduce that the success of objective five is mostly attributed to the FIM[®] team.

The PEM score for RHOP has slowly improved since 2010 and in 2013 the percentile rank for RHOP reached the 97th percentile, the highest level in RHOP history since submitting data to UDSMR[®]. As a result of reaching the 97th percentile RHOP received a top performer award from UDSMR[®] in June 2014. This award was a pleasant yet unexpected surprise.

Another unexpected finding was the facility overall Press Ganey score that increased from 86.3 (n=424) in 2012 to 89.8 (n=430) in 2014. This is suggestive that the earlier capture of admission FIM[®] ratings projected a longer length of stay and increased patient satisfaction since

an accurate LOS was projected and the patient achieved a higher level of independence. The FIM[®] team provided a warm welcome to patients and families that also increased their comfort level with being in a new environment. The FIM[®] team answered any questions that the patient and/or family had about the facility, therapy schedule and accommodations at RHOP. The positive comments reflected in the Press Ganey survey frequently mentioned a specific FIM[®] team member by name numerous times.

This SIP evaluated the financial reimbursement. The operating income increased when comparing June 2012 and June 2014 with an adjusted inflation rate added to June 2012 in the amount of 5.47%; however the total increase in operating margin did not meet the expected 15% increase once the inflation rate was added. The total increase operating income in June 2014 with the inflation rate added was 9.26%. This objective may have been too aggressive with an expected 15% increase in operating margin.

Although the computerized FIM[®] template was convenient to use it did not increase the incidence of nurses charting on admission FIM[®] ratings in June 2014 possibly attributed to the early deployment of the FIM[®] team and immediate capture of FIM[®] ratings. The assignment of the FIM[®] team to the admissions office assisted with immediate capture of patient FIM[®] ratings during the admission process.

Fall data was evaluated for 2012 and compared with 2014 to determine if the fall rates had decreased as a result of the FIM[®] team spending extra time with the patient and family upon admission. In 2012 there were twelve falls during the first three days of admission in 2014 there were six falls. Falls decreased by 50% within the first three days of admission suggesting an indirect reduction in falls possibly attributed to the extra time the FIM[®] team allocated with the patient upon admission.

As a result of these overall findings the author decided to develop a FIM[®] training refresher course for the nursing staff in November 2014. A total of seventy nursing staff members were provided a refresher course on FIM[®] which also included the project findings and areas to improve and focus on for FIM[®] documentation. The areas discussed during the training included the updates for the bowel and bladder components in the FIM[®] template that were activated in December 2014 and a focus on capturing more episodes of bowel and bladder FIM[®] since RHOP facility bowel and bladder FIM[®] ratings are still rated higher when compared to the nation.

Implications and Recommendations

The major implication of this SIP is that the direct care FIM[®] team is identified as being the successful innovation and a valuable asset to capturing admission FIM[®] ratings from the moment the patient arrives on campus. Prior to this SIP the FIM[®] ratings were captured by the nurses and therapists if the FIM[®] component was observed, the missing link was the lack of urgency and dedication to obtain FIM[®] ratings upon admission.

The FIM[®] team had a sole objective to capture all of the FIM[®] ratings on the afternoon and early evening of the patient's admission. The FIM[®] team's primary job duty is to capture admission FIM[®] ratings as compared to the nursing and therapy staff that are focused on obtaining admission information and a head to toe assessment. The FIM[®] team is focused on capturing as many FIM[®] ratings as possible upon admission and had a significant impact on this SIP. This SIP evaluated the nursing staff documentation of admission FIM[®] ratings, however in June 2012 the FIM[®] team did not exist, therefore the data comparison for June 2012 and June 2014 admission FIM[®] frequency of documentation is not an equal comparison.

Future FIM[®] training for nursing staff will be coordinated in June 2015 to discuss FIM[®] rating documentation and trending. The ability of nurses to capture additional FIM[®] ratings on the day of admission is critical to capture the lowest FIM[®] ratings. For this reason the FIM[®] team will coordinate additional FIM[®] training sessions on a regular basis for staff with a specific focus on evening and night shift. The FIM[®] training will emphasize documenting admission FIM[®] ratings based on care provided.

The FIM[®] template was successful at capturing admission FIM[®] ratings and cataloged the information in one area of the computerized chart whereas in June 2012 the documentation was in an older computerized documentation system without the capability of order entry or ability to create a new template. In June 2014 a new computerized charting system was active with the capability of order entry, a discipline specific work list and the ability to create new templates as needed. The biggest benefit of the computerized FIM[®] template is the ability to create future reports on FIM[®] documentation patterns. Creating an R-link report tends to take longer to create when compared to a standard documentation template. A formal request has been submitted to the IRF-PAI team to create a FIM[®] rating report to extract FIM[®] documentation data that will also assist with collecting data for the IRF-PAI that is required for Medicare reimbursement.

Scientific Underpinnings for Practice

The result of this SIP has significant potential to improve the quality of rehabilitation care and recommended the expansion of the FIM[®] assessment to the moment of patient arrival on campus. Training a nurse's aide or rehabilitation technician to specialize and become certified in FIM[®] for the sole purpose of capturing admission FIM[®] ratings can lead to significant quality

improvements in LOS efficiency, capture of admission FIM[®] ratings and increased operating income. A dedicated FIM[®] team is a value add to an IRF as noted by increased quality measures and customer satisfaction ratings. Although the author is unsure exactly which innovation or practice change was the most effective, improvements in care through change was achieved and embraced by the nursing staff.

Although the concept of a FIM[®] team capturing FIM[®] ratings upon admission sounds simple it was initially met with resistance as each discipline was set in the process for assessing and admitting new admissions. The late capture of FIM[®] ratings impacted reimbursement and a preliminary review of admission FIM[®] ratings revealed that it was time to investigate and implement practice changes, of which one of the changes involved the formation of the FIM[®] team. Implementing change is not easy and there were many questions from staff due to the change in flow of the new admission involving the FIM[®] team and impacting other team members. Once the territorial barriers were removed and staff understood the function of the FIM[®] team the admission process progressed smoothly.

Organizational & Systems Leadership for Quality Improvement & Economics

The RHOP strategic plan for this SIP was focused on increasing the capture of FIM[®] ratings on the day of admission. The initiation of the FIM[®] team contributed to the success of the increased capture of FIM[®] ratings on the day of admission. This SIP specifically evaluated if the nursing staff increased their capture of FIM[®] ratings on the day of admission when June 2012 and June 2014 was compared. This is not an equal comparison since the FIM[®] team was operational in June 2014 which contributed to the increased capture of admission FIM[®] ratings

and resulted in a decrease in the overall documentation of admission FIM[®] components by the nursing staff.

The change in practice for admitting patients to RHOP was economically beneficial and increased the operating income and amount of reimbursement received per patient. A simple practice change that focused on patient-centered care and the capture of admission FIM[®] ratings resulted in an average increase of \$4115 per patient admitted.

Facility Leadership

As the CNO and author of this SIP it was important to be directly involved in this project for numerous reasons. It was beneficial for the IRF-PAI staff that collected the FIM[®] ratings on admission and entered the data into the IRF-PAI since capturing FIM[®] ratings did not appear to be a priority for nursing staff on admission. The IRF-PAI staff struggled with locating the admission FIM[®] ratings prior to SIP innovation implementation, therefore the FIM[®] template was an important innovation that was also linked to accurate documentation and reimbursement.

The decision of the author (CNO) to champion the collection of FIM[®] ratings and participate in the FIM[®] staff training was essential to the success and process of hardwiring the capture of FIM[®] assessments on the day of admission. Previous to this SIP there was no sense of urgency to capture FIM[®] ratings on the day of admission. The author (CNO) participated in the training sessions for staff to reinforce that management supported the early capture of FIM[®] ratings on the day of admission. Staff that charted consistently on admission FIM[®] ratings was presented a hand written card by the CNO acknowledging their FIM[®] documentation.

This project proceeded in a smooth manner with the creation of the FIM[®] template in less than six weeks and was considered an important innovation for this SIP. As the CNO and author

of this SIP, participation was essential to facilitate this quality improvement project and provide close oversight of FIM[®] documentation as it impacted quality of care and reimbursement. This SIP supported the CNO role as being directly involved in EBP quality improvement projects.

The focus of this SIP was on admission FIM[®] ratings since the facility FIM[®] ratings historically submitted to UDSMR[®] was always higher than national benchmarks. The one element the IRF collected that impacted reimbursement and length of stay was admission FIM[®] ratings. Although there had been an interdisciplinary team working to improve capture of admission FIM[®] ratings for years, the team was unable to decide on a process to improve the earlier capture of admission FIM[®] ratings. New leadership and an urgent need to improve reimbursement resulted in decisions being made to implement a FIM[®] team even though there was quite a bit of resistance to this innovation. After implementation of the SIP innovations the facility admission FIM[®] ratings decreased and resulted in an increase in quality outcomes and reimbursement for the facility. The implementation of the FIM[®] team and FIM[®] template innovations, with a focus on early capture of FIM[®] ratings, was successful in increasing reimbursement.

The FIM[®] team worked closely with the IRF-PAI staff to understand FIM[®] ratings and converse with patients from the point of arrival on campus until the patient reached their room. During this time the FIM[®] team asked questions as they explained the process for admission to rate the cognition components of FIM[®]. Problem solving was evaluated as the call light was shown to the patient and the buttons were explained then the patient was asked to provide a return demonstration. This process of explaining the call light was previously part of the admission process but the FIM[®] team took it one step farther by evaluating for problem solving and memory through the process of recall and return demonstration.

Safety is a huge concern in a hospital setting especially with newly admitted patients in an unfamiliar setting. The FIM[®] team identified that patients being admitted usually asked to go to the bathroom as soon as they reached their room. Therefore the FIM[®] team decided to offer use of the bathroom as soon as the patient was wheeled into their room. Offering to use the bathroom seemed to be a stress reliever for the patient and was identified as a customer service initiative when admitting a patient. The FIM[®] team member toileted the patient and stayed with the patient until the patient was finished. Upon admission each patient is considered ‘stay with’ in the bathroom until cleared by the patient’s primary therapist.

Another benefit of the FIM[®] team was the dedicated time with the patient and family upon admission. The time the FIM[®] team spent with the patient and family was important to introduce them to our facility and services while making them feel welcome. Upon discharge each patient is mailed a Press Ganey survey and some patients previously commented that they did not receive enough information about our facility and/or services. Since the FIM[®] team was initiated that comment was replaced with compliments about the FIM[®] team and their warm welcome which includes information about our facility and services.

The warm welcome from the FIM[®] team intermittently interfered with the nurse who was waiting to complete the nursing assessment and the physician who was ready to start their history and physical. Since the patient needed to go to the bathroom and change into a gown for the assessment process it was negotiated that the FIM[®] team would complete those tasks. In addition the FIM[®] team agreed to obtain the admission vital signs which would assist the nurse by allowing her to complete other duties before beginning the admission assessment.

The RHOP also struggled with lower LOS efficiency outcomes when compared to the nation. After implementing the pre-SIP and SIP innovations the facility LOS ratings improved

dramatically. The improvement in LOS efficiency also contributed to improved facility quality outcomes and an award from UDSMR[®] for being a top performer.

Evidence-Based Practice & Translational Science

The literature search did not reveal specific evidence on how to capture admission FIM[®] ratings immediately upon admission to a rehabilitation facility. The evidence was lacking on strategies to capture timely admission FIM[®] ratings. The administrative FIM[®] team brainstormed ideas to stimulate immediate capture of FIM[®] ratings since the nursing staff was busy completing the required admission assessment and the FIM[®] assessments were not a priority. Therefore the direct care FIM[®] team was initiated in September 2012. This was a landmark initiative for the facility and based on the data the most important innovation that contributed to the success of this SIP.

The evidence to support behavioral changes identified in the literature were implemented and found to be effective when implementing change. Although practice changes are not easily implemented the behavioral changes identified in the literature provided tools for the author and the direct care FIM[®] team to utilize to successfully implement change. The staff had many questions about the FIM[®] team that were answered and the literature reinforced that good communication and availability of managers to answer questions and reinforce change was critical to hardwiring changes in an organization.

The literature supported that behavioral change was important for hardwiring process changes because some staff may not participate with completing the FIM[®] template. The 2014 chart audits identified a group of staff that were consistently completing the FIM[®] template and charting on more FIM[®] components than other staff. The staff identified as charting consistently

in excess of the required FIM[®] components was recognized by author (CNO) with a thank you card that included a five dollar gift card.

Management follow up with staff that were only charting the bare minimum of FIM[®] documentation and recognition of staff that were charting exceptionally well on the FIM[®] template were critical factors noted in the literature to hardwire behavioral changes. Taking the time to thank and reward staff and follow up with minimal performers was found to be effective to reinforce the importance of FIM[®] documentation.

Information Systems Technology

One of the innovations for this SIP was the development of a computerized FIM[®] instrument to replace the previous paper FIM[®] instrument. Although the documentation of FIM[®] ratings did not increase on the computerized FIM[®] instrument, the development of the template was a valuable component to this project. In June 2014 the chart audits were completed through the computer system whereas in June 2012 the audit was completed in the paper chart.

Moving away from paper copies and towards a fully integrated medical record system is an important goal and one that RHOP has phased in over the next two years. The majority of patient charting is completed in the electronic medical record although few documents remain as paper copies. Over the next two years RHOP plans to have a fully integrated electronic medical record with the ability to bar code for medication administration.

The automation of the FIM[®] instrument was an important contribution of this SIP as the computerized FIM[®] template implementation included specific training on the importance of FIM[®] assessments. Future implications for the information system include the ability to create and run reports specifically to obtain FIM[®] ratings per patient and clinician. Developing an

application specific to FIM[®] that would be cloud based and allow staff to enter FIM[®] ratings from an iPad would be ideal.

Health Care Policy & Ethics

The RHOP administrators decided that hospital policy would include FIM[®] training for all direct care clinicians to prepare for certification on FIM[®]. This investment in FIM[®] education and personnel was important to obtain quality FIM[®] ratings and increase efficiency of when obtaining admission FIM[®] assessments. The FIM[®] team members became FIM[®] specialist as they evaluated and rated FIM[®] on a daily basis. As a result the nursing staff would inquire how the FIM[®] team would rate a certain component if the nurse was unsure.

The ethical component was noted by an increased confidence in the FIM[®] ratings obtained due to mandatory FIM[®] certification for clinicians. As the staff was trained and certified in FIM[®] their comfort level of rating FIM[®] increased. The process for FIM[®] recertification is repeated every two years.

Inter-professional Collaboration

The FIM[®] team facilitated inter-professional collaboration amongst disciplines and although there was a rocky start due to some staff not understanding the role of the FIM[®] team, persistent follow up by management was provided to communicate the role and responsibilities of the FIM[®] team members. Since all disciplines utilize the FIM[®] instrument to document functional and cognitive progress it was important for all disciplines to understand the role of the FIM[®] team. The nurses recognized the benefits of the FIM[®] team as they started to evaluate the patient with the FIM[®] team member to observe the patient's transfer which improved collaboration and teamwork.

Nurse aides were trained and certified in FIM[®] for the first time in June 2012 with the goal that all nursing staff would be certified to rate FIM[®] by 2013. The goal was accomplished in 2013 and the facility continues to certify all levels of new hire nursing and therapy staff to rate FIM[®]. Certification in FIM[®] evaluation by all team members assisted with solidifying inter-professional collaboration amongst all disciplines.

Plans for Dissemination

This paper will be utilized for publication in consultation with the CEO since data and figures are proprietary to the RHOP. One of the author's publication goals is to summarize this quality improvement projection on early capture of FIM[®] ratings upon admission and submit to The Rehabilitation Nursing Journal.

The date for dissemination of this presentation was on April 14, 2015 at ten o'clock in the morning in a designated Rehab Conference Room. The presentation was open to the public as well as the RHOP staff.

Summary

This SIP is considered to be successful based on the pre-SIP and SIP interventions implemented that appeared to have positively affected the outcomes based on established project objectives and goals. Pre-SIP and SIP interventions included the initiation of the administrative FIM[®] team in August 2012, direct care FIM[®] team initiation in October 2012, the nurses' aides national FIM[®] training and certification in 2012, computerized FIM[®] template, and increased communication on FIM[®] outcomes. In addition the RHOP received the 2013 and 2014 Top Performer Award from the UDSMR[®] for outstanding rehabilitation performance. This award identified the RHOP as a top rehabilitation performer when compared to all rehabilitation

hospitals in the nation due to the PEM facility rank of 97% and 99%. Receiving this award was a surprise and possibly an outcome from the many EBP interventions introduced in this SIP. Since the top performer award was not expected, the investigator decided to review the results that led to the receipt of this award.

UDSMR[®] prepares a facility PEM scorecard that includes discharge FIM[®] totals, FIM[®] change, LOS efficiency scores, percentage discharge to community and percentage discharge to acute care. The higher the PEM score reflects an increase in the quality of care. The PEM scores for RHOP are as follows;

- 2010 – score 71.3, rank 50%
- 2011 – score 73.9, rank 65%
- 2012 – score 73, rank 76%
- 2013 – score 87.8, rank 97%
- 2014 – score 91.8, rank 99%

These scores suggest that this SIP was successful in changing staff behavior through training and overall FIM[®] awareness. Objectives one and two was created to establish a curriculum for training on the new FIM[®] instrument template and post-test scores were higher than pre-test scores. Objective three was met as the FIM[®] instrument template was live on April 15, 2014. Objective four was met as the nurses and FIM[®] team charted 89.18% more in June 2014 as compared to June 2012. Objective five was met as there was a greater than one point decrease in admission FIM ratings, 52.9 in June 2014 as compared to 63.6 in June 2012. Objective six was met as LOS efficiency was improved by more than one point, 4.08 in June 2014 as compared to 2.38 in June 2012. Objective seven was not met as the operating income in

June 2014 was not more than 15% when compared to June 2012 with a 5.47% inflation rate. The operating margin increased by 9.26% with the projected inflation rate of 5.47% added.

This SIP was implemented and evaluated in just over a year and included the efforts of multiple RHOP staff members dedicated to improving the quality of care. Overall this SIP is considered to be successful with six of the seven objectives being met. The last objective demonstrated an increase in operating income but not enough to exceed the predicted operational margin to count the objective as being met.

The innovations for this SIP was the FIM[®] team assigned to capture admission FIM[®] ratings on the day of admission and the nursing FIM[®] computerized template. These two innovations were successful at increasing LOS efficiency, decreasing admission FIM[®] ratings, improving patient satisfaction, and increasing reimbursement.

References

- Bayley, M. T., Hurdowar, A., Richards, C. L., Korner-Bitensky, N., Wood-Dauphinee, S., Eng, J. J., . . . Graham, I. D. (2012). Barriers to implementation of stroke rehabilitation evidence: Findings from a multi-site pilot project. *Disability and Rehabilitation*, *34*(19), 1633-1638.
- Berlowitz, D. R., Heoing, H., Cowper, D. C., Duncan, P. W., & Vogel, B. W. (2008). Impact of comorbidities on stroke rehabilitation outcomes: Does the method matter? *Archives of Physical Medicine and Rehabilitation*, *89* (October 2008), 1903-1906.
- Bottemiller, K. L., Bieber, P. L., & Basford, J. R. (2006). FIM score, LOS efficiency, and discharge disposition following inpatient stroke rehabilitation. *Rehabilitation Nursing*, *31*(1), 22-25.
- Centers for Medicare and Medicaid (CMS). (2009, August). Medicare program; Inpatient rehabilitation facility prospective system for federal fiscal year 2010, 74 C.F.R. Retrieved from <http://www.gpo.gov/fdsys/pkg/FR-2009-08-07/pdf/E9-18616.pdf>
- Centers for Medicare and Medicaid (CMS). (2012). Inpatient rehabilitation facility patient assessment instrument – IRF-PAI training manual. Retrieved from <http://www.cms.gov/Medicare/Medicaid-Fee-forServicePayment/InpatientRehab/Fac/PPS/Downloads/IRFPAI-manual-2012.pdf>
- Chan, L., Sandel, M. E., Jette, A. M., Appleman, J., Brandt, D. E., Cheng, P., . . . Rasch, E. K. (2013). Does postacute care site matter? A longitudinal study assessing functional recovery after a stroke. *Archives of Physical Medicine and Rehabilitation*, *94*, 622-629.
- Chummney, D., Nollinger, K., Shesko, K., Skop, K., Spencer, M., & Newton, R. A. (2010). Ability of functional independence measure to accurately predict functional outcome of

- stroke-specific population: A systematic review. *Journal of Rehabilitation Research and Development*, 47, 17-30.
- Cournan, M. (2011). Use of the functional independence measure for outcomes measurement in acute inpatient rehabilitation. *Rehabilitation Nursing*, 36(3), 111-117.
- Dempsey, J. (2009). Nurses values, attitudes and behaviour related to fall prevention. *Journal of Clinical Nursing*, 18, 838-848.
- Dillon, K. A., Barga, K. N., & Goodin, H. J. (2012). Use of the logic model framework to develop and implement a preceptor recognition program. *Journal for Nurses in Staff Development*, 28(1), 36-41.
- Dobkin, B. H. (2005). Rehabilitation after stroke. *The New England Journal of Medicine*, 352(16), 1677-1684.
- Durkin, E. M., Deutsch, A., & Heinemann, A. W. (2010). Inpatient rehabilitation facilities, variation in organizational practice in response to prospective payment. *Medical Care Review*, 67(2), 149-172.
- Gage, B., Smith, L., Coots, L., Macek, J., III., Manning, J., & Reilly, K. (2009). Analysis of the classification criteria for inpatient rehabilitation facilities (IRFs) draft report to Congress (Vol. CMS Contract No. HHSM-500-2009-0002G., pp. 1-49).
- Gialanella, B., Santoro, R., & Ferlucci, C. (2012). Predicting outcome after stroke: The role of basic activities of daily living. *European Journal of Physical and Rehabilitation Medicine*, 48(2012) 1-9.

- Glenny, C., & Stolee, P. (2009). Comparing the functional independence measure and the interRAI/MDS for use in the functional assessment of older adults: A review of the literature. *Bio Medical Central*, 9(52), 1-12.
- Glenny, C., Stolee, P., Husted, J., Thompson, M., & Berg, K. (2010). Comparison of the responsiveness of the FIM[®] and the interRAI post acute care assessment instrument in rehabilitation of older adults. *Archives of Physical Medicine and Rehabilitation*, 91(July 2010), 1038-1042.
- Kohler, F., Redmond, H., Dickson, H., Connolly, C., & Estell, J. (2010). Interrater reliability of functional status scores for patients transferred from one rehabilitation setting to another. *Archives of Physical Medicine and Rehabilitation*, 91, 1031-1037.
- Lane, A. J., & Martin, M. T. (2005). Logic model use for breast health in rural communities. *Oncology Nursing Forum*, 32(1), 105-111. McLaughlin & Jordan (1999).
- MacPhee, M. (2009). Developing a practice-academic partnership logic model. *Nursing Outlook*, 57, 43-48.
- Mallinson, T. R., Manheim, L. M., DeMark, H., BA., & Heinemann, A. W. (2008). Trends in the supply of inpatient rehabilitation facilities services: 1996 to 2004. *Archives of Physical Medicine and Rehabilitation*, 89(November 2008), 2066-2079.
- McClusky, A., Vratsistas-Curto, A., & Schurr, K. (2013). Barriers and enablers to implementing multiple stroke guideline recommendations: A qualitative study. *Bio Medical Central*, 13(323) 1-13.
- McDavid, J. C., Huse, I., & Hawthorn, L. R. L. (2013). *Program Evaluation and Performance Measurement An Introduction to Practice*. Thousand Oaks: Sage.

- McLaughlin, J. A., & Jordan, G. B. (1999). Logic models: A tool for telling your program's performance story. *Evaluation Program Plann*, 22, 68-73.
- Mitchell, G. J. (2013). Implications of holding ideas of evidence-based practice in nursing. *Nursing Science Quarterly*, 26(2), 143-151.
- Moreland, J. D., Depaul, V. G., Dehueck, A. L., Pagliuso, S. A., Yip, D. W., Pollock, B. J., & Wilkins, S. (2009). Needs assessment of individuals with stroke after discharge from hospital stratified by acute functional independence measure score. *Disability and Rehabilitation*, 31(6), 2185-2195.
- Mosby's Level of Evidence. Adapted from Melnyk BM. (2004). A focus on adult acute and critical care. Modified from Guyatt & Rennie (2002), Harris et al. (2001). *Worldviews Evidence Based Nursing*, 1(3), 194-197.
- Murphy, P. J., & Miles, T. P. (2007). From the hospital to the nursing home: The 75% rule and the transfer process. *The Journal of the Kentucky Medical Association*, 105(9), 439-444.
- Nilsson, A. L., & Tennant, A. (2011). Past and present issues in RASCH analysis: The functional independence measure (FIM[®]) revisited. *Journal of Rehabilitation Medicine*, 43, 884-891.
- Nieswiadomy, R. M. (2008). *Foundations of Nursing Research* (Fifth Edition): Pearson Education, Inc.
- O'Brien, S. R. (2010). Trends in inpatient rehabilitation stroke outcomes before and after advent of the prospective payment system: A systematic review. *Journal of Neurological Physical Therapy*, 34(1), 17-24.

- Ottenbacher, K. J., & Graham, J. E. (2007). The state-of-the-science: Access to postacute care rehabilitation services, a review. *Archives of Physical Medicine and Rehabilitation*, 88(November 2007), 1513-1521.
- Ottenbacher, K. J., Smith, P. M., Illig, S. B., Linn, R. T., Ostir, G. V., & Granger, C. V. (2004). Trends in length of stay, living setting, functional outcome, and mortality following medical rehabilitation. *Journal of American Medical Association*, 292(14), 1687-1695.
- Pezzin, L. E., Roberts, B. A., Miao, H., & Dillingham, T. R. (2011). Regulatory policies, the "75% rule," and post-acute care discharge. *American Journal of Physical Medicine & Rehabilitation*, 90(11), 954-959.
- Pollak, N., Rheault, W., & Stoecker, J. L. (1996). Reliability and validity of the FIM[®] for persons aged 80 years and above from a multilevel continuing care retirement community. *Archives of Physical Medicine and Rehabilitation*, 77(October 1996), 1056-1061.
- Rogers, E. M. (2003). *Diffusion of Innovations*, (Fifth Edition). New York, NY: Free Press.
- Rosen, J., Mittal, V., Degenholtz, H., Castle, N., Muslant, B. H., Hulland, S., . . . Rubin, F. (2006). Ability, incentives, and management of feedback: Organizational change to reduce pressure ulcers in a nursing home. *Journal of American Medical Director Association*, 7(March 2006), 141-146.
- Taylor-Powell, E., & Henert, E. (2008). Developing a logic model: Teaching and training guide. Retrieved from <http://www.uwex.edu/ces>
- Taylor-Powell, E., Steele, S., & Douglass, M. (1996). Planning a program evaluation. Retrieved online 10/2/2013. <http://www.uwex.edu/ces/pdande>

- Titler, M. G., Kleiber, C., Steelman, V. J., Rakel, B. A., Budreau, G., Everett, L. Q., . . . Goode, C. J. (2001). The Iowa model of evidence-based practice to promote quality care. *Critical Care Nursing Clinics of North America*, 13(4), 497-509.
- Turner-Stokes, L., Sutch, S., Dredge, R., & Eagar, K. (2011). International casemix and funding models: Lesons for rehabilitation. *Clinical Rehabilitation*, 26(3), 195-208.
- UDS-PRO (2010). Uniform data system for medical rehabilitation. Retrieved from [http://www.UDSMR[®].org/Documents/Pro/UDS-PRO_Doc_System.pdf](http://www.UDSMR.org/Documents/Pro/UDS-PRO_Doc_System.pdf)
- U.S. Census Bureau. (2012). Hawaii quick facts from the U.S. census bureau. Retrieved online 9/2/13. <http://quickfacts.census.gov/qfd/states/15000.html>
- Wang, H., Camicia, M., Terdiman, J., Hung, Y.-Y., & Sandel, E. (2011). Time to inpatient rehabilitation hospital admission and functional outcomes of stroke patients. *Physical Medicine and Rehabilitation*, 3, 296-304.