5-2017

Long-Term Sustainment of Rapid Improvement Events: A Case Study in "Room Readiness"

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Long-Term Sustainment of Rapid Improvement Events: A Case Study in "Room Readiness"

By

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An Undergraduate Thesis Submitted in Partial Fulfillment

of the Requirements for the

University Honors Scholar Program

Honors College

East Tennessee State University

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Acknowledgements

Foremost, I would like to thank my thesis mentor, Mrs. Jennifer Hunt, without whom I would not have had the means to participate in this research. Additionally, the wonderful Value Optimization Systems team; particularly Whitney Oliver, Lauren Hazelwood, and Beth Andrews at Johnson City Medical Center, who provided both the historical information from the original case and paved the way to get what I needed to configure the current state. Also, Mr. Kevin Weick, training manager for Mountain States Health Alliance Environmental Services through Crothall who was kind enough to spend time with a student eager to learn. Many thanks to Mr. Jason Smith with Medical Staff Services who also provided crucial data which drove my research.

I would also like to thank the ETSU Honors College and the College of Public Health for allowing me the opportunity to expand upon the typical undergraduate experience and grow my education and passion for my field of study. The creative and vigorous classes enriched my education in directions which have become instrumental in my current understanding of the field and its importance in the narrative of everyday life. I will never be able to repay the debt of gratitude I have for the opportunities you have presented me through the University Honors Scholars program.

There are countless family and friends to whom I am also forever indebted and without whom I would not have made it this far. It is no small thanks to my family for the support and encouragement to pursue higher education. Thank you for letting me go, grow, and learn. Finally, thank you to Joey, Caitie, Allie, and Caitlynn for being there throughout the long nights and early mornings. I would not be where or who I am without each of your friendships and support.

Abstract

Shifting payment models from fee for service (FFS) to pay for performance (P4P) have fundamentally changed the environment of healthcare administration in the United States (Center for Medicaid and Medicare Services (CMS), 2011). Due to this shift, there has been an increase in demand for tracking and improving quality measures to ensure not only patient safety, but optimization of utilization. Constraints on resources and capacity, coupled with increasing safety measures has developed a new study of patient flow (Miró, Sánchez, Espinosa, et al., 2003). Decreasing patient room turnover times has the potential to maximize utilization while ensuring patient safety and quality (Dyrda, 2012). LEAN and A3 Methodology were applied to create a process improvement initiative at a 500-bed regional medical center (RMC). Using a Rapid Improvement Event (RIE), efforts were made to identify gaps and improve processes to address issues which prevented patients from being in the right place, for the appropriate amount of time, and patient rooms cleaned in a timely manner. These gaps prevented adequate patient flow in the RMC. After tracking the implemented improvements for a year, the RMC ceased following the newly designed process. This study examines the original RIE, factors that changed since the event, and additional process improvements made two years post-RIE.

Background

The healthcare field has been one of rapid and constant change. Dynamic features in medicine and the discovery of how the human body and its systems function both internally and in response to the environment, have traveled a journey from pandemics to eradication of diseases. There are many factors which affect the state in which healthcare operates. Including improvements in technology, clinical research in medicine, best practices in the medical field, and government regulations (Kaiser Health News, 2016). However, as healthcare has become more complex, precise, and advanced, people are living longer. This has led to an incredible, sustained influx of long-term coordination of patient care for clinicians. With increased patient panels and complexities, the need for management of healthcare organizations from a business perspective grew.

Healthcare administration evolved to fulfill the rising need for focused management of healthcare services apart from clinical delivery of care. Coupled with increasing demand, escalating costs spurred diversification of methods to cover health services bills, ultimately laying the foundation of the complicated health insurance system seen today in the United States (Marjoua & Bozic, 2012, p.268). Between private insurance companies an array of plan options and benefits and public insurance programs with varying eligibility requirements and their own set of plan options, it is no wonder that citizens have trouble understanding how to navigate the health delivery system (National Association of Insurance Commissioners, 2007; Agency for Healthcare Quality & Research, n.d.). However, the primary role of the healthcare administrator is to track and understand this system and to ensure that the organization remains profitable enough to meet the ever-increasing demands.

Another important aspect of healthcare administration is keeping abreast of new governmental regulations. Being such an integral part of modern day life, healthcare is naturally one of the most regulated industries in the United States (Rubenfire, 2017). The Institute of Medicine's (1999) landmark publication, "To Err is Human: Building a Safer Health System", brought to light the state of quality in healthcare and called for major change in the system. After this report noted that between 44,000 to 98,000 deaths per year could be attributed to preventable medical errors, there was a strong call for major reform-not only for patient safety, but also for financial scrutiny (p. 31). The Institute of Medicine (IOM) later published "Crossing the Quality Chasm" (2002), which further defined quality healthcare as "the degree to which healthcare services for individuals and populations increase the likelihood of desired outcomes and are consistent with current professional knowledge" (p. 44). The IOM (2002) identified six key dimensions of quality through which they sought to measure considerable improvement. These included: safety, effectiveness, efficiency, equity, timeliness, and patient-centeredness (STEEEP) (p.44). These two reports helped to spur a major shift in healthcare administration and moved quality to the top of every administrator and clinician's priority list.

Partially as a reply to the IOM's findings, the Patient Protection and Affordable Care Act (ACA), passed in 2010, was the most comprehensive healthcare reform legislation to date in the United States. This legislation fundamentally shifted healthcare organizations' perspectives from one in which they were being held accountable for what is *done to* the patient, to one where they are now being held accountable for what is *accomplished for* the patient. In order to hold healthcare organizations responsible for these measures, payor sources-including the US government-soon took into account quality performance metrics when conducting business with health organizations in terms of reimbursing costs of care. Public reporting tools sponsored by

the Center for Medicaid and Medicare Services (CMS) (2011) were put into place to ensure transparency and allowed for more patients to participate in selection of their care providers (p.19). No longer under the guise of ignorance, this also spurred healthcare organizations to be more aware of their quality metrics so as not to lose their patients to competitors who were delivering higher quality care.

Quality improvement methods in healthcare have become a major topic of research, implementation, and practice primarily in the past ten years. A mix of factors have contributed to the focus on quality. After the IOM's reports, implementation of the Affordable Care Act, and pending legislation to date, the changing landscape of healthcare delivery and reimbursement has administrators, clinicians, and organizational performance strongly tied to incentives which ensure quality healthcare is being delivered to the patient population.

Literature Review

I. LEAN, Six Sigma, and the use of Rapid Improvement Events

There are two main improvement models which the literature suggests healthcare quality improvement has adapted for use in operations. Deriving from the Toyota Production System, *LEAN healthcare* is the application of process management methods to identify and eliminate waste in order to capitalize on value-added work which is patient-centered (Black, Miller, and Sensel, 2016). Similarly, the Institute for Healthcare Improvement (IHI) describes LEAN as "focus[ing] on improving value from the customer's point of view, by reducing waste of time and resources" (Provost, Lloyd, & Murray, 2016). A *LEAN Management System* includes: alignment of goals, visual management, implementation of standard work, coaching of continuous improvement, and leadership standard work (Sullivan, 2013). *Six Sigma,* which often functions harmoniously with LEAN methodologies, looks to streamline processes by reducing

variations. This involves development of standard work and "*poka yoke*", or mistake-proofing, processes to avoid defect which result in bad outcomes (Provost, Lloyd, & Murray, 2016).

There are numerous tools which LEAN and Six Sigma methodologies utilize to conduct the process improvement cycle. The A3 problem solving tool (see *Appendix A*) is one method used to track process improvement projects in LEAN. The first three boxes of the A3 contain the problem statement and define leading metrics related to the current state of the process. Boxes four through six detail identified process gaps, solution approaches, and proposed experiments. Included in this section may be root cause analysis tools such as a Five-Why diagram, Ishikawa (Fishbone) diagram, or a Spaghetti Diagram (Clare, 2014). The remaining sections, boxes seven through nine, track implementation of the plan proposed for the future state. Metric reviews to monitor progress are scheduled at one week, two weeks, and three weeks post-event to facilitate real-time problem solving. Follow up reviews convene at thirty, sixty, and ninety days post-event.

An A3 is often used to guide and track Rapid Improvement Events (RIE). The major improvement phase of an RIE takes place over three to five days and is the culmination of proposed experiments to better the future state, often utilizing many different types of quality improvement tools. For these events to function, there must be leadership buy-in and support (Liz, 2016). Including appropriate stakeholders into these events requires leadership approval and understanding that the work done during these events is important and impactful to the organization in the long term. It follows then, that there is a need for leader sponsorship and prioritization of the events which quality improvement trained staff facilitate.

An RIE has three main components: 1) preparation, 2) delivery, and 3) closure (Clare, 2014). In the preparation phase, research and data on the current process are collected and

analyzed. Key stakeholders for the event are identified and invited to join in the next phase, delivery. The most visible and important part of the RIE, delivery is the facilitation of the three-to-five-day event. With guidance in LEAN and Six Sigma methodologies from quality specialists, frontline staff along with other major contributors to the process form interdisciplinary teams and gather to devote their time and knowledge to improving the current state. The event requires an in depth look at the current process, where gaps or barriers may lie, and exploration into the root cause of those identified issues. These events are called Rapid Improvement Events because they are meant to implement changes quickly utilizing experiments to see if proposed solutions are feasible. With that feedback, real-time revisions are made to solutions. Finally, the last stage is closure. After tracking and reassessing at thirty, sixty, and ninety days, the event is considered closed and signed off by the sponsor if identified metrics are met (Clare, 2014). RIEs are high impact and high reward, if successfully planned, carried out, and implemented.

II. History of Room Turnaround Time

While medical practice has become more clinically comprehensive and research-based, administrative aspects of healthcare have become increasingly focused on cost and utilization control. Room readiness has emerged as a measure of importance to healthcare administrators as more accurate, advanced, and technology-dependent clinical practices have led to increased healthcare costs and higher utilization (Kaiser Family Foundation, 2011; 2017). Higher utilization can result in complications with patient flow. The flow of patients within the hospital-those coming in from the emergency departments, direct admissions, planned admissions from surgery and procedures, and/or trauma admissions-has become an intricate study (Miró, Sánchez, Espinosa, et al., 2003; Dyrda, 2012). Ensuring patients are in the right place at

the right time, and receiving the appropriate level of care, is difficult when there is some measure of unpredictability. Therefore, room turnover time (TAT), the time from patient discharge to the room being cleaned, and ending when another patient is placed in the bed, has become a metric of great interest for administrators and clinical leaders alike.

III. Previous Room Turnaround Time Studies

There have been multiple research studies focusing on the RIEs' impact on room turnover. One hospital in Texas implemented a "no-tech" solution to bed turnaround time by keeping a visual communication and management tool between nurses and Environmental Services (EVS) that tracked which rooms needed to be clean (red slip) or had been cleaned (green slip) (Robert Wood Johnson Foundation, 2008). After implementing this process, this Texas hospital saw turnover time decrease from over two hours, to an average of 40 minutes (Robert Wood Johnson Foundation, 2008).

Another study approached the issue of turnover from a logistics stand point. Brown and Cross (2010) looked at a regional hospital over a year's time. The study modified the prioritization of work for EVS and opened opportunities for frontline staff to have more information on which beds needed to be cleaned first (Brown & Cross, 2010, p. 98). The results saw a median room turnaround time decrease of 12% (Brown & Cross, 2010, p.101).

Lastly, Pellicone and Martocci (2006), in a New York hospital, worked on the technology in relation to room turnover to decrease overall turnaround time. They found that increased turnover time was not an inefficiency in EVS processes, but in communication regarding discharge readiness and cleaned, available rooms. All nurses involved in the discharge process were educated on the protocols and procedures of the bed tracking system-when to adequately document that patients had been given their discharge papers, and when the patients had

physically left the room (Pellicone & Martocci, 2006). This helped EVS more efficiently use time and resources. Additionally, admissions nurses were immediately notified through another technology component when the room was finished and cleaned by EVS. By improving the response times in communication on both sides of the process, the turnaround time at this hospital was reduced by 136 minutes over the course of six months (Pellicone & Martocci, 2006, p. 35).

However, each of these case studies track improvements for one year or less. There has been little research reviewing the long-term sustainment of improvements implemented from RIEs. Considering the high impact of these events and the rapidly changing environment of healthcare, it is easy to understand why they may no longer be tracked after the conclusion of the ninety-day period. The purpose of this research is to contribute to the ongoing conversation of the sustainability of RIEs.

Methodology

Referencing data and records from a Rapid Improvement Event (RIE) performed in 2014 at a 500-bed regional medical center (RMC) regarding "Room Readiness", this study looked at the current state of the process through the original indicators to determine what aspects have improved, changed, or foregone completely. The initial A3 from 2014 (see *Appendix B, C*), provided by the quality improvement team at the RMC, identified the initial problem statement as, "The rooms are not always ready in a timely manner. The cleanliness of the rooms varies widely, the necessary equipment is oftentimes not in the room, and there is no consistent use of standard work for cleaning a room with the Xenex." (*Appendix B*). There were three metrics identified which were tracked as leading indicators of the problem: percent of time the correct

materials were in the room, cleanliness of rooms audited with the Luminometer, and average discharge to clean time. Of those three metrics, the scope of this study allowed only one of those metrics, patient discharge to clean time, to be revisited.

Additionally, to better understand the current state, interviews were conducted with Environmental Services (EVS) management to review what technology and standards have changed since the original RIE. Observations of EVS staff were performed to better understand the standard work implemented and ensure that it was being followed without unforeseen barriers. Any changes were recorded and taken into consideration for final conclusions.

Data were collected over a two-week period in the RMC on patients who were admitted to the hospital. Time studies were collected from the moment a patient was marked as "ready for discharge" in Navicare to when the patient left, EVS cleaned the room, and the room was marked "clean" in Navicare. Any outlying data which were greater than three hundred total minutes were not included because the small number of occurrences skewed the data significantly. Background research on current best practices and average room turnover times was conducted to provide context on current state numbers.

After the current state was determined, a reconciliation was performed to see if the gaps identified in the original RIE and the solutions implemented were still represented in the current state. Then, taking into consideration any major unrepresented changes, conclusions of the sustainability of the RIE were drawn. Finally, recommendations for further action based on the conclusions were suggested.

Results

Analyzing the original "Room Readiness" A3, the RIE team found that the average room turnover time was 129 minutes (see *Appendix B*). After process mapping the current state, the team, primarily comprised of Environmental Services (EVS) personnel, identified gaps in the process (see *Appendix C*). There were two main gaps which were addressed. The first was the lack of standard work, which led to variability in availability of resources and cleanliness of rooms. The second was the lack of standard orientation and training for EVS employees newly hired. The second gap exasperated both issues, as well as increased discharge to clean times due to undereducated staff and wasted time spent looking for needed items. The solutions drawn and implemented were to develop and educate staff on new standard work, and to create a training room and visual management for staff to experience the expected outcomes and procedures (see *Appendix C*). With these solutions, the RIE team hoped to address the issue of searching for needed equipment and making sure appropriate equipment is readily available. The solutions were implemented, but there is unclear information as to whether follow up was conducted at thirty, sixty, and/or ninety days post-RIE.

Next, current state data were gathered from October 4th to October 18th, 2016 from the existing bed tracking system, Navicare, which allowed for in depth analysis of discharge to clean time over the two-week period. The process of room turnover began when the patient was marked "ready for discharge" in the Navicare system. From that time to when EVS acknowledged the room in Navicare, was recorded as the "response time". "Clean time" began as soon as the room had been acknowledged by EVS and ended when the room was marked "clean" in Navicare by EVS personnel. The total time from discharge to clean includes both the response time and the clean time. As shown in graph 1 (see *Appendix D*), total time from discharge to

room cleaned over this two-week period increased by 43 minutes or 33% from the original RIE in 2014. Total average room turnover time over this two-week period for the RMC was 172 minutes. The total average response time was 76 minutes. The total average clean time was 97 minutes. The greatest average room turnover time, 203.9 minutes, occurred on Saturday, October 15th. Lowest average room turnover time, 133.6 minutes, was on Wednesday, October 12th. Current state average room turnover time for a similar RMC is between 60 and 90 minutes (Brown & Cross, 2010). Results from October 10th, 2016 were excluded due to outlying data. Additional outliers greater than 450 minutes were excluded from the average turnover times. These data points were incorrectly logged into the Navicare system at the point of care due to technological barriers as communicated by EVS management.

Further analysis of the data showed that time of day and bed requests may be a contributing factor in room turnover time, as shown in graph 2 and graph 3 (see *Appendix E*). Average room turnover times decreased, on average, starting at approximately 8:00 AM and trending down to their lowest average at approximately 1:00 PM, and then begin trending upward again until approximately 7:00 PM when it is at one of the highest average turnover times at 182.6 minutes. Interestingly, demand for hospital beds correlates with room turnover time. The lowest demand for hospital beds is between 3:00 AM and 8:00 AM. Then there is a gradual increase to a peak at approximately 7:00 PM. There is also an isolated spike in bed requests at and right after midnight, during which the average room turnover time is abnormally high. This may indicate the need for a modified EVS schedule to properly anticipate demand. There was no substantial difference in terms of day of the week and number of bed requests.

In addition to the quantitative data, interviews with Environmental Services staff revealed many changes in the room cleaning process. First, new management was contracted in mid-2016.

Along with new management there entered a new leadership structure. Embedded within the hospital system is a dedicated training manager and onboarding process for new employees. The current onboarding process includes a week-long orientation with guided observations, side-by-side learning, competency checklists, and an extended mentorship program. Also, new technology is being utilized to ensure quality sterilization. In 2012, Virex 256, with a dwell time of 10 minutes, was applied on hard surfaces. However, Virex Plus has decreased dwell time to three minutes and improved efficiencies in clean time.

Similarly, the new ultraviolet light in the C-spectrum (UV-C) disinfection system, Surfacide, has drastically reduced room cleaning time from the previous technology, Xenex. Surfacide had an average clean time of 17- 23 minutes in early October 2016. Yet, there are only two Surfacide machines to service the entire 500-bed RMC. There is a dedicated EVS staff member who transports and operates the Surfacide machines for the RMC. Although not every room requires UV-C disinfection, comments from staff indicated that there may be enough demand to justify more than 2 machines. Standard work developed in response to the 2014 RIE was modified and replaced by a 10-step process in a visual management format (see *Appendix F*). The comparison between solutions implemented in response to the RIE and current day equivalents is outlined in a summary table (see *Appendix G*).

Discussion

Although many of the solutions from the original Rapid Improvement Event (RIE) have equivalents, or even improvements, from the original state, there was an increase of confounding factors in relation to room turnover time in the current state. However, the data is limited in significance because of the narrow data set and there are several potential factors which may have affected the data. For example, staffing of Environmental Services (EVS) during this time

may have been insufficient because October is a popular time for staff to request time off for fall break, particularly those with school aged children. It is equally likely that this period of time may have been particularly busy for the RMC due to the unofficial start of the flu season. Still, the question is posed as to what attributed to this increase in room turnover time.

The scope of this RIE was unclear in terms of what process the original event was addressing. The language in the original problem statement cites that "rooms are not ready in a timely manner". The starting point for the original event was indicated when the Navicare request for room cleaning was entered and ended when the room was marked clean by EVS. While the remainder of the problem statement centered around EVS work, the way room turnover time is measured accounts for some aspects which are beyond the control of EVS. For example, if a patient is marked ready for discharge and a Navicare request for room cleaning is entered, there can be a delay in when the patient has vacated the room and when EVS can enter the room to clean it. While the data may present that EVS took 90 minutes to clean the room, it may have been the case that the patient was in the room and did not leave until his/her ride came to pick him/her up 20 minutes later. The actual clean time of the room would be 70 minutes. However, the Navicare system would track the clean time as 90 minutes.

There is concern as to whether room turnover time was the correct leading measure to evaluate the effectiveness of the original RIE. If the scope of the original RIE was to improve efficiencies within the EVS department, then it is possible that this RIE addressed those issues and are operating at or above a similar level of quality and efficiency. However, the metric of room turnover time is not solely representative of this standard. If the scope of the original RIE was truly to improve room readiness for patient throughput of the hospital, then the entire process and stakeholders were not adequately represented in the original RIE. Physicians, nurses,

house supervisors, case managers, social workers, and EVS are all, at one point in the process, involved in the room readiness throughput process. The issue with increased room turnover time could be a problem with any number of communicable, technological, or logistical gaps in the process.

Conclusion

The determination of whether the "Room Readiness" Rapid Improvement Event (RIE) from 2014 produced long-term sustainable results depends on the definition of those results. In terms of carrying over solutions developed in the RIE, most every solution was represented in the current 2016 state. In this matter, there were sustainable results in standard work adherence, improved results in training initiatives, and advanced technology components for the Environmental Services (EVS) department.

However, the quantitative data originally chosen to measure the effectiveness of this RIE would not warrant this RIE a success from current state data. Further research needs to be conducted to determine first whether there is a significant variation in room turnaround time at the RMC with comparable facilities, and second, a more thorough analysis of the "patient marked ready for discharge" to "room marked clean" process is recommended. Considering this is a process that involves multiple stakeholders from many different disciplines in the organization, an RIE coordinated and facilitated by the quality improvement team is suggested. As is evident in the literature (Brown & Cross, 2010; Robert Wood Johnson Foundation, 2008; Pellicone & Martocci, 2006), there are different ways to approach the issue of room turnaround time. Regardless, efforts in this area can reduce waste of time and resources, enhance communication and coordination, and improve patient satisfaction and utilization. These studies suggest that the opportunity for improvement in this area is a worthwhile venture.

Regarding the matter of long-term sustainment of RIEs in general, it is important to note that, for clearer expectations of results, the scope and problem statement of the RIE must be clearly defined. Furthermore, metrics must be carefully chosen to accurately reflect the current state and any change in the process which will directly affect the data. Metrics which may be influenced by factors outside the scope of the process require harsher scrutiny. In order to avoid a similar issue with evaluating the long-term effectiveness of an RIE, these three factors must be carefully managed. Moreover, an end of year report is suggested for the quality improvement department. In the interest of ensuring invested time, resources, and work effort have lasting improvement, those RIEs which are high impact and identified by leadership as high priority in operations should be audited on a yearly basis.

The unique advantage of quality improvement operations in healthcare is the ability to streamline coordination between often siloed departments. RIEs help bring about an appreciation of the importance of each discipline in a complex process like room readiness. The end goal of providing safe, quality healthcare to each patient lies at the center of each RIE. In this matter, RIEs facilitate team building and foster diversity and empathy within healthcare organizations. Quality improvement departments work best when facilitating those projects which are across areas to better serve the overall system. Additionally, empowering management with those LEAN tools to take back to their own departments and champion their own improvement initiatives empowers staff to affect change within their own scope of practice. Continuous improvement fosters higher quality and safer patient care. In response to the dynamic healthcare field, sustainment and reevaluation of improvement initiatives should be the norm among healthcare organizations. The value in Rapid Improvement Events has been established in recent

years, however a call for more studies into how to best ensure their long-term sustainability is recommended to continue the discussion of sustainable quality improvement in healthcare.

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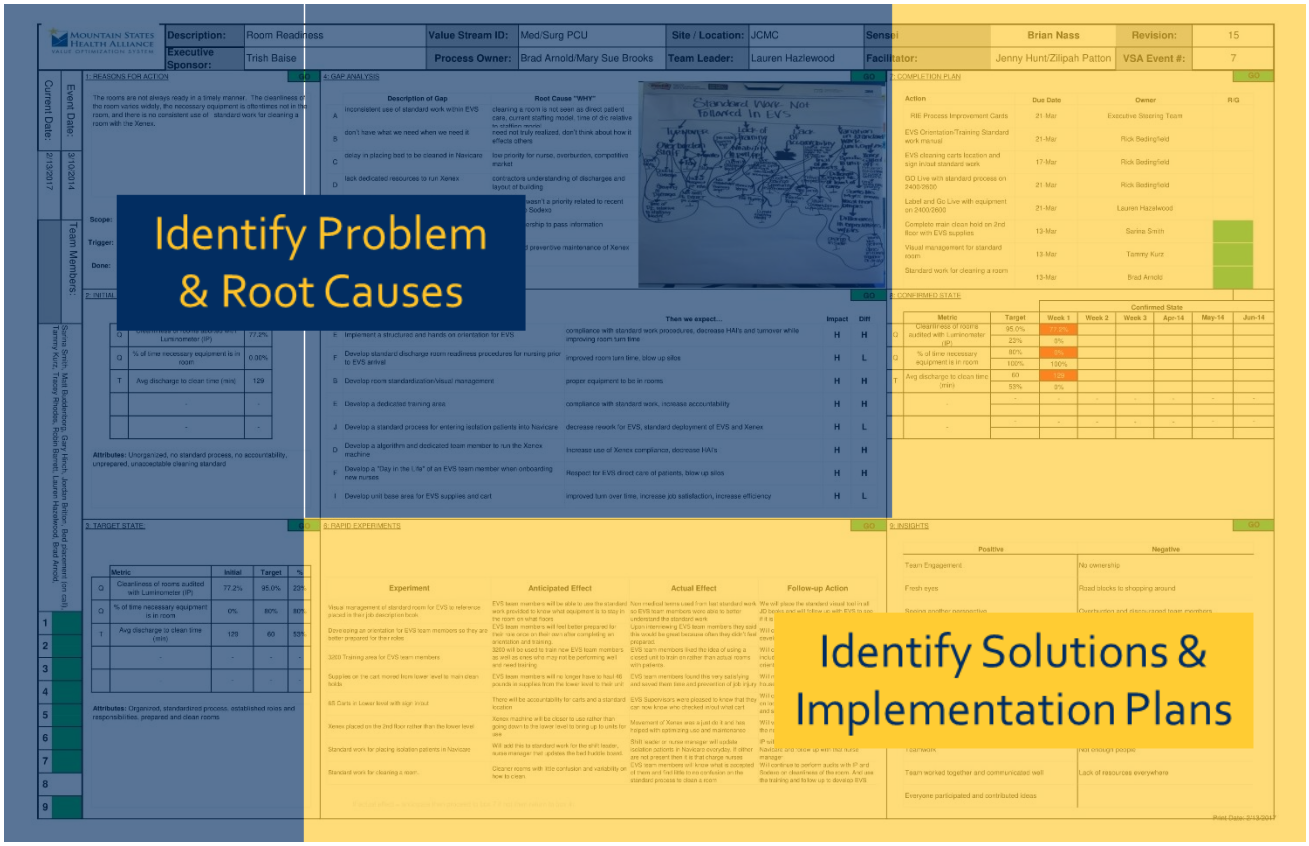
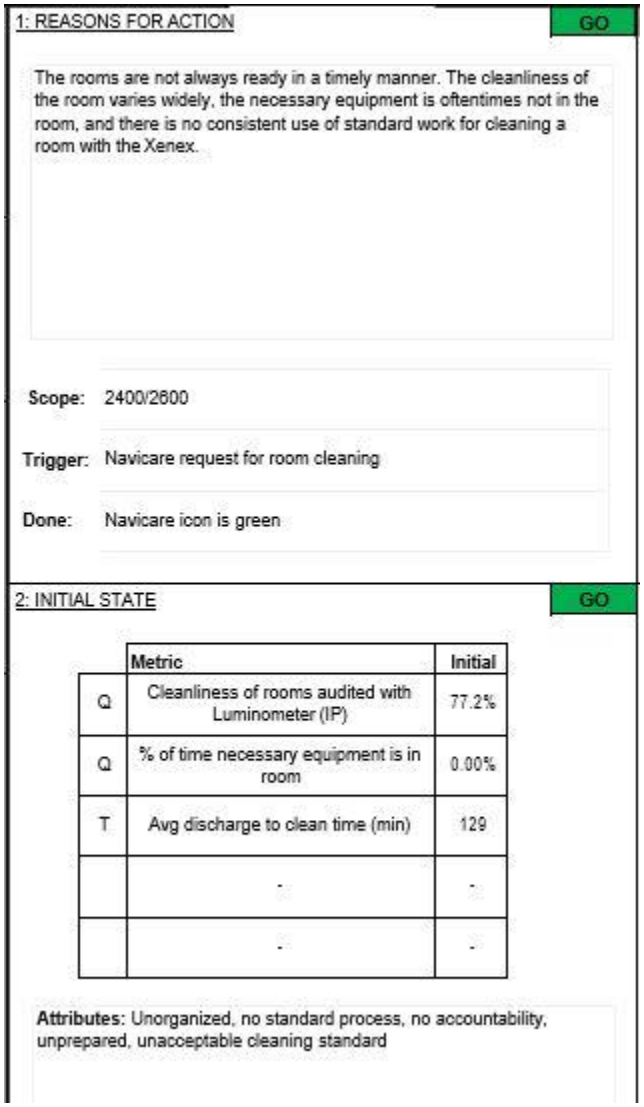
Appendix A

A3 Problem Solving Tool



Appendix B

A3-1: "Room Readiness" Rapid Improvement Event



1: REASONS FOR ACTION — GO

The rooms are not always ready in a timely manner. The cleanliness of the room varies widely, the necessary equipment is oftentimes not in the room, and there is no consistent use of standard work for cleaning a room with the Xenex.

Scope: 2400/2600

Trigger: Navicare request for room cleaning

Done: Navicare icon is green

2: INITIAL STATE — GO

	Metric	Initial
Q	Cleanliness of rooms audited with Luminometer (IP)	77.2%
Q	% of time necessary equipment is in room	0.00%
T	Avg discharge to clean time (min)	129
	-	-
	-	-

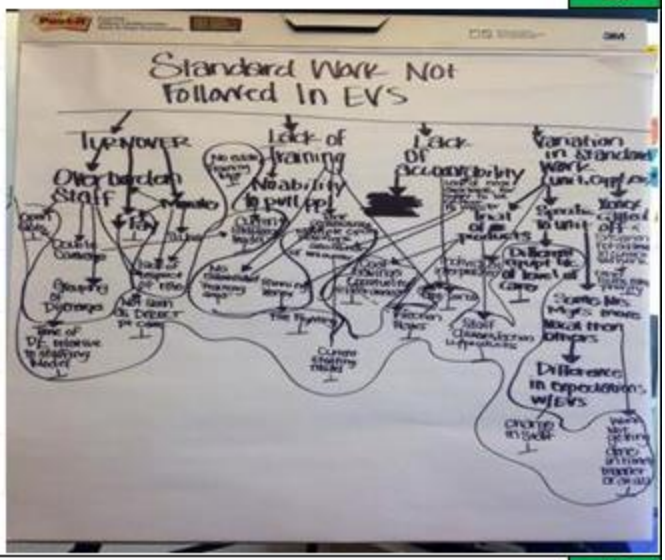
Attributes: Unorganized, no standard process, no accountability, unprepared, unacceptable cleaning standard

Appendix C

A3-2: “Room Readiness” Rapid Improvement Event

4: GAP ANALYSIS — GO

	Description of Gap	Root Cause "WHY"
A	inconsistent use of standard work within EVS	cleaning a room is not seen as direct patient care, current staffing model, time of d/c relative to staffing model
B	don't have what we need when we need it	need not truly realized, don't think about how it affects others
C	delay in placing bed to be cleaned in Navicare	low priority for nurse, overburden, competitive market
D	lack dedicated resources to run Xenex	contractors understanding of discharges and layout of building
E	inconsistent orientation for EVS	orientation wasn't a priority related to recent transition to Sodexo
F	Inconsistent orientation for nursing with room readiness	lack of ownership to pass information
G	significant downtime of Xenex machine	no standard preventive maintenance of Xenex

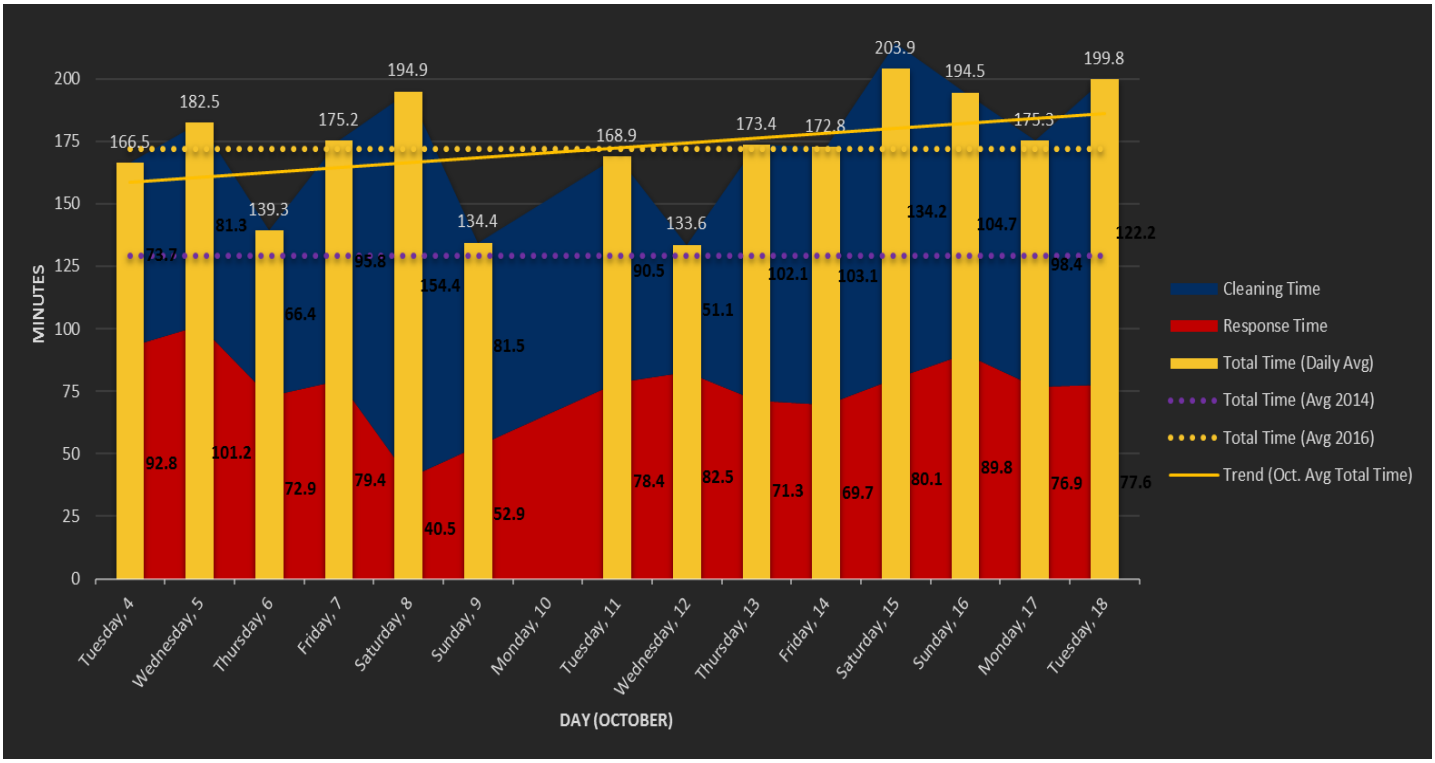


5: SOLUTION APPROACH — GO

Gap	If we.....	Then we expect...	Impact	Diff
E	Implement a structured and hands on orientation for EVS	compliance with standard work procedures, decrease HAI's and turnover while improving room turn time	H	H
F	Develop standard discharge room readiness procedures for nursing prior to EVS arrival	improved room turn time, blow up silos	H	L
B	Develop room standardization/visual management	proper equipment to be in rooms	H	H
E	Develop a dedicated training area	compliance with standard work, increase accountability	H	H
J	Develop a standard process for entering isolation patients into Navicare	decrease rework for EVS, standard deployment of EVS and Xenex	H	L
D	Develop a algorithm and dedicated team member to run the Xenex machine	Increase use of Xenex compliance, decrease HAI's	H	H
F	Develop a "Day in the Life" of an EVS team member when onboarding new nurses	Respect for EVS direct care of patients, blow up silos	H	H

Appendix D

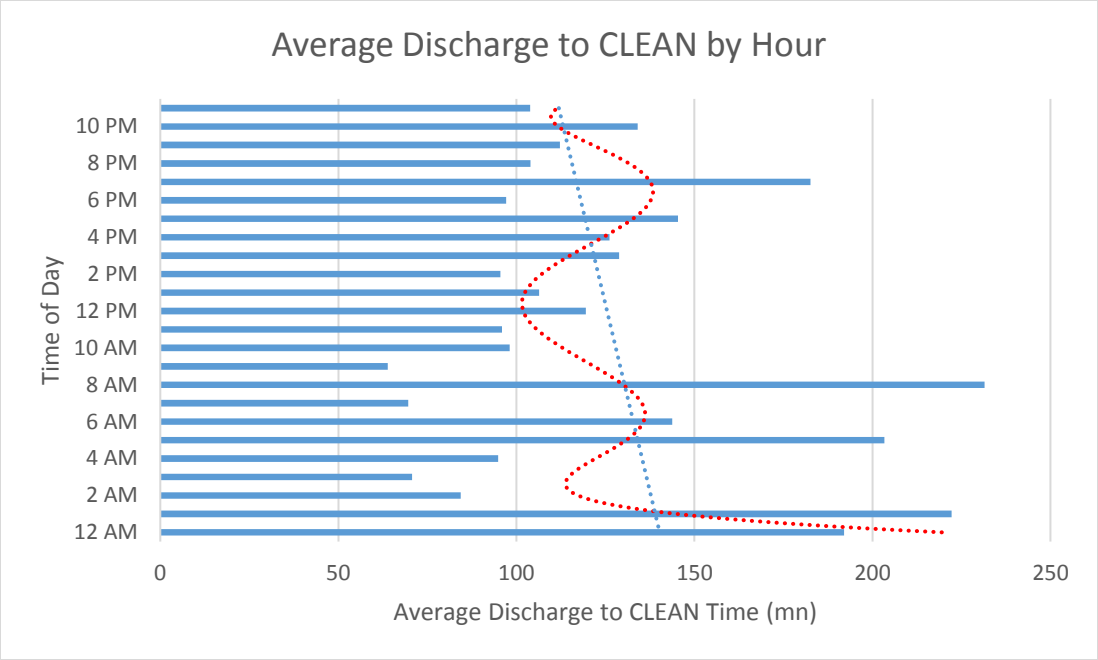
Graph 1: Room Turnover Time October 4-18, 2016



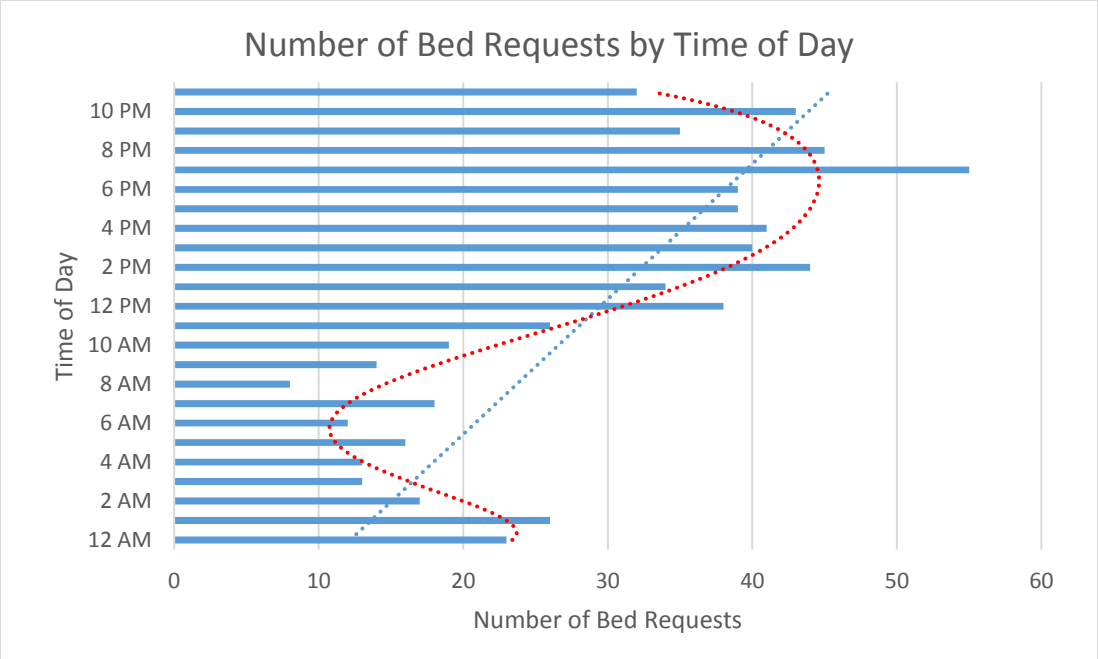
Outlying data from October 10th, 2016 were excluded.

Appendix E

Graph 2: Average Discharge to Clean Time by Hour



Graph 3: Number of Bed Requests by Hour



Appendix F

Figure 1: Standard Work for Environmental Services

Appendix G

Table: Results Comparison Summary

Technology	2014 State	2016 Comparison
Cleaning Technology	Xenex	Surfacide
Cleaning Agent	Virex 256	Virex Plus
Gap		
"Inconsistent use of standard work within EVS"	"Develop standard work for cleaning a room"	10- Step Process
"Lack dedicated resources to run Xenex"	"Develop an algorithm and dedicated team member to run the Xenex machine"	Dedicated person to operate and service Surfacide machines (2)
"Inconsistent orientation for EVS"	"Implement a structured and hands on orientation for EVS" "Develop a dedicated training area" "Develop a "Day in the Life" of an EVS team member when onboarding new nurses"	Dedicated training manager with 7-day training orientation
"We don't have what we need when we need it"	"Developed room standardization/visual management"	Picture Perfect Room
Outcome		
Room Turnover Time	129 minutes	172 minutes

Green- Equivalent or improvement
Yellow- Equivalent but still limiting
Red- Poorer