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Obstetric Triage Improvement

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Clinical Leadership Theme

The aim of this project is to reduce the average length of stay in the obstetric triage in the labor and delivery department at a large university medical center. The microsystem is the obstetric triage section of the labor and delivery department, and includes registered nurses, unit secretaries, obstetric providers (residents and attendings), anesthesiologists (residents and attendings), obstetric technicians, nursing management, and the medical director. The clinical nurse leader (CNL) curricular element embodied in this project is clinical outcomes management, and the CNL role function is that of an outcomes manager (American Association of Colleges of Nursing, 2013). As the CNL, I will use data to change practice and improve patient outcomes within my microsystem. The vision of the CNL is to improve patient outcomes by focusing on quality improvement, risk reduction, and patient safety at the microsystem level (Harris & Roussel, 2010). Reducing the length of stay in triage improves quality outcomes for patients by reducing wait times for assessment and treatments, and improving experience and satisfaction.

Statement of the Problem

Obstetric triage is a multidisciplinary, multivariable, complex specialty within the labor and delivery unit. It is comparable to an emergency department, with unpredictable census, chief complaints, and unexpected challenges. The problem to be addressed in this project is lengthy obstetric triage stays. The issue has many root causes (see Appendix A), including repetitive documentation, a lack of standard processes, and poor interdisciplinary communication within the microsystem. There is a general lack of standardization in triage, and each provider, nurse, and staff member approaches triage with different processes and expectations. There is also no formal means of assigning acuity to perinatal patients, to determine priority. The issue of lack of

standardization and acuity is a nation-wide issue, as there are currently no published standards in obstetrics. The purpose of this project is to create a cohesive standard workflow in triage using evidence and best practices, with the overall goal of reducing the average length of stay in obstetric triage.

Project Overview

The objective of this project is to reduce the average length of stay in obstetric triage from a baseline of 152 minutes to a goal of 120 minutes. Lengthy stays in obstetric triage are concerning in regards to patient safety, quality outcomes, and patient and staff satisfaction, as long triage visits reduce triage efficiency and throughput, resulting in assessment and treatment delays. As the CNL, I will lead a multidisciplinary team to assess the current state of triage and develop standards to propose for the future state. This will be accomplished during a weeklong intensive kaizen event, as well as during consistent follow-up meetings. Once the standard workflow is proposed, I will lead a 4-hour pilot, during which the team will follow the workflow in the real work setting to identify barriers and obstacles. The aim statement for this project is, the obstetric triage unit will decrease its average length of stay for prenatal patients to 120 minutes by April 12, 2016. The specific aim statement will help to accomplish the global aim statement, which is, we aim to improve the length of stay in the obstetric triage. The process begins with registration in labor and delivery. The process ends with an obstetric provider determination of patient disposition, either admitted to the hospital, discharged home, or transferred to another unit. By standardizing the process, we expect to improve efficiency, reduce waste (wait), increase patient safety, improve patient outcomes, and improve patient and staff satisfaction. It is important to work on this now because we have identified the need to

improve patient outcomes, decrease wait times to be evaluated by a provider, decrease length of stay in triage, and increase productivity and efficiency.

Rationale

To begin this project, I collaborated with our electronic health record system sponsors to develop an electronic system to collect the metrics and data needed to assess our baseline and improvements. Electronic time stamps were created to measure the various portions of the triage process. The data collection process was vetted by the medical director and staff, and compliance was measured for the first six months to ensure that our data would be accurate. Our initial data showed an average total length of stay in obstetric triage as 152 minutes (see Appendix B). A root cause analysis was completed to identify a variety of reasons for the lengthy triage times (see Appendix A). A recent adverse outcome for a pregnant patient waiting in the waiting room in triage served as an additional immediate call to action for a more efficient and safe triage process. A patient forced to wait in the waiting room while the triage unit was full to capacity experienced a perinatal medical emergency in the waiting room, resulting in the loss of her unborn child. This outcome for both mother and baby is inexcusable, and served to signal an immediate microsystem reassessment of the obstetric triage process.

An additional reason for decreasing the obstetric triage length of stay is the impact on patient experience, reflected in patient satisfaction scores, as well as employee satisfaction. The current patient satisfaction scores for the labor and delivery and postpartum units combined for July 2015 to February 2016 is 87.9%, which is less than the goal score of 91.6% (see Appendix C). Long wait times and inefficient throughput workflows negatively affect both patient experience and employee satisfaction. A study by Bleustein et al. (2014) demonstrated not only a negative correlation between patient wait times and patient satisfaction, but also a negative

association between patient wait times and patient confidence in the care provider and perceived quality of care. A correlation between employee perception of a professional practice environment and employee job satisfaction has been shown in studies like Lambrou, Merkouris, Middleton, & Papastavrou's (2014), and serves as the motivating force behind the Magnet Recognition Program® (2015). The Magnet Recognition Program® recognizes hospitals for quality patient care, nursing excellence, and innovations in nursing practice, all of which are focuses of this project (American Nurses Credentialing Center, 2015).

The financial implication of this project is minimal. The main cost is the salaried time the members of the project taskforce will incur spending time creating the standard workflow. The estimated amount of time required for the project planning and implementation is 10 hours for six employees. At an estimated hourly rate of $50 per hour, the total cost estimate is $4500, including benefits. The staff education will take place during work hours, and therefore there will be no requirement for incidental or regular overtime. Staffing numbers have been increased over the past year to accommodate for the anticipated volume growth in triage, so no additional staff will be required for this project to be implemented. Although there are no direct financial savings for reduced length of stay in obstetric triage, as patients are billed for services and time spent in triage, the ultimate goal for this project is improved patient safety, patient and staff satisfaction, and improved patient outcomes due to decreased wait times. The Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS) survey is the national standard for collecting patient perspectives of hospital care. The survey results are reported publicly to allow patients to compare hospitals and have autonomy in their choice of health providers. This transparency creates incentives for hospitals to improve quality of care, and can positively or negatively affect the financial wellbeing of an institution if patients choose

alternative hospitals due to poor HCAHPS results (Centers for Medicare & Medicaid Services, 2014).

Methodology

The objective of this project is to reduce the wait times and overall time spent in triage, with the goal of increasing efficiency and throughput, improving patient experience and outcomes, and increasing employee satisfaction.

Kotter's Eight Steps of Change theory serves as the foundation on which to build the change strategy process (see Appendix D). Kotter's theory uses eight steps to logically design and develop a process for change implementation. It is a linear process, but requires frequent evaluation and re-evaluation of the various steps, concluding with a focus on anchoring the changes in the corporation's culture (Kotter International, 2016).

The first step is to create a sense of urgency. Due to the recent rapid increase in number of triage visits, and the recent adverse outcome in the labor and delivery waiting room, the sense of urgency already exists. Unfortunately, it is not uncommon to have all four triage beds full, overflow labor rooms occupied by triage patients, and patients waiting in the waiting room, posing a definite safety concern for patient unable to be seen. The first step in creating the sense of urgency was to show measurable data to the key stakeholders. I worked with our electronic health record system, EPIC, to develop and implement electronic timestamps to measure the patient wait times during each step of the triage process. Time markers are documented when the patient arrives to the unit, is admitted, is seen by a nurse, is ready to see the provider, is seen by the provider, and has been assigned a disposition (admission, discharge, transfer to another unit, etc.). The data and metrics collected are intended to be presented to the key stakeholders as a baseline to confirm and escalate the sense of urgency. The information will also be provided to

the entire departmental microsystem during daily multidisciplinary huddles, through visual metrics, and via email to demonstrate the need for change, and prepare staff for the upcoming process improvement project. The objective is to be transparent in showing the rationale guiding the project in order to increase buy-in in the later steps. Lastly, the recent adverse outcome due to waiting in triage will serve as a significant driving force to show the urgency of this project.

Step two requires forming a powerful guiding coalition. This team will be led by myself, the CNL in the labor and delivery department, and will include the administrative director, the nursing management team, the unit-based council (UCM nursing's shared governance), the medical director, and the nursing educators. The vice president of Women's and Children's Services will participate as needed, and will be updated weekly on the project progress.

The third step is creating the right vision. The main objective is to decrease the amount of time each patient spends in triage. As shown in Appendix A, there are a variety of contributing factors to this problem. The vision for this project is to address the modifiable factors, evaluate current processes, and develop improved workflows to streamline the triage process.

Step four involves communication of the vision to increase buy-in. Once the vision is agreed upon by the key stakeholders, it will be communicated to the entire microsystem. The vision is a shared objective, affecting all members of the microsystem, so there will be mass communication including postings, email, and verbal communication during meetings, multidisciplinary huddles, and direct one-to-one contact. Patient experience and outcomes, and employee satisfaction will all be discussed as key outcomes for the project. Questions, concerns, and feedback will be welcomed as a way for the staff to be engaged in the project and its objectives.

Step five, empowering action, is also addressed within the root cause analysis, shown in Appendix A. Key action items for this step include decreasing the amount of documentation required for triage visits, creating nursing-driven protocols and order sets, and developing an acuity system, similar to those used in emergency departments.

Creating short-term wins, step six, will involve encouraging the staff to participate in the improvement project. Improvement data will be displayed on a unit metrics board and communicated to the staff involved during daily huddles, and rewards and incentives will be provided to maintain the morale during the transition.

Step seven is not letting up. Data since the implementation of the new processes will be collected to evaluate improvement and trends. Protocols and documentation will be re-evaluated and modified as needed to continue to improve upon the process. Obstacles and barriers will be addressed and removed as needed throughout the implementation process, as well as beyond.

Lastly, step eight is making it stick. Real-time follow up will be provided to the staff to address challenges and barriers. Daily metric reports will be generated through EPIC to follow trends, improvements, and compliance with the workflow. Effect on patient safety and experience, and effect on staff satisfaction will be communicated to the key stakeholders to demonstrate effectiveness of the quality improvement project.

The data used to determine the baseline metrics will be used to measure the project's effectiveness. We will measure the time the patient waits in the waiting room, the time the nurse performs her assessment, the time waiting for the provider, and the time for provider assessment and treatment before deciding a patient disposition (discharged home, admitted, transferred, etc.). My optimistic prediction is that the total length of stay in obstetric triage (the time from patient arrival to patient disposition) will decrease once the project is implemented. The goal is a

reduction in the total length of stay from 152 minutes to 120 minutes. Unfortunately, there are currently no published benchmarks for obstetric triage times. 120 minutes was agreed upon by the team as a reasonable and achievable 20% decrease in total length of stay. We will be tracking the metrics daily, and presenting to the staff daily in real time.

Data Source/ Literature Review

The literature surrounding obstetric standardization and efficiency supports the idea of creating standard workflows, focused on best practices, evidence-based research, and throughput. The PICO search statement I utilized in my research was, in the obstetric triage setting, does the use of a triage acuity tool decrease the total length of stay in triage, compared with no tool? This search yielded a variety of research articles, and prompted me to pursue additional searches, specifically including patient satisfaction, emergency department standards and guidelines, and employee satisfaction.

Angelini and Howard (2014) performed a systematic review of obstetric triage literature from 1998-2013. Seven key categories were identified (legal issues and EMTALA, liability pitfalls, risk stratification, clinical decision aids, utilization, patient flow, and patient satisfaction, the impact of obstetric triage on interprofessional education and advanced nursing practice, and management of selected clinical conditions in the OB triage setting). Best practices were developed by Angelini and Howard using these seven categories.

Although there is not a vast amount of research available pertaining to obstetric triage specifically, there are many articles and studies that show the negative impact of emergency department wait times and waiting room overcrowding on patient outcomes. Since the emergency department and labor and delivery department have similar triage needs, the standards created for emergency department triage can be useful in improving obstetric triage.

Schull, Vermeulen, Guttmann, and Stukel, (2015) correlated emergency department crowding with adverse outcomes in their study. Benchmarks for length of stay in the emergency department in a hospital in Ontario, Canada were established, and a retroactive cohort study was conducted for a period of almost 4 years. Adverse outcomes (defined as 7-day death or hospitalization) increased among patients seen during shifts when a lower proportion of ED patients met the length of stay benchmarks. George and Evridiki (2015) performed a comprehensive search of emergency department crowding, and found 35 applicable studies between the years 2003 and 2013. The three main categories determined were delays in treatment intervention, increased medical errors or adverse events, and increased mortality.

In addition to adverse patient outcomes and safety, there is also a significant link between wait times and patient satisfaction and perception of care. Bleustein et al. (2014) studied the relationship between wait time and patient experience, including patient satisfaction and the perception of care. A questionnaire was used to ask clinic patients about their experience and wait times. Results indicated that patient experience (patient satisfaction, confidence in the care provider, and perceived quality of care) were all negatively correlated with longer wait times. Paul, Jordan, Duty, and Engstrom (2013) performed a quality improvement project to study wait times, perception of care, and overall triage experience in a certified nurse midwife (CNM)-managed obstetric triage. Patients were given a questionnaire utilizing a 6-point Likert-type scale questionnaire. Their findings suggest that CNM-managed obstetric triage can improve patient experience and reduce the length of stay in triage.

Lastly, acuity scales (similar to what has historically been used in emergency departments) have been suggested to be a valuable tool in safely and efficiently managing obstetric triage. Although there is no official obstetric triage acuity tool recommendation

published yet, there are tools currently being tested. Smithson et al. (2013) conducted a study on the reliability created and implemented a five-category Obstetric Triage Acuity Scale (OTAS) to test the reliability of the tool and to determine the distribution of patient acuity and flow. Their OTAS tool was shown to be reliable, and length of stay in triage for low-acuity patients was decreased. The Association of Women's Health, Obstetric, and Neonatal Nurses (AWHONN, 2016), has also created a 5-level obstetric acuity index tool. They are currently recruiting hospitals throughout the nation to pilot the tool, to help assess the successes and challenges, and help to identify best practice standards in a field that has few standardized guidelines.

Timeline

The timeline for this project can be seen in Appendix E. The project began in August of 2015. The implementation is set to go live April 12, 2016 with consistent reevaluation, metric monitoring, and compliance checks to follow indefinitely.

Expected Results

The direct aim of this project is to reduce the average length of stay in obstetric triage. To measure the outcome of this project, the electronic timestamps will be used to measure exact times, and total length of stay. The expected result is a reduction in average length of stay to 120 minutes (about a 21% decrease).

The indirect effects on reducing the length of stay in obstetric triage are numerous, and equally important as the metric of minutes of stay. By reducing the length of stay, overall efficiency will be improved. This has an upstream effect on the emergency department, which sends viable perinatal patients to obstetric triage, and the waiting room, and has a downstream effect on the labor and delivery unit and the operating rooms, which accept admissions from triage. Efficient throughput will increase both patient and staff satisfaction scores, as patient

needs will be attended to based on acuity. Lastly, and most importantly, patient safety and patient outcomes will be improved as patients spend less time waiting to see a provider, receive the testing and treatments they need in a timely manner, and are either admitted or discharged quicker. The expectation is to eliminate all wait time for highly acute patients, and reduce the wait time for less acute patients.

Nursing Relevance

A standardized workflow, acuity index, and best practice guidelines have significant implications for the nursing profession. The emergency department has used acuity indexes for years, and the lack of true prioritization guidelines in obstetric triage is becoming increasingly dangerous and inefficient. Standard workflows and acuity indexes benefit the nursing profession by creating standards and expectations. Patient care is elevated through the practice of the nursing staff measuring, monitoring, and disseminating patient care quality indicators and metrics, and working to continuously improve patient outcomes. High-risk perinatal centers are seeing higher risk patients, as the prevalence of pregnancy-related co-morbidities (obesity, diabetes, hypertension, etc.) increases. Obstetric triage is the entry into labor and delivery and the obstetric operating rooms, and patients should be evaluated for life-threatening risk factors and dangers immediately upon arrival, rather than waiting to be seen on a first-come-first-served basis. The implementation of obstetric triage standards and the utilization of an obstetric triage index have the potential to dramatically increase throughput, patient outcomes, patient safety, and patient satisfaction.

Summary Report

The objective of the obstetric triage improvement project was to decrease the average length of stay for perinatal patients presenting to the obstetric triage. The microsystem was set within

labor and delivery in a university medical center in a large urban city. The population for this quality improvement project included pregnant patients with obstetric complaints presenting to triage for further evaluation. Methods used include a root cause analysis, process mapping, lean transformation methodology, and standardization of workflow. Baseline metrics were obtained using electronic time stamps following the patient experience through triage. Appendix F shows the process map, along with baseline and post-project implementation metrics.

The result of this project was a decrease in the average length of stay in obstetric triage from a baseline of 152 minutes to 120.58 minutes, which represents a 21% decrease. The results almost exactly matched the projection for this project, which was a reduction in average length of stay to 120 minutes. The creation of standard workflows, the addition of dedicated triage staff since the project's completion, and improved communication methods will continue to improve the triage process moving forward. Future steps include the implementation of a maternal fetal triage index, and the creation of nursing-driven protocols and order sets.

In order to sustain the changes made during the implementation of my project, an agreed-upon standardized workflow was created and implemented. The project included many changes, but the most significant was the creation of a flowchart to map the steps of triage, so that they are performed the same way in the same order every time, as seen in Appendix G. The workflow was finalized and agreed-upon by a taskforce of key stakeholders of the process. It was then communicated to the staff using daily huddles, visual depiction, emails, and unit bulletins. Clarke and Marks-Maran (2014) suggest giving staff an adequate amount of time to adjust to changes. They also propose that leadership should celebrate the small changes made by the staff, especially at the beginning stages to acknowledge their acceptance and hard work. My plan

moving forward is to discuss the triage workflow at each daily huddle, to gain feedback, and to identify concerns and obstacles. As I have learned, follow-through of the project is equally, if not more important than the implementation of the project itself. Having a process owner, and routinely assessing and reassessing progress and improvement is crucial to the long-term success of any project.

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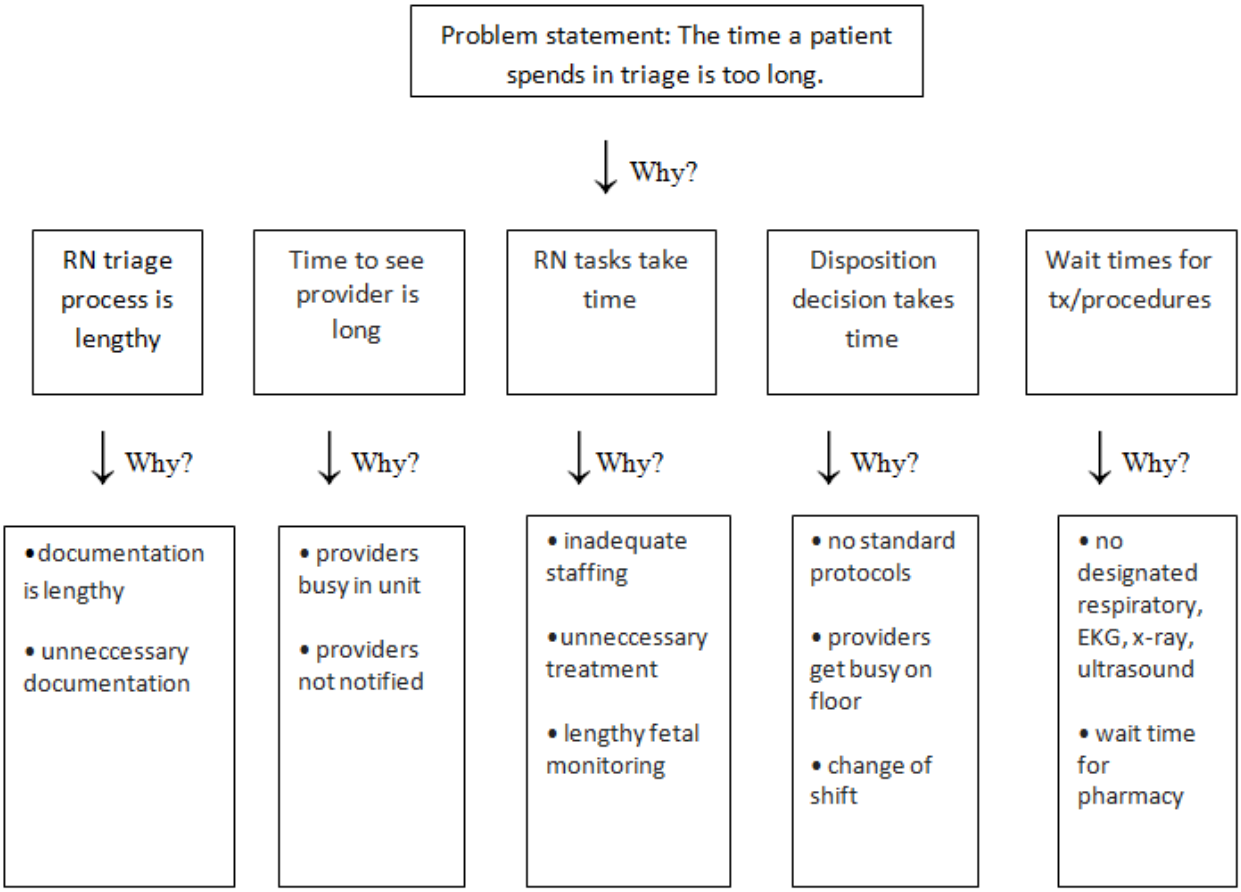
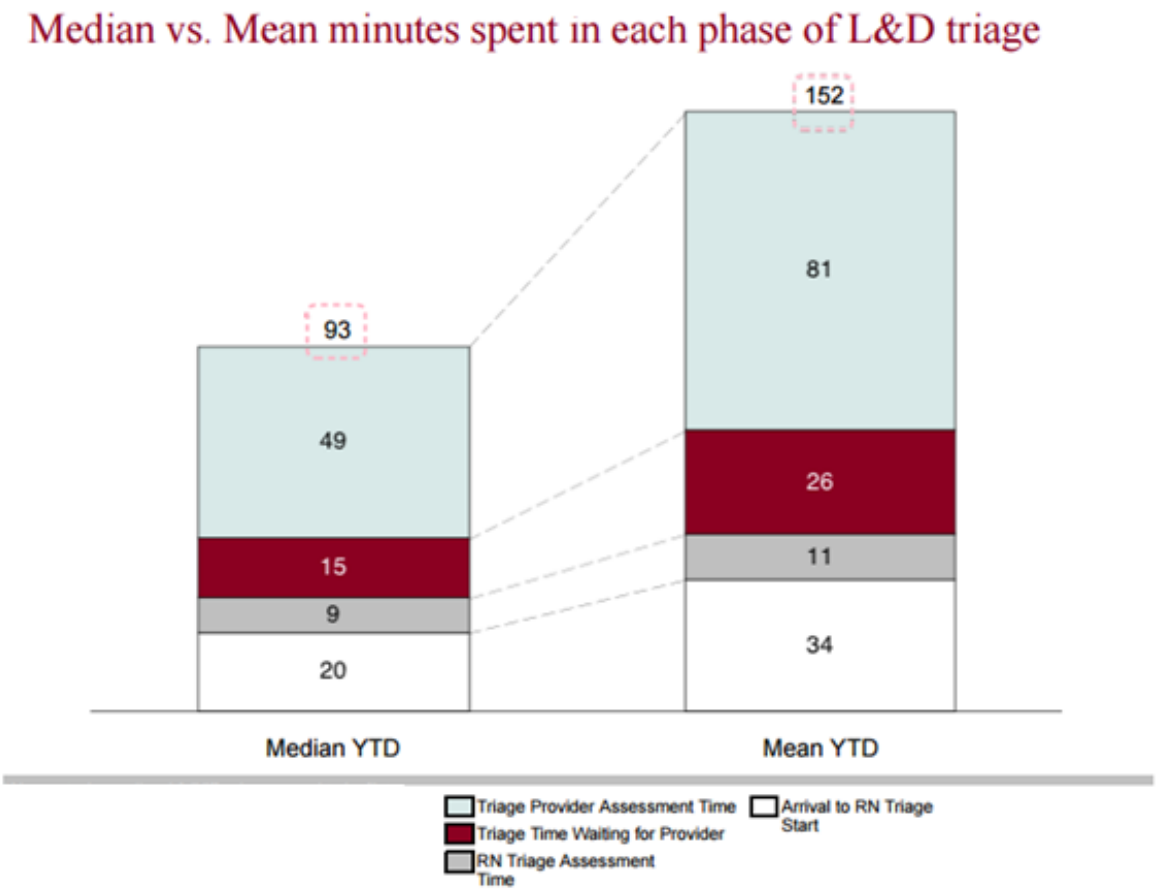
Appendix A

Root Cause Analysis



Appendix B

Data



Appendix C

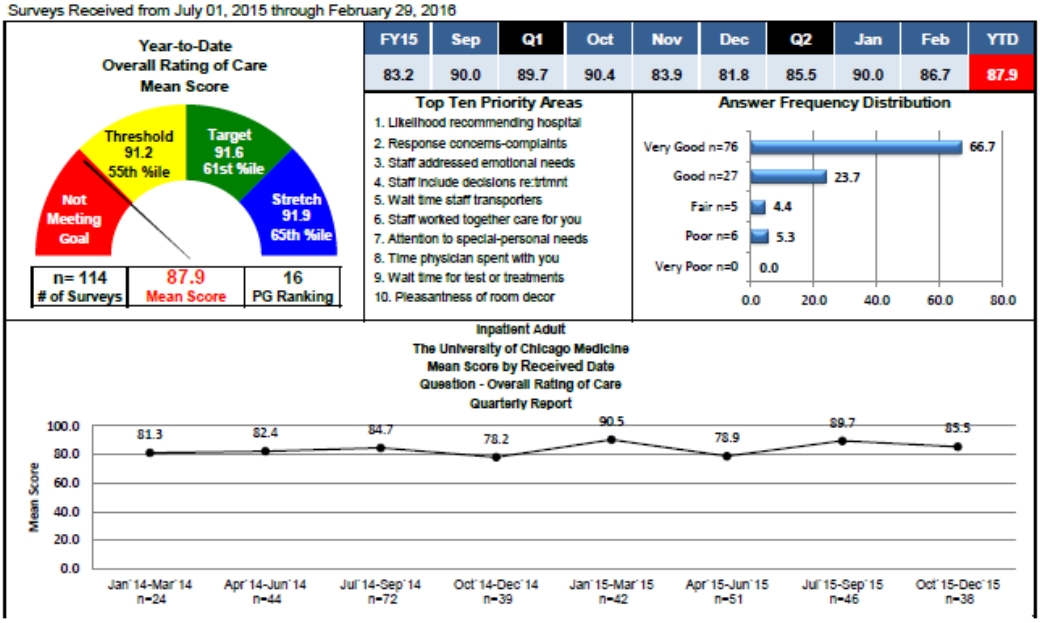
Patient Satisfaction Data

PRESS GANEY®

3NE-NW

Inpatient Adult Overall Rating of Care - Mean Score

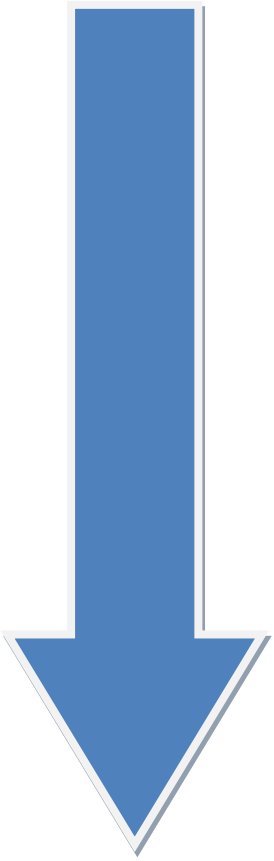
Surveys Received from July 01, 2015 through February 29, 2016



Created by Custom Research

Appendix D

Kotter's Eight Steps of Change



1. Increase urgency
2. Build the guiding team
3. Get the right vision
4. Communicate for buy-in
5. Empower action
6. Create short-terms wins
7. Don't let up
8. Make is stick

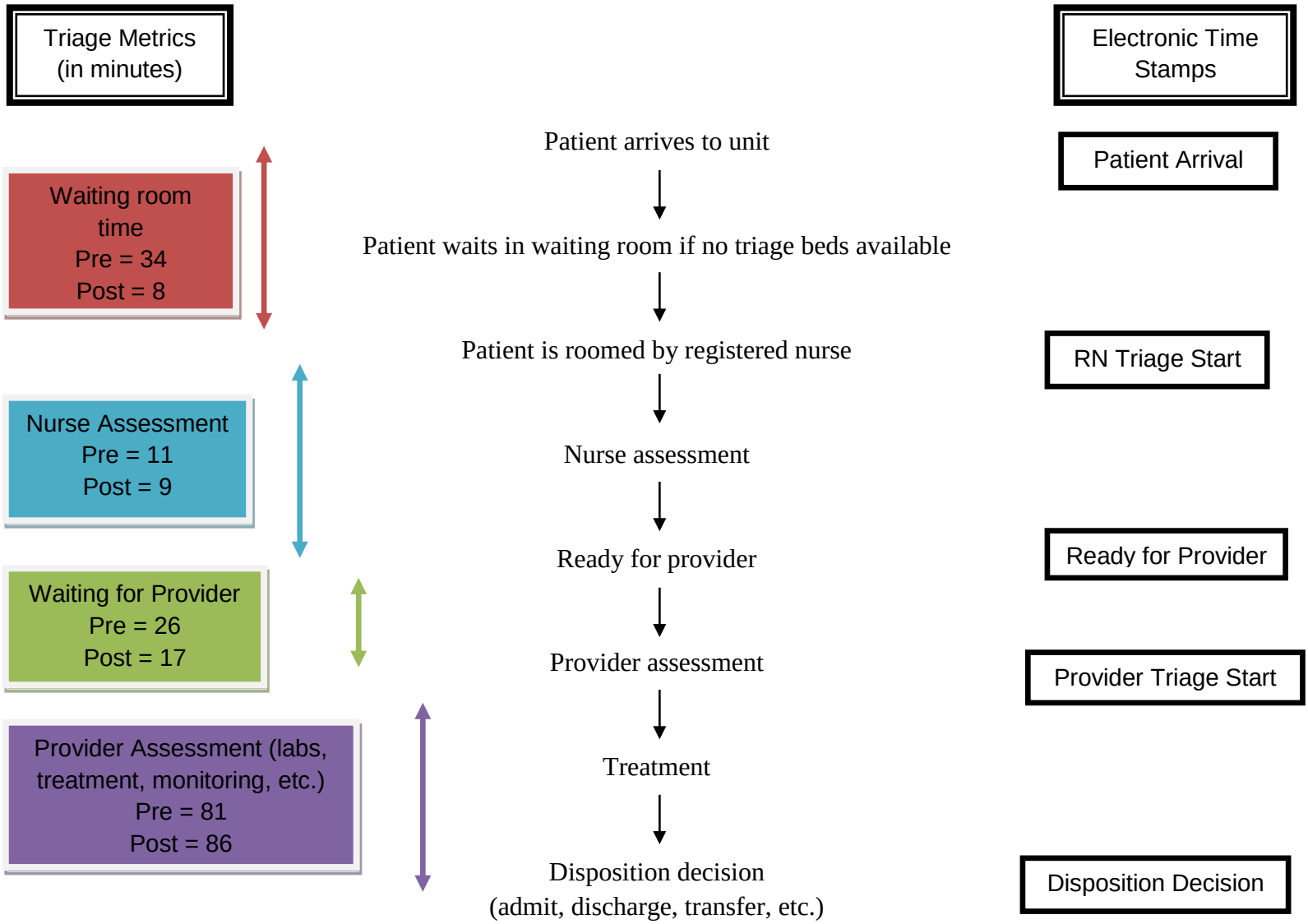
Appendix E

Timeline

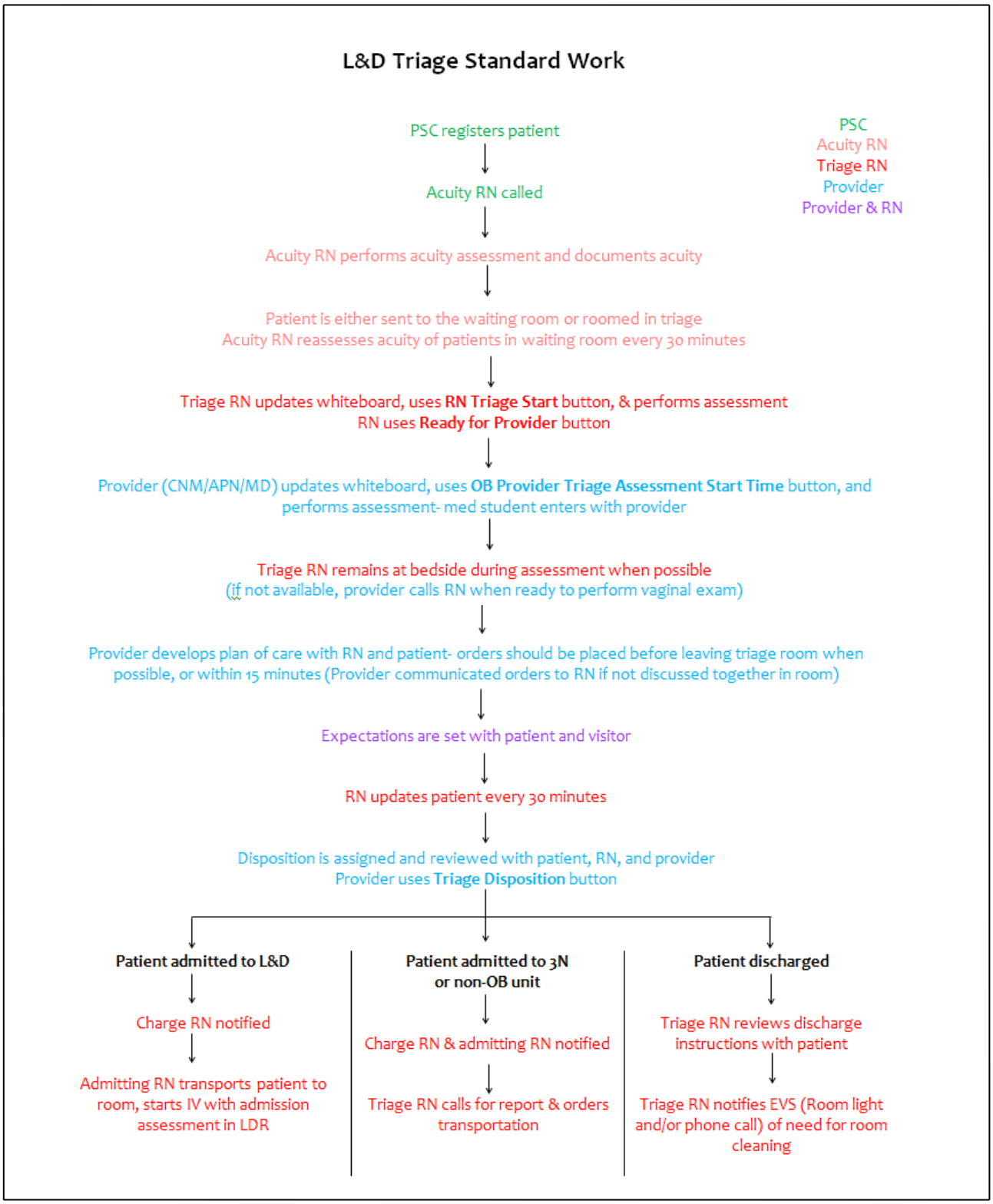
Kotter's 8 Steps	Action Plan	Timeline
Establish a sense of urgency ↓	Use data showing average wait time and average time spent in triage Compare with national benchmarks and standards	August 2015
Form a powerful guiding coalition ↓	Multidisciplinary team comprised of nursing leadership, medical director, administrative director, nursing educator	September 2015
Create the right vision ↓	Decrease amount of time patient spends in triage • Determine specific barriers within microsystem	October 2015
Communicate vision for buy-in ↓	Show financial impact, patient satisfaction, & employee satisfaction opportunities	December 2015
Empower action ↓	• Decrease triage documentation • Create nursing-driven protocols & order sets • Develop telephone triage system	December - March 2016
Create short-term wins ↓	• Display progress improvement trends • Provide incentives/ rewards	April 2016
Don't let up ↓	• Evaluate new data since change implemented • Improve & re-assess documentation and protocols	April - May 2016
Make it stick	• Provide monthly data reports and trends to multidisciplinary team • Follow-up in real time to address barriers	May 2016 & ongoing

Appendix F

Patient Experience Process Map



Appendix G


L&D Triage Standard Work
PSC
Acuity RN
Triage RN
Provider
Provider & RN
PSC registers patient
Acuity RN called
Acuity RN performs acuity assessment and documents acuity
Patient is either sent to the waiting room or roomed in triage
Acuity RN reassesses acuity of patients in waiting room every 30 minutes
Triage RN updates whiteboard, uses RN Triage Start button, & performs assessment
RN uses Ready for Provider button
Provider (CNM/APN/MD) updates whiteboard, uses OB Provider Triage Assessment Start Time button, and performs assessment- med student enters with provider
Triage RN remains at bedside during assessment when possible
(if not available, provider calls RN when ready to perform vaginal exam)
Provider develops plan of care with RN and patient- orders should be placed before leaving triage room when possible, or within 15 minutes (Provider communicated orders to RN if not discussed together in room)
Expectations are set with patient and visitor
RN updates patient every 30 minutes
Disposition is assigned and reviewed with patient, RN, and provider
Provider uses Triage Disposition button
Patient admitted to L&D
Charge RN notified
Admitting RN transports patient to room, starts IV with admission assessment in LDR
Patient admitted to 3N or non-OB unit
Charge RN & admitting RN notified
Triage RN calls for report & orders transportation
Patient discharged
Triage RN reviews discharge instructions with patient
Triage RN notifies EVS (Room light and/or phone call) of need for room cleaning