

A Program Proposal to  
Improve the Intra-Hospital Transportation Service at  
Mercy Hospitals of Bakersfield

By

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## **Executive Summary**

Mercy Hospitals of Bakersfield has a problem; long wait times for patients being transported within the hospital. There are many risks associated with intra-hospital transportation including physiologic changes, equipment changes and staffing changes. Long turn-around times can make this problem even worse. This may cause a life-threatening issue or negatively affect the patients' perception of the hospital.

To solve the problem it is proposed that Mercy utilize Transformational Care tools and principles, i.e. Lean. Using this suggestion, the researcher has identified many issues as to why Mercy Hospital's intra-hospital transportation system has an average turn-around time of 33 minutes. They are; patient is eating or showering, transport waiting for nursing to finish tasks such as the handoff sheet, no nurse to help transport, nurse is busy with other patients, wrong equipment ordered and others.

Through analysis it is recommended that Mercy implement a more streamlined process, in which specific guidelines are set in order to decrease turn-around times to the benchmark of 22 minutes. Some of these guidelines include; not requesting transport until patient is ready to be transported, transportation waiting for only five minutes for nursing, utilize the Plan Do Study Act (PDSA) model for sustainment and finally train all staff how to utilize the Transport Tracking system to keep track of all jobs placed in the queue which will help with accountability.

## CHAPTER 1

### INTRODUCTION

#### *Background of the Problem*

Every hospital needs an efficient intra-hospital transportation system to avoid potential life-threatening events. The reason being is that when patients are transported away from their nurse or clinical overseer, and taken by a non-clinical transporter, it creates a situation that is may possibly be life-threatening. It is a time in which anything could happen to the patient. Bion and Shirley (2004) state, “there are many potential risks associated with transporting ...patient[s], including the physiological changes associated with the change in environment, changes in equipment such as ventilators and pumps...the absence of backup supplies and staff” (p. 1508). This variability in the transport of patients is not only a safety issue but a possible process breakdown issue. Process breakdown within the intra-hospital transportation system increases wait times for patients, which may have a negative effect on patient satisfaction.

Johns Hopkins Hospital in Baltimore, Maryland, has created a Lifeline Transportation Program that coordinates any type of transportation necessary. “In an effort to expedite and streamline patient flow into and throughout the Johns Hopkins Medical System, an integrated delivery system was developed to meet the demands for all types of transportation” (Johns Hopkins Lifeline, 2011). Included in the Lifeline Transportation Program is an intra-hospital transportation process that addresses patient safety and satisfaction by providing a “comprehensive and effective intra-facility transport plan” (Johns Hopkins Lifeline, 2011). This program allows the RN to stay on his or her floor to care for other patients. At the same time the program provides the same

continued level of care during the transportation process. It is unclear how successful the Lifeline program is. However, it is important to learn from this example that there is a very clear process at Johns Hopkins Hospital and that an effective intra-hospital transportation process is important to maintain quality healthcare. Mercy Hospitals of Bakersfield can use Johns Hopkins model as an example and create a more efficient intra-hospital transportation system to create a more positive patient experience.

To improve process breakdowns at Mercy Hospitals, Catholic Healthcare West (CHW) introduced to its hospitals, including Mercy Hospitals of Bakersfield (MHB), Transformational Care (TC). Essentially, TC brings MHB the principles and tools it needs to improve the quality of care it provides to their patients. TC helps to ensure financial sustainability, and helps MHB become an employer of choice in Bakersfield, by inviting all employees to be innovative. It is also a way to provide the right care, at the right time and in the right place (Catholic Healthcare West, 2008). TC will help MHB meet the needs of the community by providing affordable, quality healthcare and meeting the challenges presented by the impending health reform; otherwise known as “Obama care”.

Transformational Care aims to cut waste where possible and get rid of non-value added activities. Non-value added activities are steps in the process that don't add value to the patient's hospital experience. When possible and where needed, value added activities are always a part of creating a positive patient experience. There are also steps in a process that may not necessarily add value to the patient experience, but may be incidental. In other words incidental work has to be addressed for specific reasons, such as a regulation or law. TC is able to locate these non-value added steps or problems with

the use of tools such as fishbone diagrams, logic trees, process maps, prioritization matrices, and Gantt charts. These tools, along with others, help to break down a broken process into smaller manageable pieces. Also, using the tools above helps identify the root cause of the problem. Many times anecdotal problems take precedence over the root cause of the problem, therefore the wrong problem is solved, causing wasted resources. Using the tools explained earlier avoids solving the wrong problem.

TC looks to use front-line staff to create a culture of “Lean” thinking. Lean stems from Toyota Manufacturing Production Systems. Toyota created a way to cut waste in the manufacturing process to provide high quality cars and trucks. In essence Toyota empowered employees to become leaner so that changes could be sustained. Until recently due to an ethical failure to address quality mishaps, Toyota has continued with a culture of Lean thinking and the result has been high quality, with some of the best selling cars and trucks in the world. This culture will be needed for MHB in the coming years with the looming healthcare law that was enacted in March of 2010. The new law will force hospitals and other healthcare facilities to provide higher quality of care by using fewer resources. If facilities are not able to face the challenge there is a possibility they would lose a considerable amount of money due to inefficiencies and permanently close their doors.

Less than five years ago Mercy’s Chief Operating Officer (COO), now gone from the organization, implemented a transportation system that was outsourced by a private company, but with front-line staff employed by the hospital. This new philosophy and process did not take well. The proof is from the data that show long wait times for patients. There has yet to be an effective inter-hospital transportation system since the

privatization of the transport management team. To be effective in this case would mean to meet the average turn-around time goal of 22 minutes, set by the Director of Environmental Services & Transportation at Mercy Hospitals. This turn-around time is the time it takes to get from point A to point B. The turn-around time is important to measure because longer times can increase patients' chances for a life-threatening event to occur.

Through TC, MHB has improved many aspects including its finances, operations and quality initiatives. For example, emergency department length of stay for admitted patients has decreased by more than an hour, discharged patients length of stay decreased by a half hour, and co-pay collections at point of service in the emergency department increased from an average of \$1,993 to \$15,000 a month (Andersen, 2010). The success in these areas has proved that TC works when implemented and followed step by step, just like a cook book. Improving these aspects of MHB has helped them reach their goal of providing the best care for its patients.

#### *Statement of the Problem*

Transporting patients from point A to point B – vehicle to bed, room to procedure, even building to building – is an indispensable function in today's hospitals (Cronthall, 2011). In addition patient transporters are extremely important in a patient's overall experience. Mercy Hospitals of Bakersfield has a problem with patients waiting for transport. This waiting time may create patient dissatisfaction because patients are clothed in a gown that has the potential to expose private areas of a patient's body and may not be warm enough to keep patients somewhat comfortable. There is no way for patients to call for help if needed as well. Also, while waiting, patients may be in hall

corridors or areas outside of their room where others may see them; this is uncomfortable for some patients.

Higher waiting times pose another issue at MHB; patients may become dissatisfied because of guarded care patients. Guarded care patients are those that are from the outside prisons and are heavily guarded by correctional officers. This creates anxiety and discomfort seeing correctional officers because of the unknown. The ratio is two guards to one guarded care patient. So at any given time there may be as many as 10 correctional officers located in the main hall corridor, clearly visible to all patients.

Other issues in the transportation process exist because of variability in the process between nursing staff, radiology and transportation. There is no standard work. In other words, each department will perform tasks without considering how it affects the whole process and more importantly, patients. Also, there are unintentional errors that are placed into the transportation call system that waste transportation time. This, in turn, creates non-value added time to the patient.

Improving the intra-hospital transportation service within MHB will decrease average transport turn times and increase patient satisfaction toward transport. For this purpose Transformational Care has been asked to identify the problems of the transport process and create solutions around the problems. The purpose of this project is to create and recommend a new process to Mercy Hospitals of Bakersfield. If this process is not fixed, it will have a negative impact on MHB by patients telling others about their negative experiences at MHB. If patients have bad experiences, patients may choose to go to competing hospitals. This means there will be lost revenue and a loss of Mercy's community reputation for being the "Kern County's Best Hospital" (Mercy Hospitals,

2011). Also, if a new process is not created there may be a possible situation where a fatality may occur while a patient is waiting for transport because they are not under the direct care of a clinician. Finally, by creating a better inter-hospital transport process and decreasing wait times, the overall patient experience may be positive.

#### *Methods and Procedure of Study*

The purpose of this project is to evaluate the problems within MHB's intra-hospital transportation process, identify the solutions, prioritize the solutions based on the 80/20 rule and finally recommend solutions to the problems. The 80/20 rule is based on a principle which is that 80% of an end result comes from 20% of the resources. This principle is used as a standard because capturing the last 20% of improvement takes a great deal of energy and resources which does not return a substantial investment for the amount of work. However, that does not mean that the last 20% of work is not worthwhile.

Baseline data were gathered to look at the effectiveness of the current process. The data was taken from the intra-hospital Transport-Tracking system called Tele-Tracking. Transport-Tracking is a piece of software within a larger piece of software, just like Microsoft Word is a piece of software within Microsoft Office. Every transportation job is placed into this system via phone or computer. The data were gathered over a year long period because this would take into account fluctuations in the hospital census. Hospital census is important to the intra-hospital transportation system because there is a direct correlation with the census and the number of transport requests. The data was collected from both Mercy Truxtun and Mercy Southwest campuses. The names of patients and other personal information were not used for or extracted for this study.

The data gathered were (1) the total number of transport requests, (2) average transport time in minutes, (3) nursing delays in minutes that stem from problems such as nursing not having appropriate paperwork filled out upon transport arrival, (4) no assistance from nursing when patients return to their rooms from exams, that causes a delay in minutes, (5) equipment delays such as a piece of equipment that are frequently not found and (6) total delay time. There are no specific baseline data proving that high wait times for transport will decrease patient satisfaction. For this study the emphasis will be placed on creating a process that will add value to the patient, and hopefully translate into higher patient satisfaction. This baseline data provide a framework as to where the process is broken.

#### *Importance of the Study*

The importance of this study is to get every department affected by transportation to commit to providing the best patient experience when it comes to providing intra-hospital transportation. Unless each department understands how its actions can affect the entire transport process, as well as other departments, there will continue to be high waiting times and a greater possibility of a life-threatening situation.

This project may be of great worth to the Director of Environmental Services & Transportation by providing him with a possible guide as to what the problems may be and how to go about fixing them. This project could also have a large impact on MHB and the experience that is given to the patient. If patients receive quality care and have one bad transport experience, they are likely to tell others about that one bad experience and that experience may skew how patients view Mercy as an entire organization.

TC has shown that if the tools and principles are applied, significant improvements can occur at MHB, such as the ER (Andersen, 2010). With the use of TC tools and principles, TC will hope to create a program that will have the same impact that it had on the ER, one that in the end enhances the patient experience.

## CHAPTER 2

### STATEMENT OF THE PROBLEM

#### *Overview*

Mercy Hospitals of Bakersfield has a problem. The problem is that the intra-hospital transportation systems' turn-around times are too long. This may cause a patient satisfaction and safety problem. The theory behind the problem is based on a serial model in which A causes B, which causes or leads to C (see Figure 1). In this case if Mercy streamlines its intra-hospital transportation process then it may decrease the average turn-around times. This may increase patient satisfaction and safety.

Many departments and people are involved in the transportation process, therefore many variables are created. These variables create several problems including transporters waiting on nursing and patients, the wrong transport equipment is ordered and jobs that are placed into the queue are cancelled without communicating to the transportation staff. Mercy can use its Transformational Care (TC) department to streamline the intra-hospital transportation process. TC is an integrated process improvement program to raise the quality and effectiveness of Mercy cares for its patients (Transformational Care, 2011). Using TC would be in-line with the model that Lynn, et al (2007) refers to as “methods...which were modeled first in manufacturing to make ongoing improvements more systematic, data guided and efficient” (p. 666).

To impact the intra-hospital transportation process the correct stakeholders should be identified first. They are transporters, radiology staff, nurses, clerks, certified nursing assistants (CNA), physicians and the chief operating officer. Each of these entities is impacted by this process so they should be involved in the creation and implementation

of the process. Involving frontline staff would increase the chances of the process being sustained over time.

The overall goal of the program is to decrease the intra-hospital transportation average turn-around times from 33 minutes to 22 minutes and to create a process of accountability. To manage these goals several indicators will be measured including, but not limited to, the total number of transport requests, average transport time in minutes, total nursing delay in minutes and total delay time in minutes. Some of the potential solutions to these problems include staying with the status quo, employing the transporters on a departmental level rather than their own department and finally streamlining the existing process.

#### *Definition of the Problem*

Patients expect “high-quality health care—safe, effective, patient-centered, timely, equitable and efficient” (Lynn et. al., 2007, pg. 666). Mercy has not met this expectation with regards to its intra-hospital transportation system. The problem Mercy has is that its intra-hospital transport turn-around times are too long and this may cause future patient safety and satisfaction issues. The reason this problem is important to solve at Mercy Bakersfield is because of the values it holds. These values are dignity, collaboration, justice, stewardship, and excellence. These values guide the decisions and reasons for improvement at Mercy Hospitals. Mercy’s values are also the reason it tries to give “compassionate, high quality, affordable health services” to those who are “poor and disenfranchised” (Mercy Hospitals Mission Statement, 2011). This model of giving to the poor and disenfranchised is based on the social justice theory in which everyone should be treated equally and fairly. Mercy’s mission statement shows that all members of

society should be treated equal with regards to health services and this includes an efficient intra-hospital transportation process.

Average transport turn-around times can be defined as the time it takes to move a patient from point A to point B. Turn-around times are a problem because they may have serious effects on a patient's life while in the hospital. Hendrich and Lee (2005) state that "intra-hospital [transports] can have a profound detrimental and even life-threatening effect on patients...due to decreased accuracy of monitoring during the transfer process, as well as physiologic changes which can occur during [transport]" (p.157). Transporting patients is always a threat to their lives and for them waiting to return to their clinical provider is even more life threatening because patients are not monitored as well as they would be on a nursing floor. Decreasing patient wait times will aid in increasing patient safety and satisfaction (Beckmann, Gillies, Berenholtz, Wu & Pronovost, 2004). This problem definition is based on serial model theory where A leads to B which leads to C. If MHB streamlines its transport process, wait times for intra-hospital transportation will decrease, thereby increasing patient satisfaction and safety (see Figure 1).

The transportation system is used by many departments at MHB including the emergency department, radiology, nursing floors, intensive care units and the operating room department. The current process has many variables to follow. So many that variations have crept into the current process (see Figure 2). This figure shows the steps in the process and the people involved. Notice how many different paths can be taken. Different paths can lead to variations and these variations lead to different outcomes. One or more of these steps, if missed, has the ability to be detrimental to the process and increase the average transport turn-around time. For example, a physician may ask for an

x-ray scan of a patient who is an inpatient. The physician will write an order for the clerk and the clerk will place that order into Mercy Hospital's electronic medical database. But the timing of when the clerk puts that order into the system is variable on each floor. This is a problem because it causes batching on the radiology side which causes a backlog for them. Once the order is in the system or the queue, the radiology department receives the order. The radiology department then calls for the patient to come to radiology but the variation in this part of the process is that radiology may call the clerk and or nurse which may leave several important people out of the loop. Calling the clerk may not translate into him or her telling the nurse that the patient needs to be ready to leave for radiology when transport arrives.

After radiology calls for the patient, a job is placed into the queue by either the clerk or nurse, to have transportation pick the patient up and wheel him or her to radiology. The nurse must make sure that there are several steps that are done in order for the patient to leave with transport. The current process at Mercy Hospitals has many variables to follow, which leads to variation in the transport system, hence the need to streamline the process.

With so many variables, departments, and people involved in the transportation of a patient it is imperative that every step in the process is followed with precision. Mercy Hospitals has an opportunity to streamline this process with the use of TC so that variation is minimized. TC uses management tools to find specific problems, prioritize the problems and the tools also help to manage the implementation process effectively.

These tools include a team charter, issue trees, prioritization matrices, stakeholder analysis, tactical implementation plan and others. With these management tools it has

been found that Mercy Hospitals has several problems with their intra-hospital transportation service and the reasons turn-around times are lengthy. Some of the problems are:

- 1) Patient is eating, showering or being given medications when transport arrives.
- 2) Transport waits up to twenty minutes for nursing to finish tasks.
- 3) Patient's chart or medical record is not available to go with the patient. The physician or nurse may be using it to document.
- 4) The handoff sheet is not finished before transport arrives.
- 5) The attending nurse may be with other patients so the transporter will wait until he or she arrives.
- 6) When the order for transport is placed in the queue the wrong equipment is ordered (i.e. gurney vs. wheelchair).
- 7) Clerks or nurses that placed jobs into the computerized Transport Tracking system do not know how to cancel jobs in the queue. Transport arrives only to find that the job has been cancelled.

These problems are not the only problems found in the intra-hospital transportation process, but these are the major problems that can easily be fixed with minimal resources and applying the Pareto principle. This principle is also known as the 80/20 theory. This theory states that focusing on 80% of the problem will take 20% of the time and resources; whereas the last 20% of the problem will take 80% of the resources to correct. Following this model will give Mercy the biggest bang for its buck.

*Major Stakeholders*

Entities such as transporters, radiology staff, nurses, clerks, certified nursing assistants (CNA), physicians and operations as a whole will be part of a more streamlined process which places the patient as top priority. As each entity begins to consider each patient as part of an all-encompassing process, rather than thinking of each department separately, a culture will emerge to create a better environment for patients

The way Mercy could help each entity think about the whole process is to involve all previously mentioned parties in diagnosing the problems and creating solutions to the problems. This is one essential ingredient in TC; front-line staff engagement as well as involvement from all departments. The impact of this streamlined process will affect all entities involved in the transportation process. Transporters, for example will not waste so much of their time waiting on clinical employees such as nursing and certified nursing assistants. They will be able to be more productive in their work.

Clinical employees may be impacted the most as they may need to alter their thinking to meet the patient's needs before those of their own department and staff. They will also be required to follow certain additional procedures before placing a transport job into the queue. As Radiology typically receives patients when they best fit into the department's schedule, Radiology may also need to change to a more flexible intake process to allow for a smoother flow amongst departments. Every department involved in the process may need to increase their flexibility to decrease the wait time of patients.

Last but not least is the Chief Operating Officer (COO) of Mercy Hospitals. He is ultimately in charge of the operations of the hospital and how processes are running; this includes the transport process. If situations arise in which a patient's life is in danger and

the proper processes and procedures are not taken, the COO will be held accountable for the mishap. The COO holds a large stake in the process to ensure proper wait times are being met.

### *Goals and Objectives*

The goal for this program proposal is to decrease average turn-around times to 22 minutes. The process needs to be transformational in order to decrease turn-around times from 32 to 22 minutes, a 31% decrease. Decreasing the transport time will minimize the chances of a patient safety problem occurring, such as a cardiac arrest or a patient fall. Both of these could potentially be life threatening to the patient which could result in bad publicity to the hospital, ultimately tarnishing its image in the community of Bakersfield. Decreasing times may also increase patient satisfaction because returning patients to their room gives them the comfort and privacy they want while being treated in the hospital.

There are several objectives that must be met in order to reach the goal. The first objective is to create a process that includes more accountability with all the stakeholders involved. Accountability is the best way for any process to be sustained. No process is so good that it can be done without accountability. By using the computerized transportation system, users can be tracked. This allows for everyone to see who placed a job in the queue and if it was done appropriately.

The second objective is providing education on the current state of the process vs. the future state or where the process should be in terms of turn-around times. This is essential to achieving success amongst the staff involved in order to meet the goal. Each department needs to be educated on the dangers of long wait times for patient transport as well as the benefit of fixing the problem. Lean tools such as standard work, process maps

and issue trees will be used to diagnose the root cause of this problem and help to achieve the average goal of 22 minute turn-around times. As the staff understand the process and see the need for change, they will be more likely to promote the needed changes in their department.

### *Measures of Effectiveness*

To measure the effectiveness of the program, data will be used from the computerized Transport Tracking system. This system tracks every job placed in the queue. Each day and subsequently each time frame can be broken down into specific data pieces. These data pieces are as follows:

- 1) Total number of transport requests
- 2) Average transport time in minutes
- 3) Total nursing delay in minutes
- 4) No assistance from nursing in minutes
- 5) Equipment delay in minutes
- 6) Total delay time in minutes

Nursing delay times is the time it takes a nurse to prepare the patient to be transported, after the transporter has arrived. No assistance from nursing is defined as a nurse not assisting transporters when they return the patient back from a procedure in the hospital. Equipment delay is when a transporter is trying to find equipment, cleaning a piece of equipment or even taking back and retrieving the right piece of equipment. The total delay time is the total number of delay minutes for the day. Those delays include nursing delays, no assistance, equipment delays and others that are not mentioned here. Measuring all of these data pieces is important to holding all stakeholders accountable.

These pieces of data will measure the effectiveness of the entire process and the length of time in transport for each patient. It also shows fluctuations in the number of transport requests. This is important because the transportation department can staff based on average volume fluctuations per day.

### *Potential Solutions*

There are several potential solutions to this problem. The first is to maintain the status quo and do nothing. Mercy can maintain the current 33 minute average turn-around times and hope that patient satisfaction and patient safety does not decrease. While this is a possible solution and accept the status quo Mercy would not desire to be mediocre going into the future.

Another potential solution to the problem is to completely get rid of the intra-hospital transportation system and hire the transporters on a departmental level. For example, instead of a single transportation department that transports patients from all other departments, there could be transporters hired from within each department. This possible solution would place accountability on the departmental level and there may be more help and buy-in because the transporter is an employee of that clinical floor.

The final option is to create a standard process that is streamlined, which entails getting rid of anything that may not add value to the patient. This standard process helps to place everyone and every department on the same page with regards to the transport process. Secondly, creating a standard checklist for nurses to follow so they know which key items must be finished before they enter the patient into the Transport Tracking system will help to reach the goal of 22 minute turn-around times. The hand-off from nurse to transporter will be quicker as all necessary procedures will be finalized before

placing a patient in the queue. The third part to this streamlined process is providing education on how to place a job into the computerized Transport Tracking system or in the queue. This system is designed to make placing a job in the queue easier, and more efficient. It will help with accuracy of patient transports as well as accuracy of which equipment the transporter would need to bring, thus reducing wasted time. Finally, transporters waiting five minutes or longer to transport a patient should place the job back into the queue and move on to the next job. This will place accountability on the nursing staff, physicians, and Certified nursing assistants to make sure the patient is ready to leave when transport arrives. In summary, the potential solutions include (1) maintaining the status quo, (2) employing transporters on a departmental basis rather than having an entire transport department, and (3) creating a streamlined process with the resources already available.

## **CHAPTER 3**

### **PROGRAM PROPOSAL**

In this chapter the researcher will propose a new program for the intra-hospital transportation department at Mercy Hospitals of Bakersfield.

#### *Rationale*

The rationale for this program proposal is that Mercy Hospitals has a problem with patients waiting too long to be transported from point A to point B. This is based on the causal theory where A leads to B which leads to C. If Mercy Hospitals streamlines its transport process, wait times for intra-hospital transportation will decrease, thereby increasing patient satisfaction and safety. If this does not happen Mercy may experience what Hendrich and Lee (2005) explain, “intra-hospital [transports] can have a profound detrimental and even life-threatening effect on patients...due to decreased accuracy of monitoring [and long wait times] during the transfer process, as well as physiologic changes which can occur during [transport]” (p.157). Streamlining this process is a key part in providing better care for the patients that enter Mercy Hospital’s doors.

#### *Resources and Personnel Involved*

The resources that will be used to make this program successful are the same resources that are already being used. The intra-hospital transportation department has all the necessary resources to be successful. The resources that are already being used by the staff are patient gurneys, disinfectant wipes, Transport-Tracking data collection system, pagers, cell phones, and an in-house phone call system.

The personnel that will be used in this new process will be staff that is employed by the hospital. This includes all transporters, all nurses, all unit clerks, all certified

nursing assistants, all nurse managers, and all radiology technicians. All of these positions are an important part of a successful intra-hospital transportation program at MHB.

*Process –Participant Activities and Procedures (from a nursing floor)*

This program or process improvement proposal is different from other proposals in that it addresses the key issues by solving them with all the key players that create the problems. Essentially, empowering employees from the frontline encourages innovation and commitment to sustain the solutions proposed. Using the strategies from Transformational Care will help reach this goal. These strategies include a team charter, process maps, logic or issue tree, prioritization matrices and proven change management strategies.

The process will be standardized for all floors and will include all personnel mentioned above. The steps are as follows:

- 1) The attending physician will write an order for a test or tests.
- 2) The order is taken by the unit clerk and he or she enters the order into Meditech.  
This is the hospitals electronic health record database, used to order tests for patients.
- 3) The order is sent electronically to the Radiology modality. (The modalities within the Radiology department include, x-ray, ultrasound, magnetic resonance imaging (MRI), computed tomography (CT) and nuclear medicine. This is important to note because each modality is located in a different portion of the hospital).

- 4) When the Radiology modality is ready for the patient that modality calls the unit clerk and asks for the patient to be sent to the specific Radiology unit for their test.
- 5) The clerk will page the nurse over the hospital intercom system. If the nurse does not respond the clerk will call the nurse on their hospital issued cell-phone. (There may be times when the clerk will not be able to get a hold of the nurse because the nurse may be too busy with another patient's needs. In this case the clerk will ask the charge nurse to help get the patient ready for transport. A charge nurse is able to help because they do not have patients assigned to them. The charge nurse is the quarterback of the team of nurses and clerks. They guide the unit on patient care and patient flow).
- 6) The nurse gets the patient ready for transportation to transport the patient to the radiological unit that has called (see Appendix A).
- 7) After the patient is ready to be transported then the nurse will place the patient in the Transport-Tracking computerized system. The system is linked to the in-house phone system and to each transporters pager. The nurse will also select the appropriate equipment that the patient will need. Some patients may need a gurney while others may need a wheelchair. Other options, but not inclusive, include oxygen usage, bariatric wheelchair, and a notification that a patient has intravenous therapy (IV).
- 8) The nurse will let the clerk know that the patient is ready to leave so if at anytime when the attending physician comes to the nursing unit the physician may communicate to the clerk for the whereabouts of their patient.

- 9) At the same time as step number eight is occurring transportation is accepting the job from the phone system and retrieving the appropriate equipment to transport the patient on or with. Once the job is accepted it is triggered in the Transport-Tracking system that the transporter is on their way to pick-up the patient. This communicates to the nurse and clerk that transport is coming. There may be times when the intra-hospital transportation team is backed up because there are an unusual number of calls being placed. In this case it will be good for the nurse and clerk to know when their patient is next in the queue. The computerized Transport-Tracking system communicates this vital information.
- 10) Transportation arrives and lets the clerk know they are picking the patient up for an exam.
- 11) The clerk pages the nurse over the over-head intercom system.
- 12) The nurse responds to the call and performs the final duties that can only be done when the patient is leaving their room. This is the hand-off and it includes the patient's name, diagnosis, and other potential problems that a transporter should know. It is important to note that a transporter must have an RN or charge nurse present to perform a hand-off. (If the nurse does not respond within 5 minutes from the time of the call the transporter immediately engages the charge nurse to perform the duties that the nurse would do. This mitigates time the transporter must wait. The more time that is wasted the longer each job and turn-around time is. If a charge nurse cannot be located the transporter will place that specific job back into the queue using the Transport-Tracking system.
- 13) The hand-off between the nurse and the transporter takes place.

- 14) The transporter than transports the patient to the correct radiological modality.
- 15) The transporter and the radiology technician perform the same hand-off that occurred between the transporter and the nurse.

*Process –Participant Activities and Procedures (From Radiology or other area)*

The same type of process occurs except there are fewer steps when the patient is being transported back to their room.

- 1) After the Radiology modality or other service area is finished treating the patient, than the Radiology technician will call for transport.
- 2) Transport receives a page and accepts the job through the Transport-Tracking system.
- 3) Transport arrives to take the patient.
- 4) A hand-off occurs between the transporter and the technician.
- 5) Patient is transported to their room.
- 6) Once the transporter arrives at the floor they will let the clerk know so the clerk can page the nurse that is taking care of that patient.
- 7) The clerk pages the nurse to the patient room.
- 8) A hand-off occurs between the transporter and the nurse.

*Implementation & Program Management*

The implementation portion of the program proposal is very important because the proposal may be the best proposal created, but if it is not supported by senior management and if all employees involved in the proposal are not on the same page, it will fail. To mitigate this failure a tactical plan will be implemented. The plan will consist

of a model created by the *Institute for Healthcare Improvement* (IHI) called the PDSA cycle (IHI, 2011). PDSA stands for Plan, Do, Study and Act.

At this point in the program proposal the “plan” portion has been done and solutions have been created from the problems or issues that have arisen. The “do” requires trying the solutions on a very small scale. In this case the small scale will be one nursing floor from the hospital. The reason one floor has been chosen is because the computerized Transport-Tracking system can provide data analysis much easier on a floor basis rather than on an individual nurse basis. When testing there must be data to know if what has been implemented is actually working. Also, testing the solutions on a small scale makes it easier to identify and fix problems or issues.

The “study” segment means to look at the solutions and find out what is going well and what is not going well. To execute this portion of the proposal, Transformational Care will be used to study the proposal. Transformational Care will invite members who are actually working within the process. The team will include a nurse, a clerk, a transporter, a radiology tech and a member of the Transformational Care team who specializes in facilitation and mediation. The team will discuss on a weekly basis at a set meeting time and in a set location within the hospital. The team will discuss the changes that need to be made before rolling out to another part or floor of the hospital. The team will then “act” on the revised solutions they have created. The small test will continue until the team feels that the proposal or new process is as good as it will get, meets the needs of the patient and decreases average turn-around times on that specific floor. The IHI (2011) states it best when testing small and spreading changes in an organization;

Spread is the process of taking a successful implementation process from a pilot unit or pilot population and replicating that change or package of changes in other parts of the organization or other organizations. During implementation, teams learn valuable lessons necessary for successful spread, including key infrastructure issues, optimal sequencing of tasks, and working with people to help them adopt and adapt a change. Spread efforts will benefit from the use of the PDSA cycle. Units adopting the change need to plan how best to adapt the change to their unit and to determine if the change resulted in the predicted improvement.

To make sure everyone that is involved is on the same page a three-pronged approach will be used to communicate and implement changes. The first is using 7am and 7pm huddle forum. A huddle is a five minute gathering of all staff at the nurse's station or in a specific area to converse about the day and to communicate any changes that need to occur. The huddle is managed by either a charge nurse or a nurse manager. The charge nurse and or nurse manager of the floor will communicate the changes and address concerns or questions regarding the testing changes. As the implementation continues the huddles can be used as a valuable discussion forum for employees to address what is not working and what is working. This information will then be taken back to the team meeting that is led by the Transformational Care department.

The second approach will be to use a MOX. A MOX is an email database in the hospitals electronic medical records system; Meditech. All clinical personnel must read their MOX at least once per day per policy at Mercy Hospitals of Bakersfield. This MOX will be sent by the nurse manager from the floor that is being tested. The MOX will

include the background of the problem, the problem, the solutions the team created, how those changes are to be implemented and finally all the employees expectations.

The third and final approach, to make sure everyone is on the same page is using the communication and notification binder from that each employee is also supposed to check daily. The solutions and changes that will be made for the proposal will be clearly stated on paper and placed in the binder. Each person will read and sign a form stating they understand the new changes, will support the changes and finally offer suggestions on how to make the proposals better as the changes are implemented. The sign-in sheet is important because it is a way to hold staff accountable for their actions.

If and when any employee does not follow the proposals and changes and outright will not do them, the nurse manager will follow up with the employee to understand their concerns. The employee may also be invited to participate on the Transformational Care team. This may help to get buy-in from those that are not compliant because the forum helps them feel validated with proposals coming from the staff that is performing the work.

The tactical implementation plan will also include a schedule for implementing to all hospital floors. Each floor will become stable before the next floor will continue with the implementation. Stable means that the process is implemented and is working as well as the TC team thinks it should be; more importantly the data must support what the team believes. The team may believe that they are doing well but if the data says otherwise than more tests of change will follow. The plan, however, will be to rollout to the fourth floor for six weeks and then to the other floors until the whole hospital, including both campuses has implemented the new proposals (see Table 1). The plan has a total

Table 1

*Schedule of New Transportation Rollout to Mercy Hospitals*

<b>TRUXTUN FLOORS</b>	<b>Tentative Length of Rollout (in weeks)</b>	<b>SOUTHWEST FLOORS</b>	<b>Tentative Length of Rollout (in weeks)</b>
4west	6	Med Surge/Telemetry	2
5west	4	ER	2
2west	3	ICU	2
3west	2	Operating Room	2
Emergency Room	2	Post Anesthesia Care Unit	2
Operating Room	2	Ambulatory	2
Post Anesthesia Care Unit	2	ICU	2
Ambulatory	2		
ICU	2		

of 37 weeks to fully integrate at both locations within Mercy Hospitals of Bakersfield.

Plenty of time has been given to fully implement and sustain this new proposal. As the proposals are implemented on more and more floors, it will take fewer weeks to implement on later floors. The logic behind this is that most of the issues that stem from the new process should be fixed by the time it reaches that latter floors, therefore less time on fixing issues that have already occurred.

## CHAPTER 4

### ALTERNATIVE SELECTION

#### *Criteria for Recommending Alternatives*

The criteria for recommending alternatives will be based on efficiency, effectiveness and feasibility.

Efficiency is how well a program performs in comparison to what is actually performed with the same amount of resources (labor, money, time, etc.). The efficiency of the program will be measured by how long the average turn-around times are for patients to get to point B from point A, but doing this with the same amount of staff. This goal is to create a better process using the same number of resources to decrease the turn-around times.

The efficiency of the status quo is not reasonable due to the average amount of time it takes for the intra-hospital transportation system to take patients from point A to point B. This long wait time may cause patient dissatisfaction as well as an unsafe situation for patients. For example, a patient who is on telemetry monitoring (monitoring of a patient's heart activity to make sure the patient's heart activity is normal) will be taken away from the person that is actually watching the monitoring. The longer the number of minutes they are taken away from the person who is monitoring the patient's heart activity the more critical the situation. This is the type of situation that is very unsafe for patients.

Effectiveness is measured by the program reaching the desired goal, which is to decrease the average intra-hospital turn-around time to 22 minutes. Reaching the goal of 22 minutes is based on the assumption that this will increase patient satisfaction and

provide a safer environment for patients. Providing a safer environment will also be measured as part of the effectiveness portion. This can be measured by how many hospital acquired conditions occurred between point A and B and back from B to A. Examples of these can be the number of patient falls and the number of physiologic changes that occur which require emergent care from nurses or physicians. In the end, the desired result is to decrease average turn-around times which will lead to zero patient safety problems as well as increased patient satisfaction.

Feasibility can be defined as the level of capability that the program can be carried out. The feasibility of this program proposal will be measured by the program's ability to decrease the average intra-hospital turn-around times to 22 minutes. This decision will be based on the working team's analysis of the data that ultimately found a great deal of process error which creates wasted time. Continuing with the status quo will make it impossible for the intra-hospital transportation service to hit the 22 minute mark, because every person that affects the system does not understand how their actions impact the whole. The new program proposal eliminates that and because of this the program proposal presented is much more feasible to meet the goals outlined.

Another feasibility issue that this program proposal must address is whether or not the major stakeholders at Mercy Hospitals will accept the program. The major stakeholders in this situation would be front-line staff such as nursing, transportation, Radiology, and management and executives. There must be a consensus to try this program proposal amongst all these stakeholders for the program to be feasible. If it is to be carried out the stakeholders will be the people to do this.

*Comparison*

The current intra-hospital transportation system is not streamlined, causes long delays, and jeopardizes patient's safety and satisfaction. The status quo contains a process that is in line with the idea of "what's best for me" mentality. In comparison the patients' needs are placed above the individual and the new program proposal answers the question, "what is best for Mercy's patients with regards to the intra-hospital transportation system?"

Comparing the status quo and this program proposal based on efficiency, effectiveness and feasibility will provide more insight as to why this program will better serve the patients at Mercy Hospitals of Bakersfield as compared to the status quo.

When comparing this program to the status quo based on efficiency this program will waste less time because the process will be more streamlined. For example, eliminating wasteful activities will increase the efficiency. Some of these wasteful activities include; waiting on nursing staff for longer than five minutes, transportation accepting a call that has not been deleted from the transport tracking system, and the wrong piece of equipment ordered. These activities make the status quo very inefficient. The program proposal presented seeks to eliminate these wasteful activities.

Comparing this program proposal to the status quo based on the criteria of effectiveness, the desired results can be reached. The goal or the desired results of this program proposal is to decrease the average intra-hospital transportation turn-around times to 22 minutes. This can be reached by focusing on eliminating wasteful activity. The status quo has made no effort to identify the problems or issues. On the other hand the program proposal presented takes identifying the main issues as a priority. Identifying

the problems and issues takes a great deal of time and effort but once the issues are identified, then and only then can solutions be created to fix the problems. Thus, the proposal will be much more effective than the status quo.

Using feasibility as a criterion the program proposal is more feasible than the status quo. The program can be carried out and meet the needs of patients because this proposal actually uses a model of continuous improvement. The status quo has no model; therefore the program proposal is more feasible to be carried out to reach the established goal. Also, because this proposal has a model and a standard approach it would be more feasible that all stakeholders involved would accept the new proposal.

Based on the criteria presented the program proposal can reach the goal that the intra-hospital transportation department desires to achieve. The steps to reach the goal are set in place by the proposed program. If the steps are followed Mercy Hospitals of Bakersfield will enjoy a more streamlined transportation process and safer, more satisfied patients.

#### *Monitoring and Evaluating*

To monitor the progress of the proposed program, working teams will meet weekly. Team members will bring back evaluation comments from front-line staff involved in the process. These comments are the anecdotal evidence that provide information that data may not. The staff will provide feedback on what is working and what is not working with regards to the new process. Based on this feedback the team will develop solutions to fix the problems that have risen based on the comments and anecdotal evidence.

Evaluation will be based on data that will be generated from the transport-tracking system. Every week at the working team meetings, the data will be presented by the team leader. Based on the average turn-around times and staff feedback, decisions will be made as to which fixes need to occur to reach the goal. Once the goal has been reached the team will continue to monitor and evaluate the process until the goal has remained steady for one month. One month is a good indicator that the process has taken hold and the people involved have accepted the change and are willing to keep sustaining the process. If there is any slippage of performance over a two week period the team will reconvene and start the process of performance improvement again.

#### *Limitations*

This program proposal has several limitations. For example, a lack of time to investigate if the real problem may just be a lack of transporters, the lack of time to investigate the feasibility of the program proposal working the same at both of Mercy's campuses', and finally the time to develop a survey to understand the true impact of long turn-around times and the patients perspective on this time. The researcher was not able to receive input from the patient perspective on what he or she would like when transported in the hospital. Therefore, it would be very important to create a survey to understand the impact of the program proposal as well as to have designed the program based on the feedback from the patients' perspective. Based on the results of the survey, the program proposal may need to be adjusted to meet the patients' needs.

There was a lack of research to investigate one possible problem for the long average turn-around times. There is a possibility that there may be too few transport staff personnel. The researcher was not given access to look at this information or to question

administration on this number, rather to only pose the question to the Director of Environmental Service. The Director assured the researcher that the transport department had as much staff as they were allowed.

Mercy Hospitals has two locations, although it is one hospital. Each location has its differences that may negate the proposed program. The people who work at each location create the culture that is there. That culture may need a different program than the other. The researcher was only able to propose a program based on one location and its unique style.

Finally, there was no way to understand the true impact of what the status quo transport process had on patients' experience. If the researcher had more time a survey would have been created to provide a more tailored program for the desires of the patients. Creating a program for someone else but not getting their input may be futile in the end because it may not meet their needs.

There may be some positive and negative spillover with the proposed program. A negative spillover may be a negative attitude toward transportation employees because of the demands placed upon others involved. The new proposal demands that nurses always be prepared for the arrival of transport and that they are to always follow a set of criteria before placing a job into the transport tracking system. Sticking to a standard sequence may not be convenient to a nurses work flow. For example, a nurse may be on a computer and can immediately place a job into the transport system. But if the patient has not met certain criteria, he or she must meet the criteria and then place the job.

A positive spillover effect is that patients may be happier. For example, often transportation is the last employee that a patient see's after they leave the hospital.

Patients leaving the hospital generally want to leave as soon as they can and if they are told they can leave at a certain time and that time is met by the transporter, patients will be more positive. If they are taken out in a timely manner this positive experience may persuade them to tell others about their positive transport experience. This positive experience can impact others to want to go to Mercy Hospitals for their healthcare.

There are other alternatives that can take place but based on the criteria presented the program proposal will help meet the goal for the intra-hospital transportation department. To monitor and evaluate the progress of the proposal weekly team meetings will be implemented. These meetings will be based upon staff/patient feedback and data which will drive corrective action. While there are spillovers, the proposed program can meet the needs of the patients at Mercy Hospitals.

## CHAPTER 5

### SUMMARY, CONCLUSION AND RECOMMENDATIONS

#### *Summary and Conclusion*

Mercy Hospitals of Bakersfield's problem is that the intra-hospitals transportation systems' turn-around times are too long. This length may eventually cause a patient safety and satisfaction problem. As previously stated, Bion and Shirley (2004) found that "there are many potential risks associated with transporting ...patient[s], including the physiological changes associated with the change in environment, changes in equipment's such as ventilators and pumps...the absence of backup supplies and staff" (p. 1508). These potential risks are associated with a process breakdown which ultimately effects patient satisfaction and the community's perception about that specific health care facility.

To diminish the variability in that may cause problems, Mercy Hospitals will use TC to identify non-value added activities. These non-value added activities are activities that are wasteful and need to be eliminated so more time can be spent adding value to the patient. To do this TC will utilize front-line staff, those that are performing the activities and processes, to create solutions around the problems that are identified.

Fixing this problem at Mercy must be accomplished because it may cause a patient satisfaction problem. Patient satisfaction may decrease due to several reasons.

They are as follows;

- 1) Patients are clothed in a gown that has the potential to expose private areas of a patient's body and may not be warm enough to keep patients somewhat comfortable.

- 2) When patients are waiting to go back to their room after a Radiology exam, there is no process for them to call for help if need be.
- 3) It is uncomfortable for patients to be seen by other people walking by.
- 4) At Mercy, there are many guarded care patients. These patients are attended by officers. This creates anxiety to the patient and a sense that the patient may be unsafe.

Finally, the other findings are that there is no standard of work or step by step process for the intra-hospital transportation system to follow and all that use the system. Mercy Hospital's intra-hospital transportation service takes an average of 33 minutes to take a patient from point A to point B. The goal for the department has been to reach the 22 minute mark, set by the Department Director of Environmental Services at Mercy Hospitals. The process needs to be transformational in order to decrease turn-around times from 32 to 22 minutes, a 31% decrease. Decreasing times may also increase patient satisfaction because returning patients to their room gives them the comfort and privacy they want while being treated in the hospital.

This program can be successful by meeting two objectives; creating a system of accountability with all the stakeholders that are involved and second, by providing education on the current state of the process vs. the future state and where the process should be in terms of turn-around times. As the staff understand the process and see the need for change, they will be more likely to promote the changes in their department.

#### *Recommendations*

The intra-hospital transportation system at Mercy Hospitals of Bakersfield takes too long with regards to turn-around times. This program proposal can better serve the

patients of Mercy because it establishes an accountability mechanism with regular working team meetings. Secondly, it provides a platform for front-line staff to create a new process. This ultimately gives incentives to the staff to maintain and sustain the process because they were involved in its creation.

There are several recommendations to improve this program proposal. If there was endless time there could have been an even greater in-depth study as to why there were problems within the intra-hospital system. Once a problem is found one must ask themselves, “is this the root of the problem, or is there something more causing this.” If there is something more to the problem then that is what needs to be solved. Getting to the root cause takes a great deal of time and effort due to the fact that each scenario can have many potential problems and each problem may have different root causes.

Another recommendation to make the program better would be to have more money to pay for observers to walk the process once the new changes were to take effect. Having an outside observer walk with the patient from point A to point B would allow for more in depth problem solving, once the proposal has been implemented. Any process change is never perfect and while this program proposal has many people involved, these people can create variability in the process, which can cause process breakdowns. These breakdowns could be captured immediately and fixed quickly. The quicker the breakdown is caught and fixed the smoother the process will be for the patient. Essentially, when implementing a new proposal there are so many variables that if not monitored for several weeks, constantly, the process has the chance to die quickly because it takes a lot of energy for people to remember how to do a new process. This is

especially true in a healthcare environment because there are so many other variables healthcare workers are thinking about.

Overall, the program proposal will work if followed promptly and will provide better patient care to the patients of Mercy Hospitals of Bakersfield. It will decrease the possibility of a patient safety problem but increase patient satisfaction because the patient will return to the comfort of their room rather than dealing with the uncomfortable variables of the hospital.

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Appendix A



**CSU Bakersfield**

Academic Affairs

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**Institutional Review Board for Human Subjects Research**

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**Steve Suter, Ph.D.**  
Department of Psychology  
Research Ethics Review Coordinator  
and IRB/HSR Secretary

**Date:** 03 March 2011  
**To:** Tracy Bertagnole, PPA Student  
**cc:** Paul Newberry, IRB Chair  
Jinping Sun, Public Policy & Administration Department  
**From:** Steve Suter, Research Ethics Review Coordinator

**Subject: Protocol 11-33: Not Human Subjects Research**

Thank you for bringing your protocol, "A Program Proposal to Improve the Intra-Hospital Transportation Service at Mercy Hospitals of Bakersfield" to the attention of the IRB/HSR. On the form "*Is My Project Human Subjects Research?*" you indicated the following:

I want to interview, survey, systematically observe, or collect other data from human subjects, for example, students in the educational setting. **NO**

I want to access data about specific persons that have already been collected by others [such as test scores or demographic information]. Those data can be linked to specific persons [regardless of whether I will link data and persons in my research or reveal anyone's identities]. **NO**

Given this, your proposed project will not constitute human subjects research. Therefore, it does not fall within the purview of the CSUB IRB/HSR. Good luck with your project.

If you have any questions, or there are any changes that might bring these activities within the purview of the IRB/HSR, please notify me immediately at 654-2373. Thank you.

A handwritten signature in blue ink, appearing to read "Steve Suter".

Steve Suter, University Research Ethics Review Coordinator

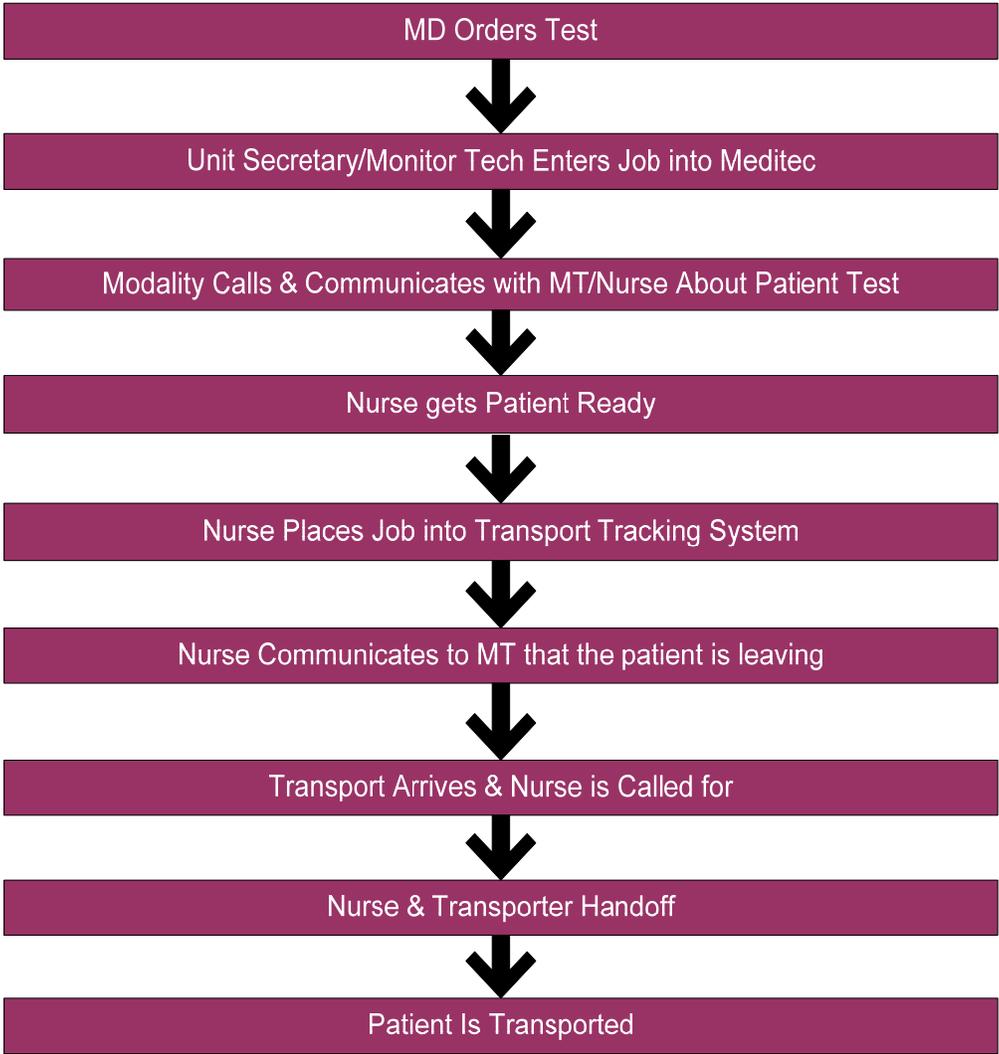
Appendix B

Patient readiness includes the following tasks;

- 1) Patient is informed of the test procedure.
- 2) Patient has gone to the bathroom, been given meds (if needed), and has been fed.
- 3) The patient and or family must sign a consent form for testing procedure.
- 4) The patient's blood has been drawn and the results are completed.
- 5) The hand-off form is completed.
- 6) The chart is ready to go with the patient.
- 7) Respiratory therapy is notified if they are needed.

Appendix C

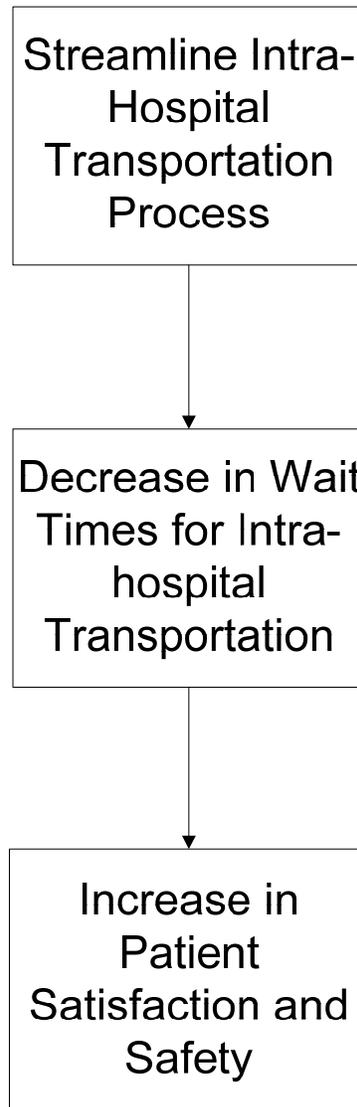
Simplified Process Map for the Proposed Intra-Hospital Transportation Program



Appendix D

*Figure 1:* Serial Theory Model Representing the Effects of Streamlining the Intra-Hospital

Transportation Process



Appendix E

Figure 2: The Current Intra-Hospital Transportation Process at Mercy Hospitals of Bakersfield.

