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# Managing Postoperative Pain for Timely Discharge of Total Hip Replacement Patients

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Managing Postoperative Pain for Timely Discharge of Total Hip Replacement Patients

Elmer de Leon

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## Managing Postoperative Pain for Timely Discharge of Total Hip Replacement Patients

### **Clinical Leadership Theme and Global Aim Statement**

The clinical nurse leadership themes mirrored by addressing pain management goal for the timely hospital discharge of postoperative total hip replacement (THR) patients are Clinical Outcomes Manager and Nursing Leadership. This project also requires three competency area of Clinical Nurse Leader (CNL): 1) Essential 2: Organizational and Systems Leadership, good fiscal stewardship is a condition of quality care, 2) Essential 3: Quality Improvement and Safety, practice guidelines are based on evidence, and 3) Essential 4: Translating and Integrating Scholarship into practice, client-centered practice is intra- and interdisciplinary (American Association of Colleges of Nursing, 2013, p. 13).

At the conclusion of this project, staff education will be enriched by the presentation of evidence-based practices (EBPs) and the 5 P's (Purpose, Patients, Professionals, Process, Patterns) for clinical microsystem. By working on this process, we expect improved pain management for THR patients and enhanced nursing confidence in pain intervention. It is important to work on this project now because the proposed nursing intervention would help achieve timely hospital discharge for THR patients. As a result, this study will greatly contribute to quality care and a cost effective healthcare environment.

### **Statement of The Problem**

Patient discharge from the hospital setting is a coordinated interdisciplinary team effort that requires complete nursing attention. During patient admission, it is important to document the patient's pain history and reconcile the list of pain medications that the patient takes prior to hospitalization. Background information is helpful when postoperative pain relief is not effective. One of the barriers in early hospital discharge of THR patients is the unmet pain goal.

In unit analysis, the primary nurse verifies sets of order for scheduled and as needed (PRN) pain medications once the patient arrives from the recovery room. At times, home medications are not reconciled and, as a result, effective patient pain management is not properly addressed.

Furthermore, there are unit-specific pathways for post-op care for THR pain assessment and neurovascular checks. In problem analysis, nursing tends to rely heavily on this protocol, which can result in inadequate pain assessment of post-op THR patients. Why would this become a bigger problem when severity of pain is felt? One of the nursing interventions is to offer patient PRN nonsteroidal anti-inflammatory drugs (NSAIDs) for the onset of minor pain. Therefore, the purpose of this study is to develop a nursing intervention that would result in enhanced comfort for THR patients so timely hospital discharge (i.e., within 2 days) can be achieved.

### **Project Overview**

A number of performance measures are used within a health care organization to determine fiscal solvency. The most basic measures includes cost per unit of service, but, such measures are often inadequate in assessing performance because of the variety of programs and clinical/surgical services offered in single institutions. Obtaining data on reimbursement rate is seen as one way of determining average cost per service by category or type. All health care institutions have limited available resources and are required to participate in quality assurance and improvement actions to remain certified. This project has two goals: The first is to aim for 90% pain met in pain management of postoperative THR patients. The second is for a timely hospital discharge for this group of patients, defined as 2 days length of stay (LOS). Thus, the global aim is for quality, cost-effective patient health care.

### **Rationale**

The initial stage began with the CNL analyzing the microsystem of the Orthopedic

Medical Surgical Unit and assessing its staff. Data were generated from 30 discharged THR patients that included phone call follow-up and chart documentation audits during inpatient stay. Between the months of October 2015 and December 2015, a total of five THR patients had extended hospital stays.

One of the barriers identified in their postponed discharge was unmet pain goal. There were 11 THR patients in this period who showed inadequate pain management. One of the post-op THR patients who was not discharged had accumulated 5 days of LOS. Medicare patients in this circumstance will be a challenge for hospital reimbursement, unless a new disease diagnosis developed alongside THR.

Other concerns that came out in the unit analysis during this period included the high number of regular nurses who got sick. As a result, they were relieved by nurses in the float pool as well as nurse travelers.

Typically, over 60% of the total hip and knee replacement patients have Medicare as their primary payer. Medicare will only pay for 3 days of hospital stay based on the national average length of stay (ALOS) for THR and total knee replacement surgeries. ALOS is particularly relevant because Medicare used this data 2 years prior to determine the geometric mean LOS (GMLOS). Because the GMLOS is determined using actual ALOS data, it has followed the ALOS trend downward. As the GMLOS decreases, the hospital must continue to improve their process and continuum of care to adapt to a consistently decreasing LOS for total hip and knee replacement patients. The GMLOS in FY 2014 was 3.1 days and \$11,479 is allocated reimbursement during a patient's hospital stay, which is not deemed for transfer patients (i.e., not discharged to a skilled nursing facility, inpatient rehabilitation, or home healthcare within 48 hours of discharge). Moreover, this reimbursement is broken down during inpatient

hospitalization: the first day is \$7,406, the second day is \$3,703, and the third day is \$370. Based on the average bed day costs of \$500-\$700 per day, most hospitals would incur a financial loss on the third day (Accelerohealth, 2015). Consequently, because of this change and progressive post-surgery treatment regimens, many hospitals are now beginning to migrate to a 2 days or less LOS for total hip and knee replacement patients.

Addressing pain management with good nursing interventions translates to patient satisfaction and positive scores on the Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS). This survey asked recently discharged patients about aspects of their hospital experience. Pain management or measures were included in this set of questions: for example, one question asked how well hospital staff help patients manage pain. The institution where I have my preceptorship is a center of excellence in orthopedic surgery and undergoes annual recertification. Therefore, scoring well on HCAHPS is good for the hospital's quality improvement, which is one of the measures that The Joint Commission evaluates.

In the light of my project, the required resources will include my time of 250 clinical hours (could equate to a California CNL salary), the input time of other licensed staff (clinical nurse educator [CNE], clinical nurse specialist [CNS], and unit manager) and other minor expenses, such as office materials. Summing up the projected budget, based on a 31 days of CNL work on the unit (CNL \$6,500 + CNE \$5,400 + CNS \$7,000 + unit manager \$8,600 + minor expenses [paper, printing, and copying] \$500), the total estimated cost for this project is \$28,000. Using the previous total expenses in comparison to the five THR patients not discharged (October to December 2015 data), I calculated the average 3 days' extended hospital stay each to cost \$37,500. Patient cost of stay per day in this institution is \$2,500. Using the previous estimates, if there is a 50% increase-10 patients-who are timely discharged per year,

then annual savings of \$375,000 would be achieved. As such, if the ideal goal of 100% timely discharge for THR patients is achieved, the hospital stands to save a quarter of a million dollars annually.

One of the primary goals of this project is the patient's addressed comfort after THR surgery through a sound nursing intervention. It is also to empower the patient during bedside education regarding pain management plan of care. I hope to engage staff in an interdisciplinary team effort and for licensed staff to rally behind this project for quality improvement and cost effective health care delivery. At the end of this study, the delivered goals will be beneficial to patients, stakeholders, and the institution. The global aim is improved quality patient care that focuses on pain management within a cost-effective health care environment, while utilizing the CNL role to assess a microsystem's needs and barriers.

To identify the needs and factors leading to the barrier, a root cause analysis (fishbone) was conducted for the project's planning with data derived from the information obtained during the microsystem analysis. The fishbone analysis showed causes leading to inadequate pain management (**please see Appendix A**) and identified barriers to timely discharge. The microsystem assessment considered the 5 Ps. A series of nurse and patient surveys, data from unit assessments and communication assessments were compiled to conduct this root cause analysis to the problem of not meeting the pain goal. According to the data collected, one of the factors is the high dose of narcotic medications that the patient is already taking prior to hospitalization. Other factors include the client's hesitation to call for pain medication and some nurses not administering NSAIDs 24 hours prior to discharge.

The data that shows the need for the project is based on phone follow up and chart documentation audits related to early patient discharges. From October to December, there were

11 patients with unmet pain goals: five of whom were not discharged as scheduled. The hospital's recent HCAHPS score reflect these (**please see Appendix B**).

The stakeholder analysis is that an interdisciplinary collaborative effort is needed in the project's implementation to be carried out with success in this group of patients (**please see Appendix C**). Team effort is required, including participation of certified nurse assistants (CNAs) who also have an important role in patient pain assessment rounding.

Strengths and weaknesses found early on the project, such as staff knowledge, quality improvement, and use of resources, were analyzed. These were important and solutions were addressed so that the project's implementation runs accordingly.

Overall, after conducting the unit analysis and staff assessment, with time as one of the factors to consider, I will keep the project concise with continuous monitoring and evaluation to insure its success.

### **Methodology**

The preceptor site for this project is a large hospital located in the suburban metropolitan area of northern California. This institution is certified excellent in bariatric and orthopedic surgery. The microsystem focus for this project is the Bariatric-Orthopedic Medical Surgical Unit on the sixth floor with a 30-patient bed capacity. In a typical day, the unit will have a mixed group of patients from emergency department admission, post-op recovery unit transfer and telemetry observation. There are registered nurses in 12-hour shifts in addition to physicians and hospitalists. There are also social workers, a case manager, registered dietitians, physical therapists, and other licensed personnel who work mainly during the day time.

So when a postoperative THR patient transfers to the unit, a set of pathways already exists. For example, neurovascular checks for orthopedic extremity surgeries occur every hour for 4



hours, then every 4 hours for 24 hours, then every shift/physician order. In addition, nurses round for skin check (patient repositioning) and safety every 2 hours. My objective is an hourly rounding for THR patients. I will bring on board nurse assistants with registered nurses (RNs) in an odd or even hours scheme of rounding. The hourly check will focus on pain or discomfort assessment and will not substitute for the skin check. One of the actions I took when the project was implemented was to ensure information was passed on to nurses who floated from other units. Observation in bedside reporting will include that THR patients are informed of the hourly pain assessment rounds and will verbalize back to both nurses their understanding. Printed pain management handouts and instructions on the efficacy of PRN NSAIDs will be a part of patient education. Real time hourly checks can be tracked by the initials of both the CNA and primary RN (odd/even) on the patient's communication board (PCB). I will collect the performance measure updates to measure the project's effectiveness (**please see Appendix F**). My predictions will be positive because patient hourly rounding is supplemental and a sound nursing intervention. Hourly rounds also could be implemented by semester's end after the conclusion of the study is handed over to the unit manager. Moreover, to check with my predictions with the expected results, managed pain and smooth hospital discharge should reflect positively in follow-up phone calls (surveys) of THR patients. The data gathered should show the 90 % met pain goal and timely post-2-day LOS discharges.

The Change Theory that will guide my project is Lippitt's phases of change, an adaption of Lewin's, but it puts more emphasis on the role of the change agent. Likewise, this theory proposed that a problem must be recognized so that there is motivation for the changes to occur. The change agent (me) must have the capacity to change, bring about change in others, and be willing to commit resources, time, and energy to accomplish the change. Lippitt also believed in

incremental steps that require a flexible plan to include evaluation of the process, for the change to be integrated, maintained, and adapted as needed. In this change theory, the change agent becomes a team member and not the leader when the change has stabilized (Harris & Roussel, 2010). This approach is appropriate because the microsystem of this project believed in shared governance in which the input of nurses is important in policy-making decisions: suggestion boxes are in place in each hospital unit, for example. Team effort and work cohesion are also present among staff. Most are experienced nurses in the Orthopedic Medical Surgical Unit who work as both floor nurses and charge nurses on occasion. The unit's culture of respect is reflected in the attitude where everyone's voice is heard no matter where they rank in seniority. So when I presented the project (problem recognized), it was warmly welcomed because of my motivation and energy. At present the project is in the maintenance stage, within the incremental steps that Lippitt mentioned in his theory.

### **Literature Review**

(P) Patient/Problem: Orthopedic total hip replacement

(I) Intervention: Pain management

(C) Comparison: Length of stay (LOS) plus adverse events

(O) Outcome: Early discharge

The literature to support the project concept of timely discharge for this group of patients with managed pain is open to specific or general healthcare interventions and outcomes. An inpatient stay can be costly to an institution. In 2010, the average cost for a U.S. hospital stay was \$9,700 and the aggregate cost for all hospital stays totaled \$375.9 billion (Agency for Healthcare Research and Quality, 2013). Moreover, based on a cross-sectional study conducted in three British hospitals, hypothesis strongly supported that short postoperative hospital stays

can be achieved without any detriment to the patient's experience. In conjunction with these researchers' presentation of previous evidence that showed no detriment to functional recovery or healthcare costs (Salmon et al., 2013). Observations during the initial project presentation noted that the nursing staff needs evidence-based practice (EBP) education on the cost effectiveness of early hospital discharge.

During the course of a patient's hospital stay, quality care can be greatly achieved with interdisciplinary team working together in the microsystem to produce positive patient outcomes and improving daily meetings may reduce the LOS in hospital for THR patients (Pape, Thiessen, Jakobsen, & Hansen, 2013). For example, communication between the primary nurse and physical therapist regarding pain management for early mobilization of patients reduces LOS in hospital. Getting patients walking or sitting out of bed early within a day of THR or knee replacement surgery reduces LOS and may improve clinical outcomes without increasing the rate of adverse events (Guerra, Singh, & Taylor, 2015).

The literature also describes many effective interventions in minimizing post-op pain that transition patients from intravenous (IV) opioids to NSAID medications. Geriatrics patients require special considerations regarding narcotic medications to severe side effects that will hinder their early hospital discharge. If not contraindicated, the study shows the efficacy of IV acetaminophen every 6 hours for the treatment of patients with moderate-to-severe pain after major orthopedic joint replacement surgery (Sinatra et al., 2012).

Most importantly, a multidisciplinary enhanced recovery program study is relevant to my project. The work by Dawson et al. (2014) presented data from an orthopedic ward that represented 3-to-5 years of results of 100 sequential patients undergoing total hip replacement with a mean LOS of 1.99 nights. They found their hypothesis strongly supported post-op

patient's discharge is doable within two days (p. 170).

Of equal importance for the project is the clear documentation by nursing staff to determine cost effectiveness of nursing intervention in patients with post operative complications. This is equally important for hospital reimbursement, for example, if there is a secondary disease diagnosis while the patient is recuperating from surgery. So, employing study methods and findings, nurse managers can compare the cost-effectiveness of current nursing interventions with previous (Lee, Moorhead, & Clancy, 2014).

### **Timeline**

The project began mid-January 2016 and will conclude in mid-May of 2016 (**please see Appendix G for Gantt Chart**). One of the challenges with this timeline is it will be conducted with just enough time to effect its conclusion. Another challenge is ensuring the study information is passed on to nurse travelers assigned to the unit.

From January to February, I conducted unit analysis between bariatrics and orthopedics to choose which group of patients would fit in the time on hand and needs assessment for global aim statement.

In February, I met some of the stakeholders discussing the project's idea in orthopedics and the unit manager gave her support for the proposed study. In the middle of the month, I attended a huddle with staff where I presented EBP in pain management. Toward the end of February, I conducted staff and patient surveys. I later met with a pain committee member for an impromptu interview.

During the rest of the semester, I will continue EBP conversations with nurses and to utilize data to track the project's progress. In the present schedule, I will be attending meetings with the hospital's pain committee. In other agenda, dissemination of EBP education

and handouts will be extended to float nurses and regular staff who missed huddles. The conclusion of this project will be in May 2016.

### **Expected Results**

The outcomes will be patient satisfaction and on-time hospital discharge. The project will also highlight the importance of nursing intervention. Nurses spend the most time with patients and are therefore, in a unique position to assess and manage pain. Nurses are responsible for communicating with patients to meet their needs and provide appropriate care based on in-depth assessments. Meeting patient needs during pain assessment and medication management involves encouraging patients to express their needs and allowing them to take a more active role in their care. Although, educational programs are a potential method of improving nurses' knowledge of pain management, they also provide an opportunity to address negative beliefs and attitudes.

In conclusion, comfort theory, which was developed in the 1990's by Katharine Kolcaba, emerged in this study. It addresses human and institutional needs. Its framework is applicable to this area of nursing because patient comfort is cited as a goal in its standards of care and is an established value for many nurses (Kolcaba, Tilton, & Drouin, 2006). It states that enhanced comfort strengthens patients to consciously or subconsciously engage in behaviors that move them toward a state of well-being. These behaviors are called health-seeking behaviors and provide rationale for implementing comfort interventions. As such, its premise involves the process of comforting actions performed by a nurse for a patient. According to comfort theory, patients experience comfort needs in stressful health care situations. In instances when patients and their families meet some needs but other needs remain unmet, a nurse can identify, who then implements comfort measures to meet these needs. Enhanced comfort readies the patient for

subsequent healthy behaviors. As a result, comforting measures can provide pain relief, help ease distress or support the patient to go through the experience or condition.

### **Nursing Relevance**

Despite advances in technology and medication, unrelieved postoperative pain continues to be problematic for surgical patients. Statistics show that 43 million patients in the United States experience acute postoperative pain, with pain intensities of moderate to severe reported by 80% of these patients; 50% of postoperative patients report unrelieved pain (Centers for Disease Control and Prevention [CDC], 2013). The management of postoperative pain relieves suffering and leads to earlier mobilization, shortened hospital stays, increased patient satisfaction, and reduced hospital costs. Inadequate pain relief can contribute to postoperative complications such as delayed wound healing, atelectasis, and deep vein thrombosis (Francis & Fitzpatrick, 2013). Nurses who care for surgical patients in inpatient settings must recognize the need for adequate pain management and look at the latest data and EBP in how to best manage postoperative pain (D'Arcy, 2011).

### **Summary Report**

My project's goal is to utilize pain management rounds to help decrease LOS in the Orthopedic Medical Surgical Unit. The study is specific to postoperative THR patients and proposed hourly rounds that will be complimenting other rounding assessment (**please see Appendix D**). The data utilized came from patient electronic health records (EHR) audits, follow up phone calls after hospital discharge, and nurse surveys (**please see Appendix H**). I have selected run charts to trend data of previous months in comparison with internal benchmarks (**please see Appendix I**). The baseline metric for this study is 3 days LOS for THR. Hospital discharge aim of this study is post-op two days and pain goal met at 90 percent. One of the

barriers that was identified in postponed hospital discharge was pain goal unmet. Baseline data obtained from the months of October 2015 and December 2015, showed a total of five THR patients had extended hospital stays. There were 11 THR patients in this period came out with inadequate pain goal unmet. One of the post-op THR patients who was not discharged had accumulated 5 days of LOS. Thus, a need for this study.

To conclude, my project involves hourly rounds to help prevent undue inpatient LOS. Patient's pain goal unmet is one of the barriers to a timely hospital discharge (**please see Appendix E**). Therefore, the global aim of this study is quality patient care and cost-effective health care management. Although rounds for post-op THR patients is already an existing plan of care, I believe that hourly patient rounds is a sound nursing intervention as shown in PDSA (Plan, Do, Study, Act) cycle and EBP literatures that validate this pathway in quality patient care (**please see Appendix J**). SDSA (Standardize, Do, Study, Act), defined to be standardization can be utilized after this project had gone through PDSA. My project has more than one of the elements of sustainability: “transparency, increase trust, a measure of success for dissemination of innovation information, audience interest in approving, implementing, and sustaining the innovation, audience interest is increase if there is data to show a performance gap, and sense of urgency” (N651 Module 11 PPT slides, 2016).

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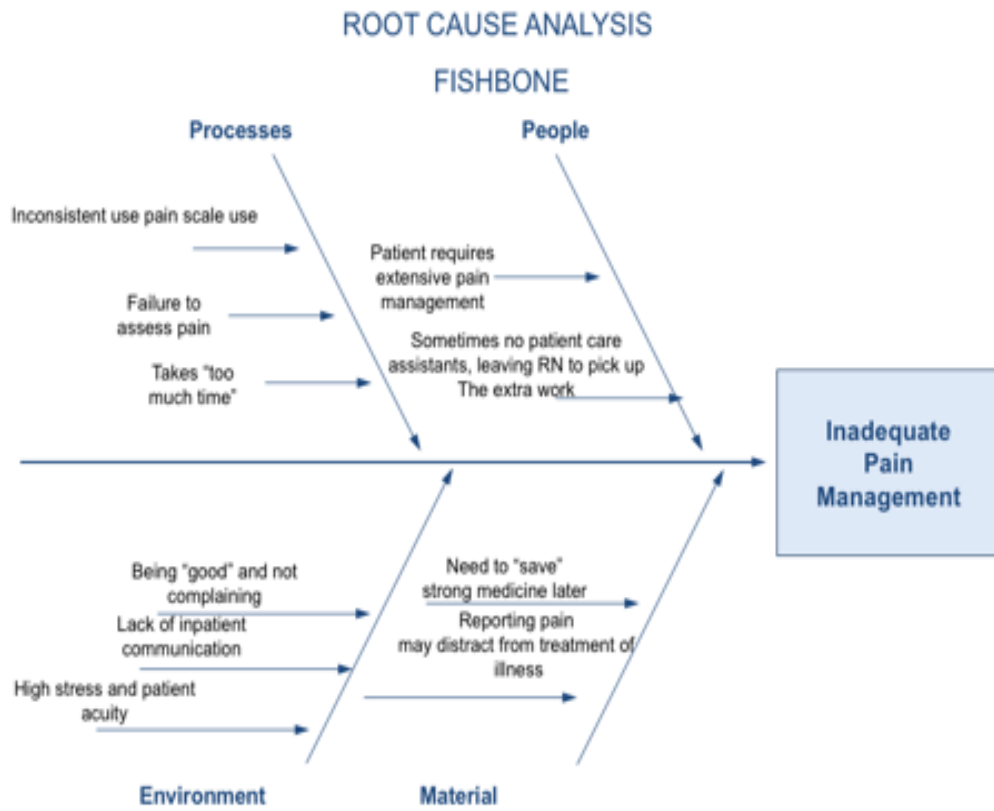
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Appendix A



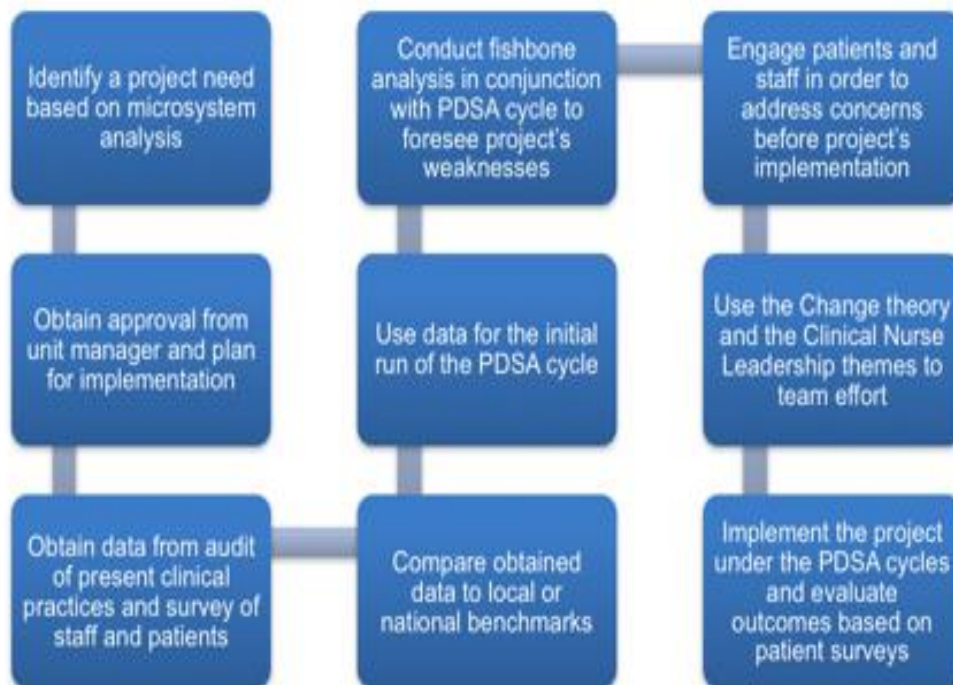
## Appendix B

## HCAHPS Scoring

	July	Aug	Sept	Oct	Nov	Dec	Jan	Feb
<b>LISTENING AND RESPONDING</b>	Closed	Closed	Closed	12/18 Closed	Closed 1/19	Closed 2/19/16	Closed 3/18/16	
<b>GOAL</b>	<b>84.94</b>	<b>84.94</b>	<b>84.94</b>	<b>84.94</b>	<b>84.94</b>	<b>84.94</b>	<b>84.94</b>	<b>84.94</b>
ED Avatar avg 79.75	77.33	81	73.78	69.29	79.73	63.46	72.56	
Inpatient Avatar Avg. 87.95	88.79	88.44	89.69	89.27	88.45	85.82	89.3	
Outpatient avatar average 92.54	93.75	90	90	90	97.73	82.35	100	
<b>Avg</b>	<b>86.62</b>	<b>86.48</b>	<b>84.49</b>	<b>82.85</b>	<b>88.64</b>	<b>77.21</b>	<b>87.29</b>	<b>0.00</b>
<b>HCAHPS</b>	Closed	Closed	Closed	14-Dec	19-Jan	19-Feb	18-Mar	
<b>GOAL</b>	<b>28</b>	<b>28</b>	<b>28</b>	<b>28</b>	<b>28</b>	<b>28</b>	<b>28.00</b>	
# Respondents	56	83	99	198	203	220	221	
<b>Total Points</b>	<b>39</b>	<b>49</b>	<b>58</b>	<b>22</b>	<b>13</b>	<b>15</b>	<b>16</b>	
<b>COMPOSITES</b>	Closed	closed	Closed	12/18 closed	Nov closed 1/19	19-Feb	18-Mar	
Medication Communication	7	10	0	3	0	1	1	
Clean & Quiet	0	1	3	0	0	0	0	
Doctor Communication	3	5	0	0	0	0	0	
Nurse Communication	3	2	3	1	0	0	1	
Discharge Information	6	6	10	8	2	5	6	
Overall	0	3	2	1	0	0	0	
Pain Management	4	0	10	1	0	1	1	
Responsiveness	7	4	0	0	4	1	1	
Consistency Points	9	15	18	8	7	9	6	
<b>Points</b>	<b>39</b>	<b>46</b>	<b>46</b>	<b>22</b>	<b>13</b>	<b>17</b>	<b>16</b>	<b>0</b>

## Appendix C

## Stakeholder Analysis

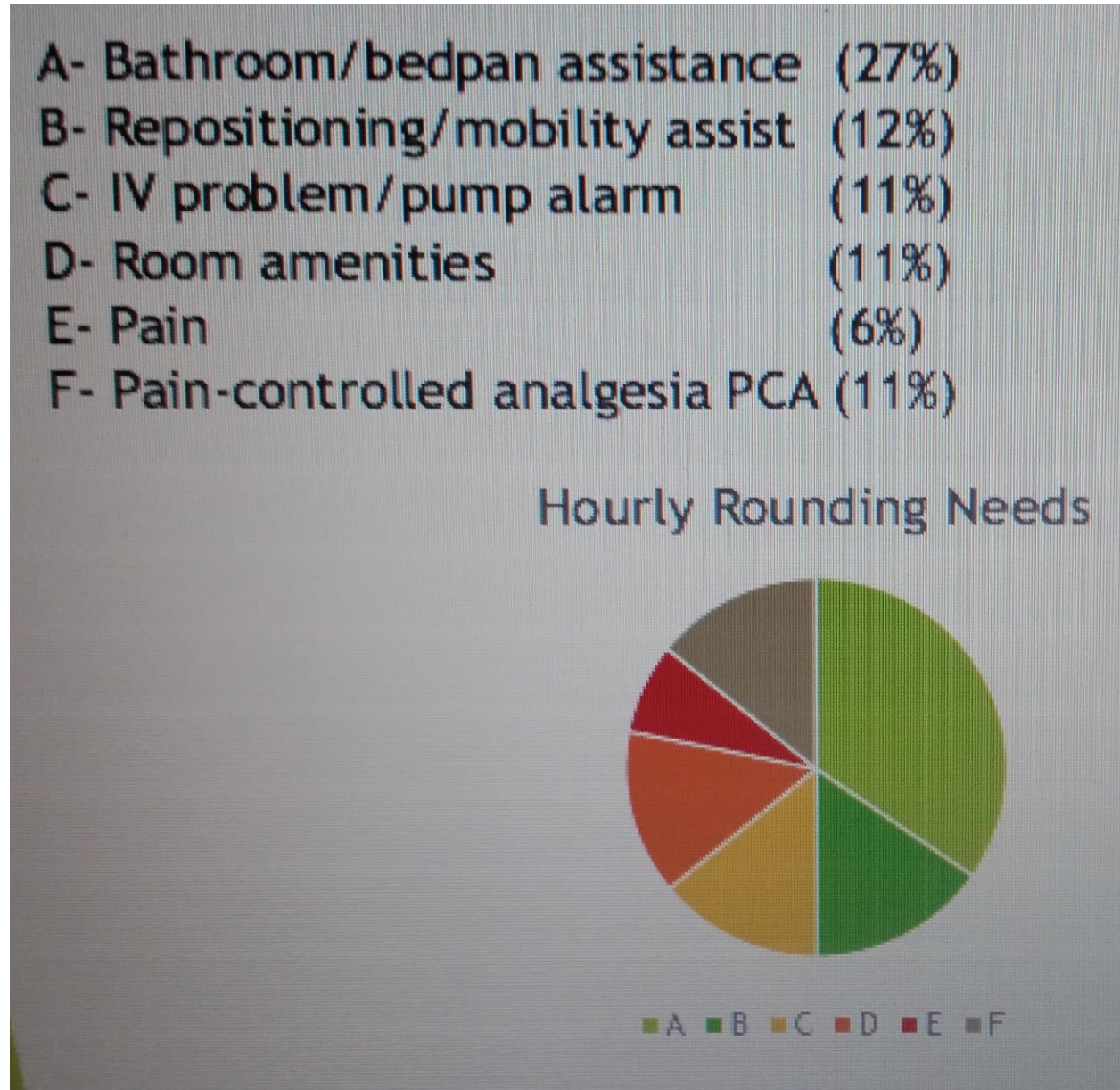




## Appendix D

## Patient Needs Encountered During Hourly Rounds

Pain and PCA Numbers Have a Correlation



Appendix E

Barriers To Patient’s Timely Hospital Discharge Survey

<b>Care Provider (DMG, PAMF, Others)</b>			
<b>Date:</b>		<b>Unit:</b>	
<b>Name of Person Completing Form:</b>	AM	PM	Night
<b>Patient Name:</b>		<b>Patient Account #:</b>	
<b>Physician:</b>	✓ or B	<b>Comments (Required for all barriers)</b>	
Inpatient or OBS Status			
<b>Nursing:</b>			
Consults Completed			
Lines and Tubes			
IV to PO status tolerated			
Diagnostics Completed			
Procedures Completed			
Mobility Goals Met			
Vitals Stable			
Alert and Oriented			
WDL			
Discharge Diet Ordered			
Wound Care Orders in Place			
Restraints and/or Sitters Off			
Patient and family notified of discharge plan			
<b>Pharmacy:</b>			
Medication Issues: IV to PO			
Discharge Medication Orders Complete			
<b>Therapy PT/ OT/ ST:</b>			
Evaluation Completed			
<b>Respiratory Care:</b>			
Discharge Treatment Plan in Place			
Home Oxygen Set Up			
<b>Patient &amp; Care Giver Education:</b>			
Therapies (PT/ OT/ ST)			
Nursing			
Dietary			
Wound Care			
Pharmacy			
<b>Other:</b>			



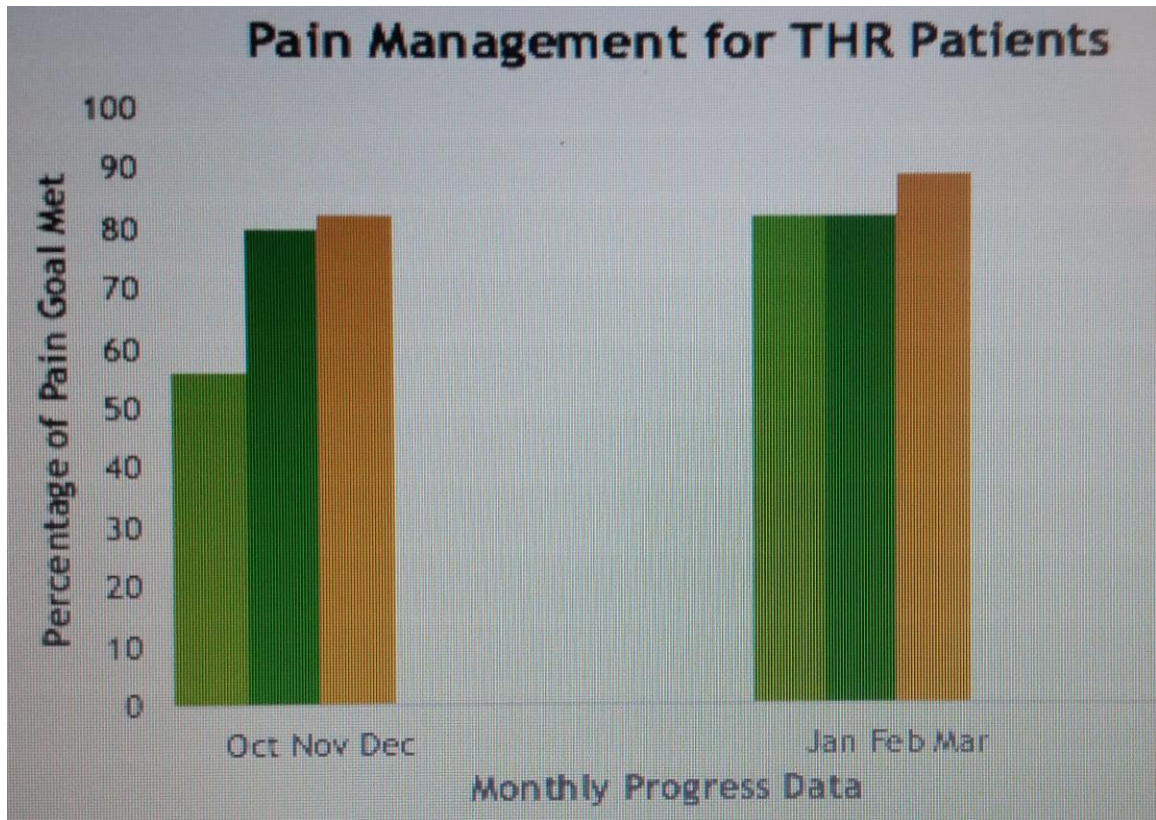
Appendix F

Performance Measurement Data

Patient Satisfaction- Avatar survey questions for review and follow up. 1. "How often was your pain well controlled? 2. "How often did nurses explain things in a way you could understand? Hand out "Did doctors, nurses or other hospital staff talk with you about whether you would have the help you needed when you left the hospital?	February:	
	Knee	Hip
	Pain 80%	Pain 80%
	Neuro checks 60%	Neuro Checks: 40%
	D/C home: 90%	D/C home: 60%
	Ortho Class:	Ortho Class:

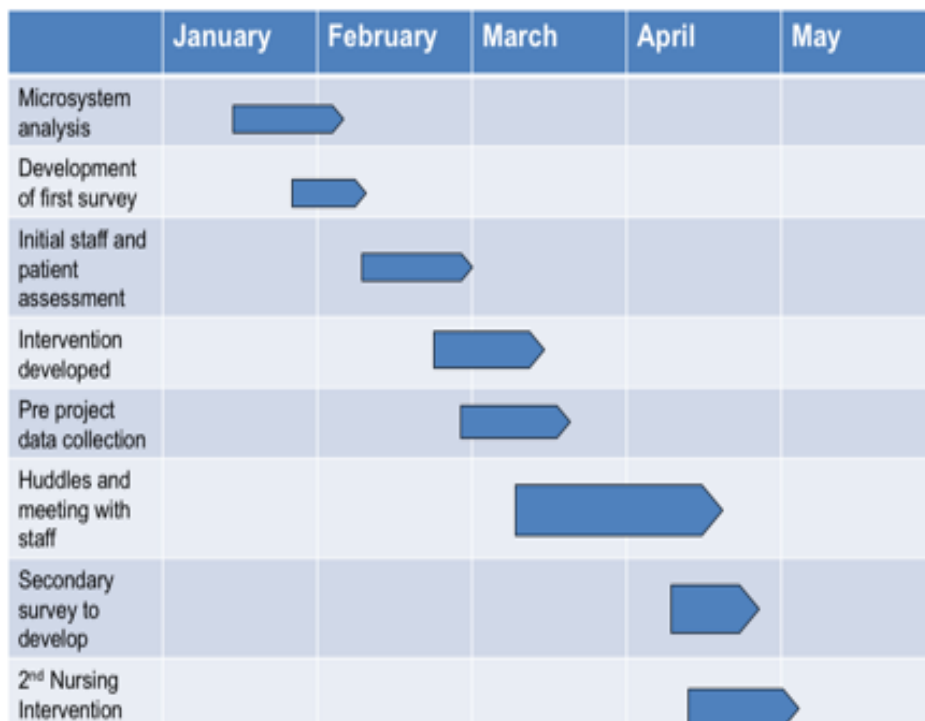
Intelligent Surveys: Total Joint Replacement Patients Only						
2016	Oct	Nov	Dec	Jan	Total	
Communication with Doctors	68.10	15 78.45	11 93.33	15 100.00	2 81.27	43
Communication with Nurses	65.71	15 78.18	11 77.78	15 100.00	2 74.71	43
Pain Management	56.07	15 93.45	11 82.14	14 100.00	2 77.38	42
<b>Total</b>	<b>64.35</b>	<b>15 82.60</b>	<b>11 84.70</b>	<b>15 100.00</b>	<b>2 77.84</b>	<b>43</b>





Appendix G

GANTT CHART



## Appendix H

## Nurses Knowledge and Attitudes Survey Regarding Pain

Please Circle the correct answer

1. Vital signs are always reliable indicators of the intensity of a patient's pain.

**True**

**False**

2. Because their nervous system is underdeveloped, children under two years of age have decreased pain sensitivity and limited memory of painful experiences.

**True**

**False**

3. Patients who can be distracted from pain usually do not have severe pain.

**True**

**False**

4. Patients may sleep in spite of severe pain.

**True**

**False**

5. Aspirin and other non-steroidal anti-inflammatory agents are NOT effective analgesics for painful bone metastases.

**True**

**False**

6. Respiratory depression rarely occurs in patients who have been receiving stable doses of opioids over a period of months.

**True**

**False**

7. Combining analgesics that work by different mechanisms (e.g., combining an NSAID with an opioid) may result in better pain control with fewer side effects than using a single analgesic agent.

**True**

**False**

8. The usual duration of analgesia of 1-2 mg morphine IV is 4-5 hours.

**True**

**False**

9. Research shows that promethazine (Phenergan) and hydroxyzine (Vistaril) are reliable potentiators of opioid analgesics.

**True**

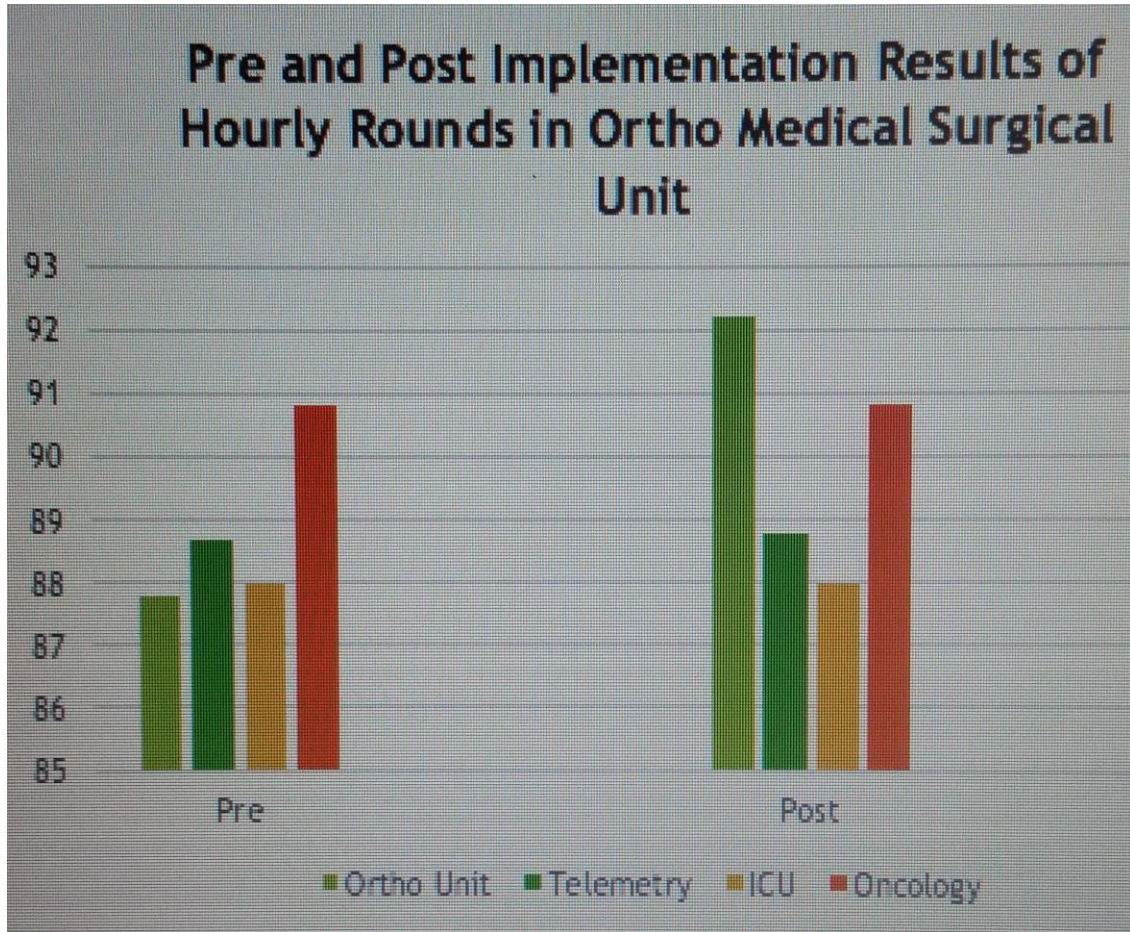
**False**

10. Opioids should not be used in patients with a history of substance abuse.

**True**

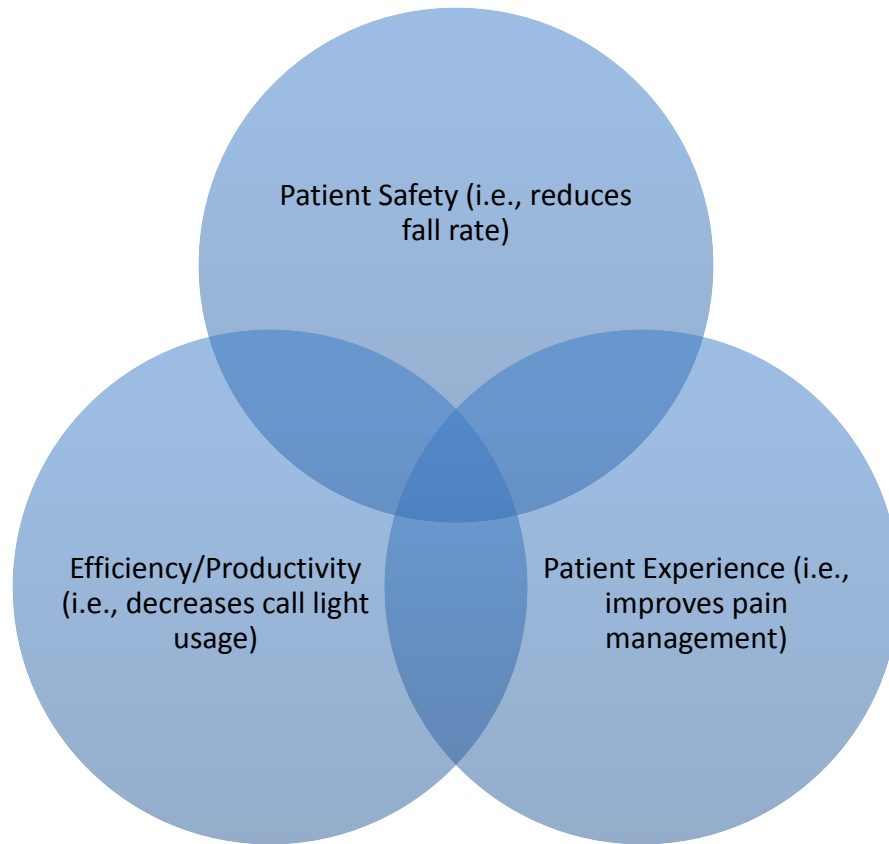
**False**

## Appendix I



Appendix J

Hourly Rounding Key Outcomes



Source: Nursing Executive Center interviews and analysis.