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Reducing CLABSI with Daily 2% CHG Wipes

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Clinical Nurse Leader Prospectus

University of San Francisco

Spring 2016

Abstract

This project aims to decrease central line associated bloodstream infections in pediatric patients my microsystem hospital. The process begins re-enforcing daily CHG (2% Chlorhexidine Gluconate) wipes to 100% compliance rates on our patients with central lines tailored to their age and body weights. The process ends with reducing the CLABSI rates of our unit and the entire hospital to 0. By working on the process we expect personal and organizational commitment to transform the culture of safety through integration of standardized communication, issue escalation, non punitive response to errors, rounding by all leaders, and culture of continuous improvement. It is important to work on this now because central line-associated bloodstream infections (CLABSI) needlessly afflict thousands of patients each year, lengthening hospital stays, and complicating the course of recovery.

Clinical Leadership Theme and Global Aim Statement

The Clinical Nurse Leader's (CNL) scope of practice entails providing direct patient care to a community of patients in complex situations. The nurse leaders are responsible for overseeing, coordinating, assessing and improving the delivery of evidence based practice (EBP). The ability to combine the needs of patients, staff, and health care stakeholders by facilitating care delivery universally enables the CNL to improve clinical processes, enhance healthcare delivery and outcomes, and meet the needs of a specific cohort of patients within a clinical microsystem. The CNL leadership theme highlighted in this prospectus is the implementation and management of care at the point of care to populations with mindfulness of risk anticipation/reduction, health promotion, and community tailored alterations.

This project aims to decrease central line associated bloodstream infections in pediatric patients my microsystem hospital. The process begins re-enforcing daily CHG (2% Chlorhexidine Gluconate) wipes to 100% compliance rates on our patients with central lines tailored to their age and body weights. The process ends with reducing the CLABSI rates of our unit and the entire hospital to 0. By working on the process we expect personal and organizational commitment to transform the culture of safety through integration of standardized communication, issue escalation, non punitive response to errors, rounding by all leaders, and culture of continuous improvement. It is important to work on this now because central line-associated bloodstream infections (CLABSI)

needlessly afflict thousands of patients each year, lengthening hospital stays, and complicating the course of recovery.

Statement of the Problem

Outcome measures play a critical role in addressing the quantifiable capability of a health care organization to develop top quality healthcare. Healthcare associated infections such as CLABSI are now striking increasing attention because insurance reimbursements and payments utilize measures in pay for performance programs such as the Hospital Acquired conditions reductions program and the value based performance program (Centers for Disease Control and Prevention, 2011).

According to the Joint Commission, it has been estimated that 80,000 CLABSIs occur in the ICUs in the United States each year; however if patients outside ICUS are also included, the estimate increased to 250,000 cases of CLABSI each year (Centers for Disease Control and Prevention, 2011). With the research behind CLABSIs pointing to easy resolutions with preventable measures, the necessity of adherence to evidence based guidelines are crucial in the insertion, maintenance, and care.

The impact of CLABSI is multifaceted causing an increase in the cost of healthcare as well as the cost of prolonged hospital stays. Based on statistics by the Center for Disease and Control (CDC), non-inflation adjusted costs associated with CLABSI have varied from \$2,700 per infection to \$26,441 per infection. A more recent CDC study has estimated that the cost of each CLABSI is \$16,550.

Nationally, hospital acquired infections such as CLABSI have gathered such momentum in an effort to track, report, and prevent blood stream infections. The National Healthcare Safety Network had a goal of reducing CLABSI's by 50% by 2013. As of 2014, CLABSI's are down nationally by 50 percent since 2008 (Centers for Disease Control and Prevention, 2016). These encouraging findings reflect the work of local, state, and federal government across healthcare professional partnership groups who have tackled head first CLABSI prevention efforts.

Despite significant focus and the implementation of nationally driven evidence based intervention bundles, Central line associated blood stream infections (CLABSI) still impact the patients and families. Central Line Associated Bacterial infections continue to be the single greatest contributor to the hospital acquired conditions (HAC) aggregate in my hospital's fiscal year 2015 as well as fiscal year 2014. Altogether, CLABSI's represented > 1/3 of the hospitals HAC's (37% in both FY15 and FY14). Hospital wide- the total number of Central Line Associated Bloodstream infections in 2014 was 50, whereas in 2015 it jumped to 56 total. There have been findings and trends inconsistent of practice for daily bathing and linen changes.

Project Overview

The goal of my particular hospital is to implement 90% of identified countermeasures associated with the primary root causes and or key drivers impacting

CLABSI to yield a sustained reduction in CLABSI's to ≤ 4 a per month by August 30, 2016.

The hospital utilizes house wide data dashboards, which collects live data from the electronic records to automatically compile a list of common CLABSI causes. The top causes of CLABSI from our "Deep Dive" were broken into the following findings: Insufficient barrier protection, frequent line access, sporadic bundle rounds, poor compliance w/ hub scrub/dry, inconsistent CHG bathing, inconsistent linen changes, active patients pulling lines/dressings, moving infusing IV tubing between central lines, cultures w/ no clinical suspicion of use, lines in diapers/at risk for contamination, replacement of fluids w/ line/tubing, central line migration, and poor practice for adhesion removal. With such broad categories, the CLABSI Steering Committee which is a multidisciplinary team dedicated to quality improvements decided to concise categories into more manageable targets. Hence, the CLABSI causes were compiled as Key Drivers. The final Key Drivers were broken down into: 1) Minimize frequency of line access, 2) Reduce risk of contamination (for both line and dressing), 3) Improve hygiene for both patients and providers, and 4) Increase reliability/frequency of bundle rounds. To find solutions, all Key Drivers were brainstormed and proposed with potential countermeasures, which would be need to be addressed and effectively applied in order to reach our goal of 90% implementation to yield sustainable results of ≤ 4 CLABSI's per month.

My particular portion of the project focused under the category of reducing the risk of contamination (to both line and dressing) by utilizing the potential countermeasure

of understanding and mitigating barriers to daily CHG bathing with subsequent linen and gown change. More specifically, my project encompasses the CLABSI rates and compliance rates of the patients on the acute care floors.

Rationale

The hospital currently implements Bundle Rounds for all hospital-acquired conditions. For CLABSIs, there are specific bundle round requirements that are checked every day to ensure the proper evidence based data is being performed by nurses and keeping our patients with central lines safe. The CLABSI bundle elements are comprised of the following to be checked for all patients daily with central lines 1) Line necessity reviewed, 2) Dressing clean, dry, intact, 3) Date on dressings, 4) All CL dressings not expired (<7days), 5) All caps not expired (<96 hours), 6) Line secured in clean environment, 7) Daily CHG bath, 8) CHG disc/transparent CHG dressing properly applied (if not appropriate, alternative product applied), 9) IV tubing/ fluids dated, not expired, and 10) 15s alcohol scrub/curos in place 1 minute before accessing line. Once the elements are checked, the CNS or CNL will note any barriers that were identified and the data is brought together weekly to update the general trends of the units.

The CLABSI bundle round has consistently shown in trends in the last couple years which result in action plans on our behalf. For this particular year, the data showed the 5 most common missed bundle element was Daily CHG baths with linen change (100%), IV tubing/fluids not dated, not expire at (84%), line necessity review (63%), date on dressing (46%) and 15 second alcohol scrub/Curos in place 1 minute before accessing line (30%). Other common missed bundle elements were dressing clean dry

intact,(24%) CHG disc/transparent dressing properly applied (11%), expired caps <96 hours (9%), line secured in clean environment (6%), and central line dressing not expired (3%).

Considering the top missed CLABSI element, as CHG wipes is a huge concern because this simple task actually makes a huge difference for our patients. Most nurses note that realistically it is hard to pick the particular number of wipes and maintain the wipes daily because of the multiple tasks they have to complete. Considering the cost of CHG skin preps are \$254.97 for 3 individually wrapped packages with 2 cloths per package. Each package comes in 3 packs with 2 clothes in each package for a total of \$8.47. Considering that our unit houses 10 patients and that not every single patient has a central line at any given time and that patients are not always pre-op patients, we can estimate that there is a \$8.47 cost of wipes per patient with a central line for at maximum 10 patients a day. The total would be \$84.70 a day in CHG wipes.

The discovery of CHG wipes in the incidence of CLABSIs in the United States is thought to represent as many as 6,000 lives saved and \$414 million in potential excess healthcare costs in 2009—and almost \$2 billion in cumulative excess costs since 2001 (Edgeworth et al, 2009).

To incorporate a well-rounded clinical picture, data analysis of CLABSI measures also utilized integration from the front line health care providers through surveys. Survey Monkey was used to identify bundle elements perceived as the most difficult to comply with, barriers to successful completion, and recommended countermeasures.

Looking at survey monkey results revealed from staff that the bundle elements and barriers to CLABSI bundle compliance were that nurses forgot (35%), “other” (17%), knowledge deficit (11%), staffing (11%), ongoing therapy (10%), high acuity of patients (8%), Not a priority (6%), inconvenient (5%), distractions (4%), limited by medical condition (4%), differing clinical opinion (1%), and perception (0%). Nurses also reported that performing the most challenging CLABSI bundle element to perform were the CHG baths (21%). The second most challenging CLABI bundle elements were performing a daily linen change (19%). The data compiled showed that the most likely barrier to completing CLABSI bundle elements was the high acuity (21%), “other” (14%), staffing (12%), differing clinical opinion (3%), distraction (3%), forgot (3%), knowledge deficit (3%), inconvenient (2%), limited by medical condition (2%), and not a priority (0%). When prompted for suggestions to addressing CLABSI Bundle Barriers, health care providers wanted to see increase staffing rated(21%) and policy and procedure change(12%). Spanning at the lower end of recommendations were education (3%), involving family in CHG baths (2%), and uncategorized (2%).

Results from both CLABSI Bundle rounds and survey monkey were reviewed at CLABSI Steering Committee, which is an entire hospital wide dedicated team from different disciplinary, units, and leaders working towards CLABSI prevention and improvement. Each month, representatives from each unit address the key drivers and how the countermeasures are working towards the goals, root cause analysis of active CLABSI infections on the units for learning opportunities, concerns from all healthcare teams, and collaboratively look at new and emerging evidence based data to support necessary changes for the hospital. Many of the countermeasures have actively worked

to reduce and solve our key drivers, but daily compliance with CHG wipes has still proven to be very difficult to achieve and been yet to be resolved since the integration of the CLABSI steering committee.

Methodology

To understand the methodology of the approach in change, we need to address the challenge of daily compliance rates for CHG wipes. Many front line health care providers find the task the most challenging due to the specificity of the task and also the time constraints with multiple patients who each require different dedicated care.

The policy “Skin Antisepsis using Chlorhexidine Gluconate (CHG) 2% was approved June 2015 by Lucille Packard Children’s Hospital Stanford and is required for patients undergoing surgical procedure and patients with central lines. Steps for the policy have contraindications for patients with sensitive skin, skin conditions, non-intact skin, wounds or burns. Also, those with known sensitivity or allergy to CHG, lumbar drain, infants receiving phototherapy, intraoral surgery, dental procedure/surgery, and EENT surgery or procedures with tonsillectomy and adenoidectomy.

For patients less than 10kg, 1 package is used which contain 2 cloths inside. The first cloth is applied on the child’s chest, both arms, back and neck. The second cloth is used on both legs (back and front), the buttocks, and groin area avoiding the genitals. Patient’s between 10 kg-30 kg requires 2 packages (with 4 cloths included) for their daily CHG wipe. The first cloth is on the child’s chest, both arms, and neck. The second cloth

on the back and buttocks. The third cloth for both legs (front and back), and the fourth on the child groin area avoiding the genitals. Patient's greater than 30kg use 3 packages (6 cloths each). The first cloth is on the child's chest, both arms, and neck. The second cloth on the right leg and the third cloth on the left leg. The fourth cloth is used on the back and the fifth cloth on the buttocks. The sixth cloth is on the child's groin area avoiding the genitals. The CHG wipes can be pre-warmed and should be followed by a clean gown and linen change after application.

Now that there is a general understanding of the process entailed to complete the daily CHG wipes, we can proceed to how we can better maximize time for the nurses to perform the task daily on patients with central lines. The nurses are educated and understand the importance, but the specific objective of the project is to formulate methods that allow the task to be simplified and completed every single shift. To create and cultivate a unit, which is receptive to a culture of change, required a methodology such as Kotter's Eight Step Model of Change. Working within a huge institution means that there are urgent projects constantly occurring in assuring quality improvements and striving towards patient centered care. Kotter's model works because it starts with establishing a sense of urgency which meant a dedicated an entire division of multidisciplinary CLABSI coalition and team which is represented by a CNS or nurse on each unit of the hospital. Collaboratively, our representatives monitor each unit and come together to form a huge guiding coalition with one vision- to decrease CLABSIs to zero in our hospital. We meet every month and are constantly doing bundle rounds and analyzing data from bundle rounds, front line nurses, patients, and ensuring all our key drivers for preventing CLABSI are being met with countermeasures. There is a huge

advocacy in empowering each unit to find what works and to share these methods house-wide. We utilize root cause analysis and patient scenarios to bring to light the issues we see on the units in terms of how infections are transmitted, what we can do to change this from happening again, and how we can better counteract future scenarios from occurring.

On our acute care units, we utilize short-term wins and use these as opportunities to reeducate the nurses and reinforce what we are doing correctly. There are goals set each month as a hospital to aim for less than a certain amount of CLABSI's and Hospital acquired conditions to track our movement and improvements in order to reach our goal.

Kotter's eight-step model of change demonstrates the direct correlation of the staff and healthcare team at my hospital microsystem progressing seamlessly, albeit not without challenges, along the track to less resistance from staff. For example, part of our CLABSI bundle establishes rapport with our direct bedside nurses. We enter the rooms of the patients with the nurse for the patient while assessing CLABSI bundle elements, and reviewing at bedside any missing components or barriers to tasks. With direct feedback, and a willingness to humbly exchange constructive feedback- we begin to foster a culture that is proactive towards improvement. Feedback can be tailored to barriers during the work shift that made time a huge constraint all the way to a simple missing Curoc cap on one port. It is small and large details in tasks such as these that we are constantly striving to acknowledge and correct to improve our status quo. Our data is the reflection of the ongoing checks and balances showcasing the shifting of attitudes to foster excellence among our staff for our patients. Once we have successfully achieved certain countermeasures and reached one aspect of our goals, we regroup and institutionalize

new changes and re evaluate new methods to strengthen our goals. As CNL's we truly use systems theory in the assessment, design, delivery, and evaluation of health care within complex organizations. Thus constantly striving for improvement through innovative team efforts.

Literature Review

Literature is full of abundance with evidenced based projects targeted at reducing the number of CLABSI's on the hospital units. With hospital acquired conditions being very preventable and delegating projects to truly provide champions who lead nurses and healthcare providers towards responsibility and action, there has been vast amount of improvements for health care strides.

(P) Population: Pediatric patients with CVCs

(I) Intervention: Daily 2% CHG wipes

(C): Comparison: Central line patients who do not receive daily CHG wipes

(O): Outcome: Reduction or 0% CLABSIs

Central line associated blood stream infections reduction has taken become a national health care priority with evidence in support of the vast change improvements in patient care. CLABSI reduction is simple in standard guidelines such as hand hygiene, proper insertion techniques, barrier precautions, CHG wipes, and patient/staff education

and compliance. Literature shows that CLABSI's in pediatric patients are associated with mean attributable costs of \$55,646 and additional length of stay of 19 days (Goudie et al, 2014). Neonates are associated with mean attributable cost of \$99,221 and length of stay of 31.5 days (Goudie, et al 2014). Lucille Packard's specific data suggests that patients who acquire a CLABSI in their own CVICU spend an additional 60 days in the hospital versus those who do not acquire a CLABSI. Preventable harms such as CLABSI's can have lasting effects on patients and families and also create unnecessary demand on the care delivery system, inefficiencies, and costs to the patient and the organization. For our particular countermeasure, utilizing an inexpensive CHG wipe daily can make tremendous differences in the outcomes for our patients.

In the PICU in King Abdulaziz Medical City, researchers conducted a study which utilized a collaborative effort in reducing central line associated bloodstream infections (CLABSI) in pediatric ICU at a tertiary hospital. By forming a CLABSI team with a multidisciplinary collaborative team approach which were made up of nurses, physicians and Infection Preventionists (IPs) together with measures initiated include: creation of a central line cart; standardizing practices using competency checklist; engaging the empowered staff to stop any unsafe practices and enforcing aseptic technique; shifting from scrubbing the hub to using an alcohol cap; and adding daily maintenance to the central line bundle (Balkhy et al, 2015) in a 24 month period showed CLABSI rates dropped to zero.

Long-term sustainability of zero central-line associated bloodstream infections is shown to be possible with high compliance with care bundle. A medical/surgical ICU in Kocaeli, Turkey utilized bundle of care, together with emphasis on high compliance, feedback, and policy enforcement. What worked to their advantage was the aspect of communication within the staff, which reinforced a culture of patient safety in the ICU. Infection rates remained zero for 38 months after the implementation (Hakko et al, 2015).

In a review of the impact of non-rinse skin cleansing with chlorhexidine gluconate on prevention of healthcare-associated infections and colonization with multi-resistant organisms. In 2012, Karki & Cheng were able to formulate that the use of non-rinse CHG application significantly reduces the risk of CLABSI, SSI and colonization with specific organisms such as vancomycin-resistant enterococci (VRE) or meticillin-resistant *Staphylococcus aureus* (MRA) due to the decrease of bacterial density in the skin.

A study by Popp et al, 2014 demonstrated true utilization of nurses at the front line modifying CHG wipes into CHG baths for patients with thermal injuries and hospital acquired infections by bathing with a 0.9% CHG solution in sterile water instead. When performed twice daily as part of routine care along with institutional HAI bundles, it showed vast improvements in CLABSI infections. By applying critical assessment skills towards a nurse-driven protocol, their ICU reaped the benefits by lowering their CLABSI rates to zero.

In randomized trial covering pediatric intensive-care units at five hospitals in the U.S. were randomly assigned a daily bathing routine for admitted patients older than 2 months. Patients were either standard bathing practices or using a cloth impregnated with 2% CHG, for a 6-month period. A total of 6482 admissions were screened for eligibility and findings showed that critically ill children receiving daily CHG bathing had a lower incidence of bacteraemia compared with those receiving a standard bathing routine (Milstoe et al, 2015).

Together, these examples truly exemplify the meaning of a standardized team effort in conjunction with policy reducing CLABSI rates. Each study implemented daily CHG wipes for their patients with central lines and diligently monitored the procedure with all the patients. Data outcomes were favorable and trial and error examples are beneficial to my project in terms of predicting complications and how to navigate successfully.

Timeline

My contributions to the CLABSI team at Lucile Packard Children's Hospital started in August 2015 when the implementations of daily CHG baths protocols were newly established. I started with initial education of the basic competencies and checking off nurses on the unit as they familiarized with the process. That following month, there were surveys that were distributed via Survey Monkey to all front line health care workers who noted the barriers and suggestions on to best implement daily CHG wipes for our patients. Their input in conjunction with daily bundle rounds

on each unit gave us a pool of data to shift through in order to compile our hospital trends.

Bundle rounds each morning meant visiting all our patients in the hospital who had central lines and reviewing their CLABSI elements were met. The report would generate from the previous night's electronic health records to indicate whether or not CHG baths were done as well as the accompanying linen change. If the CHG wipes were not documented, we were able to address this with the nurses as we went together bedside to check the patients central lines. This offered reminders and also addressed any concerns instantaneously.

To get a better sense of how the nurses were navigating their shifts, I would follow along different health care providers to see we could incorporate CHG wipes and linen changes while juggling a full task load from varying patient ratios. My task was to simplify the task of wiping each patient, which was difficult when you often had patients that required different numbers of wipes based on their weight. To incorporate references, there were ample visual posters to break down the process and sticker labels that were readily available to tape onto CHG wipe bags in order to bring them into the patient's room and be able to correctly cleanse the body.

Other mechanisms to encourage CHG wipes are the addition of a notification board on the door of all patients who have a central line. The sign on the door reads, "I have a central line, don't forget my daily CHG bath!" Visual reminders are also distributed along the staff workrooms; break rooms, bathrooms, and patient rooms in order to remind our nurses of the daily task.

The timeline of our data and trends in relation to CLABSI is documented from the daily bundle rounds of patients with central lines. The data is documented on a findings sheet, which note how many patients we visited on each unit with a central lines and a list of patients who were missing CLABSI bundle element components and a section for the bundle item(s) missed, barriers and a section for notes. We are currently still tracking our CLABSI trends. Incidences where there are occurrences of CLABSIs on the unit require an A3 report, which is essentially an incidence report that dives deep into the particular patient creating a case in which all units can learn from. We have actually seen a huge decrease in our CLABSI rates with ≤ 4 CLABSI's a month- our target goal. Nurses with reminder during bundle rounds are performing the daily CHG wipes, but there are struggles when patients refuse the wipes.

The next step in our timeline is to continue to leverage CLABSI Steering Committee to prioritize and deploy CLABSI related improvement efforts. At each monthly meeting, units are integrating lessons learned from literature based CLABSI A3's into overall house-wide improvements. Task forces are also created to complete A3 countermeasures as well and the process of continually modifying and improvement countermeasures repeats until we can reduce CLABSIs entirely.

Expected Results

The expectations of this project were to see a decrease in CLABSI rates on our units. Tracking the progress of the CLABSIs have been an ongoing process and hospital wide we have no yet achieved a goal of zero CLABSIs, but we have remained under our desired goal of <4 CLABSIs a month. Continual re-education

and reminders have not proved to be too successful, as the nurses understand the importance and the evidence behind the clinical component of CHG wipes. We are progressively working towards a culture of change where the daily CHG wipe becomes habitual and engrained in the daily work task. So far, with many methods and styles of integration, the process is still a work in progress to determine the best method to ensure compliance with CHG wipes. Currently, the bundle rounds continually give us feedback.

Nursing Relevance

The exploration and implementation of tackling compliance in daily CHG wipes on patients with central lines provides an interesting perspective into the hospital workflow. Nurses are frequently tackling a series of important tasks deemed critical in patient care, yet the constraints of every day work flow, patient needs, staffing, and timing can impede on what we all constitute as easy fixes to a healthcare wide problem. By addressing the multiple factors healthcare workers face in the front line to better simplify and encourage evidence-based data means changing a culture from within by positively acknowledging the needs of healthcare providers while reinforcing essential health care practice to empower an efficient and effective delivery of care.

The goal of my particular hospital was to implement 90% of identified countermeasures associated with the primary root causes and or key drivers impacting CLABSI to yield a sustained reduction in CLABSI's to ≤ 4 a per month by August 30, 2016. The hospital treats the pediatric population and is an acute care floor for

transplant patients. The methods used to implement the project was through daily CLABSI bundles, front line feedback, and integration of interactive feedback with bundle rounds will provide an opportunity for CLABSI champions to remind and communicate with nurses barriers to meeting CLABSI elements. The evaluation is trending in a positive light and we have seen decrease of CLABSI's to less than 4 a month. Our project is still actively going on and will continue to progress for as long as there are patients with central lines in the hospital. The leadership roles facilitate ongoing active committees to ensure the quality of healthcare and as a result the outcomes are always a constant strive towards improvements with changing factors such as new patients, new employees, new diagnoses, and many more uncontrollable aspects that health care settings evoke. The entire project has pointed towards sustainability through the standardized utilization of central line care through policies and protocols for direct patient care. CNS's on the unit will continually perform bundle rounds which utilize electronic health records to identify and prioritize risks for CLABSI patients. We are going to continually trend data collection from bundle rounds and send data to our quality improvement team to track improvements, setbacks, and revisions to our countermeasures. Continual monthly leadership meetings will regroup and look towards root cause analysis to provide insight into the modifications necessary to reach goal of zero hospital acquired CLABSI in a continual state.

Appendix

Appendix A: CHG Fast Facts



CHG Fast Facts:



When to use CHG Wipes:

- Give CHG bath 1 hour after routine bath
- Give daily CHG bath for every patient with a Central Line Venous Catheter
- Give CHG bath to a patient the night before surgery

Special Considerations:

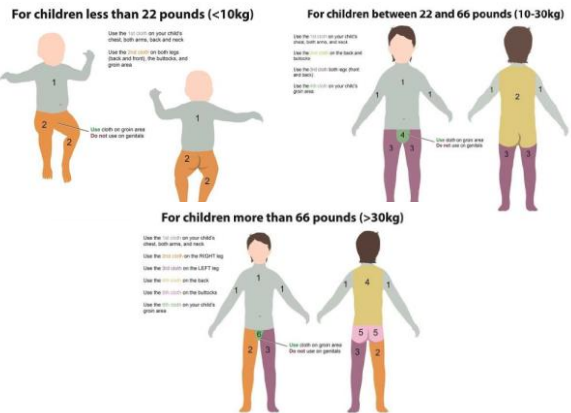
- Perform hand hygiene before and after administering CHG bath
- Only take wipes from the CHG warmer that are indicated as "ready"
- Discard dry cloths in the trash, DO NOT FLUSH
- RN or NA to document CHG application in EPIC under the Daily Cares section using the hygiene tab!

CONTRAINDICATIONS: DO NOT GIVE CHG BATHS TO THE FOLLOWING PATIENTS

- Infants <28 weeks adjusted gestational age
- Patients with sensitive skin, skin conditions, non-intact skin, wounds or burns
- Known sensitivity or allergy to CHG
- All patients with a lumbar drain
- Patients receiving phototherapy
- Intra-oral surgery, dental procedure-surgery






Number of Wipes Needed:

Patient Weight	# of Packages Used
Patient less than 10 kg	1 Package (2 cloths)
Patient 10kg to 30 kg	2 Packages (4 cloths)
Patient greater than 30 kg	3 Packages (6 cloths)

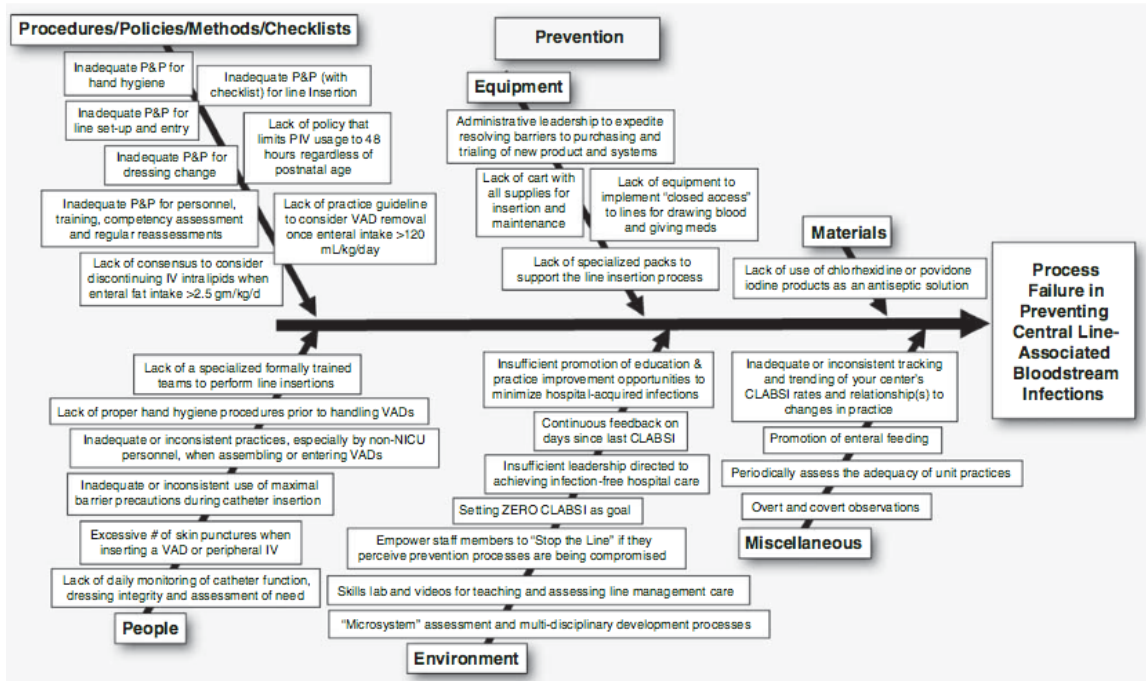


Appendix B: CLABSI Prevention Products

CLABSI Prevention Products

<u>Item</u>	<u>Order # or Stock Info</u>	<u>When/Why to Use</u>
Curoc Caps 	Located on Supply Carts	-Cover each neutron cap and port of your IV lines for infection control
Aqua Guard 	Central Supply Item# 98411 (only for 7x7 size)	-Used to keep dressing dry and moisture off of line during bathing and showering
MudFlap 	Central Supply Item# 224	-Used as a barrier to prevent bodily fluids from interacting with the line (i.e. emesis, drool, loose stools, etc.)
Griplock 	Located on Supply Carts Central Supply Item# 202067	-Used to secure the catheter from moving back and forth
Parafilm 	Special order by unit, alert manager when low in stock	-Used as a barrier to prevent bodily fluids from interacting with the line (i.e. emesis, drool, loose stools, etc.)

Appendix C: Fish Bone Diagram



Appendix D: Sample Bundle Rounds Documentation Sheet

BUNDLE ROUNDS DOCUMENTATION SHEET

Date: _____ Unit: _____ Name of Checker: _____ Rev. 10/14/15

Bundle Elements		BARRIERS <i>(These are the most common barriers that were identified, use the associated number on the grid below)</i>	Put tally marks each time you review a bundle, so we can capture the denominator		
			HAC	# of Pts Observed	# of Pts per Bundle Report
CLABSI	1) Line necessity reviewed	1) Differing clinical opinion			
	2) Dressings clean, dry, intact	2) Distractions			
	3) Date on dressings	3) Forgot			
	4) All CL dressing not expired (<7days)	4) High acuity			
	5) All caps not expired (<96hrs)	5) Inconvenient			
	6) Line secured in clean environment	6) Knowledge deficit			
	7) Daily CHG bath	7) Limited by medical condition			
	8) CHG disc/transparent CHG dressing properly applied. (If not appropriate, alternative product applied)	8) Not a priority			
	9) IV tubing/fluids dated, not expired	9) Ongoing therapy			
	10) 15s alcohol scrub/Curos in place 1 min. before accessing lines	10) Precepting			
SSI	1) Pre-op: regular bath	11) Staffing			
	2) Pre-op: CHG bath >1hr after regular bath	12) Other (free text)			
	3) Pre-op: CHG bath morning of surgery				
	4) Daily CHG bath				
	5) Daily linen/gown change				
	6) Abx given within 60mins of incision				
	7) Subsequent doses of abx given on time				
	8) Surgical dressing clean, dry, intact				
	9) Dressing removed 48hrs post-op				
	10) Sutures removed - after 10-14 days				
PU	1) Skin & age-appropriate Braden assessment document q shift				
	2) Use of pressure relieving device; position changed q2hrs				
	3) Wounds/PU documented in Epic				
	4) Device rotation per policy (sat probe q4h, CPAP)				

Use this grid to document the exceptions you observe while doing Bundle Rounds. Leave the completed sheet on your Visibility wall, Quality dept will enter the date for you. Each element of the bundle has a number so it's easier to document. See example below:

Patient MRN	Which bundle was checked?	Missed bundle elements:	Non- Bundle Risk Factors (free text)	Barriers:

Appendix E: Sample Bundle Round Report

CLABSI		<u>Line Necessity</u> X	<u>CHG Wipe</u> X	<u>Saline Check</u> X
		<u>Bath</u> Bathed - soap & water 2/14/2016 11:10	<u>Lines Change</u> 2/14/2016 11:10	
	Single Lumen Catheter 12/03/15 Upper, Anterior Chest	<u>last Drug Chg</u> 12/15/2015	<u>last Cap Chg</u> 12/16/2015	<u>Drug Activity</u> X
HAPU	O2 SAT Site Change	<u>Probe Site assessed/rotated</u> X		

3 EAST Bundle Count	
CLABSI	4
SSI	6
HAPU	8

Appendix F: CLABSI Monthly Updates Sept '15- Mar '16

Central Line Associated Blood Stream Infection (CLABSI) - Last updated 03/16/2016

Days Since Last CLABSI

8

PICU

Note: This is the number of days since a CLABSI occurred. The number is red if the CLABSI is confirmed within the last 7 days. Due to timing between occurrence and confirmation, the number can be greater than 7 and still be red.

To calculate: count 'day one' as the day after the event occurs and count up to the day before the current date.
 Days since last CLABSI information can be found on the [intranet homepage](#).

CLABSIs in the last 30 days:

HAC	Previous Month														Last 7 Days							Current Month to Date									
	15-Feb	16-Feb	17-Feb	18-Feb	19-Feb	20-Feb	21-Feb	22-Feb	23-Feb	24-Feb	25-Feb	26-Feb	27-Feb	28-Feb	29-Feb	1-Mar	2-Mar	3-Mar	4-Mar	5-Mar	6-Mar		7-Mar	8-Mar	9-Mar	10-Mar	11-Mar	12-Mar	13-Mar	14-Mar	15-Mar
CLABSI	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1

*Hospital-wide - Central Line Associated Bloodstream Infection (CLABSI) Rate

Date	CLABSI Rate (Per 1000 Line Days)	Central Line Days
02/04/2016	1.2	2200
02/05/2016	3.0	2500
02/06/2016	1.4	2300
02/07/2016	1.8	2100
02/08/2016	1.3	2400
02/09/2016	1.1	2600
02/10/2016	3.3	2400
02/11/2016	1.5	2300
02/12/2016	1.8	2500
02/13/2016	1.2	2200
02/14/2016	1.5	2400
02/15/2016	2.7	2300
02/16/2016	2.3	2500
02/17/2016	2.9	2400
02/18/2016	3.3	2600
02/19/2016	1.8	2300
02/20/2016	2.1	2400
02/21/2016	1.5	2200
02/22/2016	1.8	2300
02/23/2016	1.2	2100
02/24/2016	1.5	2200
02/25/2016	1.8	2300
02/26/2016	1.5	2200
02/27/2016	1.8	2300
02/28/2016	1.5	2200
02/29/2016	1.8	2300
03/01/2016	1.5	2200
03/02/2016	1.8	2300
03/03/2016	1.5	2200
03/04/2016	1.8	2300
03/05/2016	1.5	2200
03/06/2016	1.8	2300
03/07/2016	1.5	2200
03/08/2016	1.8	2300
03/09/2016	1.5	2200
03/10/2016	1.8	2300
03/11/2016	1.5	2200
03/12/2016	1.8	2300
03/13/2016	1.5	2200
03/14/2016	1.8	2300
03/15/2016	1.5	2200

Central line-associated bloodstream infections (CLABSI) are laboratory-confirmed primary bloodstream infections that are not secondary to a community-acquired infection or a hospital-acquired infection at another body site.

The Infection Prevention & Control (IPC) Department monitors all blood culture results and evaluates positive blood cultures for CLABSI using the CDC/NHSN CLABSI criteria. Once a CLABSI is identified, IPC collaborates with unit leadership to investigate potential causes for the CLABSI and uses this information to develop and implement CLABSI prevention measures.

Appendix G: Root Cause Analysis Lessons

CLABSI RCA Lessons Learned - January 2016

Findings and Trends	Countermeasures
Frequent accessing of lines for PRN medications and lab draws	<ul style="list-style-type: none"> • Consider PIV if frequent PRN medications are being provided • Consider batching lab draws or peripheral sticks to protect the line
Hand hygiene is not consistently performed	<ul style="list-style-type: none"> • Emphasize importance of hand hygiene among providers and patients • Increase coaching opportunities to improve hand hygiene technique

Lessons learned are the contributions from the monthly CLABSI CAUTI committee meetings. These lessons learned come from the deep dives performed by unit staff on every CLABSI and CAUTI to identify root causes. Our intention in sharing these lessons is to inform staff of potential solutions and prevention methods.

CLABSI RCA Lessons Learned - February 2016

Findings and Trends	Countermeasures
Inconsistency in hand hygiene practice	<ul style="list-style-type: none"> • Emphasize importance of hand hygiene among providers and patients • Peer to peer coaching to improve hand hygiene technique • Engage patients and families in hand hygiene education as it relates to CLABSI prevention
Limited access to supplies at bedside	<ul style="list-style-type: none"> • Ensure availability and accessibility of supplies needed to appropriately maintain lines (Curoc, barrier protection, securing devices, etc.)
Variability of line placement and security	<ul style="list-style-type: none"> • Look at ways to secure lines to keep them out of diaper areas such as using Grip Lock or other devices • Use of barrier drape for lines placed below the waist • Unit leadership evaluating standards for location of line placement

Lessons learned are the contributions from the monthly CLABSI CAUTI committee meetings. These lessons learned come from the deep dives performed by unit staff on every CLABSI and CAUTI to identify root causes. Our intention in sharing these lessons is to inform staff of potential solutions and prevention methods.

CLABSI RCA Lessons Learned - December 2015

Findings and Trends	Countermeasures
Inconsistent practice for daily bathing and linen changes	<ul style="list-style-type: none"> Follow standards outlined in Infection Prevention and Control Policy: Antisepsis using Chlorhexidine Gluconate (CHG) 2%, which indicates daily bathing by the RN with CHG 2% wipes for inpatients with a central venous catheter, followed by linen and gown change
Line labels not accessible during line set up	<ul style="list-style-type: none"> Unit leadership evaluating accessibility of supplies needed to appropriately label lines
Patients actively trying to remove central line dressing	<ul style="list-style-type: none"> Provide tools and tips to parents to engage them in helping to manage central lines in active patients Encourage routine patient hand washing to minimize risk of contamination

Lessons learned are the contributions from the monthly CLABSI CAUTI committee meetings. These lessons learned come from the deep dives performed by unit staff on every CLABSI and CAUTI to identify root causes. Our intention in sharing these lessons is to inform staff of potential solutions and prevention methods.

CLABSI RCA Lessons Learned - November 2015

Findings and Trends	Countermeasures
<p>Key elements of evidence based CLABSI prevention bundle not performed</p>	<ul style="list-style-type: none"> • Review line necessity daily • Ensure the dressing is clean dry and intact • Date all dressings • Change dressings per policy (sq7 days) • Change caps per policy (sq96 hours) • Secure the line in clean environment • Apply the CHG disc/CHG transparent dressing (if appropriate) • Ensure IV/Tubing is dated • Ensure Curois in place 1 min (or scrubbing/drying hub) prior to accessing the line • Perform hand hygiene • Perform a daily CHG bath w/subsequent linen change
<p>Frequent accessing of lines for PRN medications and lab draws</p>	<ul style="list-style-type: none"> • Consider PIV if frequent PRN medications are being provided • Consider batching lab draws or peripheral sticks to protect the line

Lessons learned are the contributions from the monthly CLABSI CAUTI committee meetings. These lessons learned come from the deep dives performed by unit staff on every CLABSI and CAUTI to identify root causes. Our intention in sharing these lessons is to inform staff of potential solutions and prevention methods.

CLABSI RCA Lessons Learned - October 2015

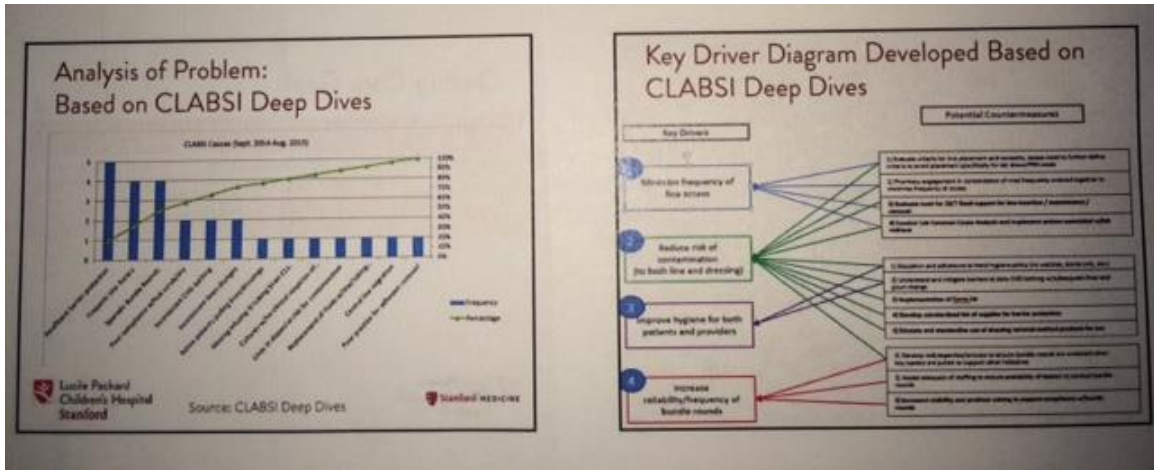
Findings and Trends	Countermeasures
Inconsistent practice for daily bathing and linen changes	<ul style="list-style-type: none"> Follow standards outlined in Infection Prevention and Control Policy: Antisepsis using Chlorhexidine Gluconate (CHG) 2%, which indicates daily bathing by the RN with CHG 2% wipes for inpatients with a central venous catheter, followed by linen and gown change
Inconsistent usage and placement of Curot Jet caps	<ul style="list-style-type: none"> Curot recommends placement of Curot Jet caps on all ports; The Curot representative will be onsite on November 24th to conduct audits and to provide coaching and education based on findings
Frequent accessing of lines for PRN medications and lab draws	<ul style="list-style-type: none"> Consider PIV if frequent PRN medications are being provided Consider batching lab draws or peripheral sticks to protect the line

Lessons learned are the contributions from the monthly CLABSI CAUTI committee meetings. These lessons learned come from the deep dives performed by unit staff on every CLABSI and CAUTI to identify root causes. Our intention in sharing these lessons is to inform staff of potential solutions and prevention methods.

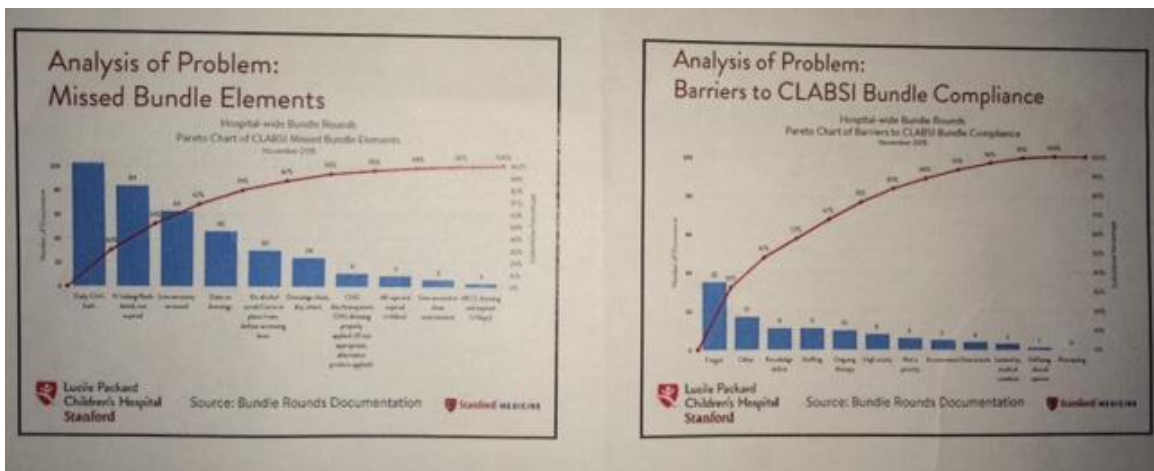
CLABSI RCA Lessons Learned - September 2015	
Findings and Trends	Countermeasures
Lines placed below the waist susceptible to contamination	<ul style="list-style-type: none"> Standardized utilization of steri-drape during dressing changes for protection of lines at-risk of stool contamination.
Inconsistent practice for daily bathing and linen changes	<ul style="list-style-type: none"> Follow standards outlined in Infection Prevention and Control Policy: Antisepsis using Chlorhexidine Gluconate (CHG) 2%, which indicates daily bathing by the RN with CHG 2% wipes for inpatients with a central venous catheter, followed by linen and gown change
Line occluding multiple times prompting several uses of tPA	<ul style="list-style-type: none"> If line continues to occlude post utilization of tPA, escalate for discussion with the provider to determine next steps

Lessons learned are the contributions from the monthly CLABSI CAUTI committee meetings. These lessons learned come from the deep dives performed by unit staff on every CLABSI and CAUTI to identify root causes. Our intention in sharing these lessons is to inform staff of potential solutions and prevention methods.

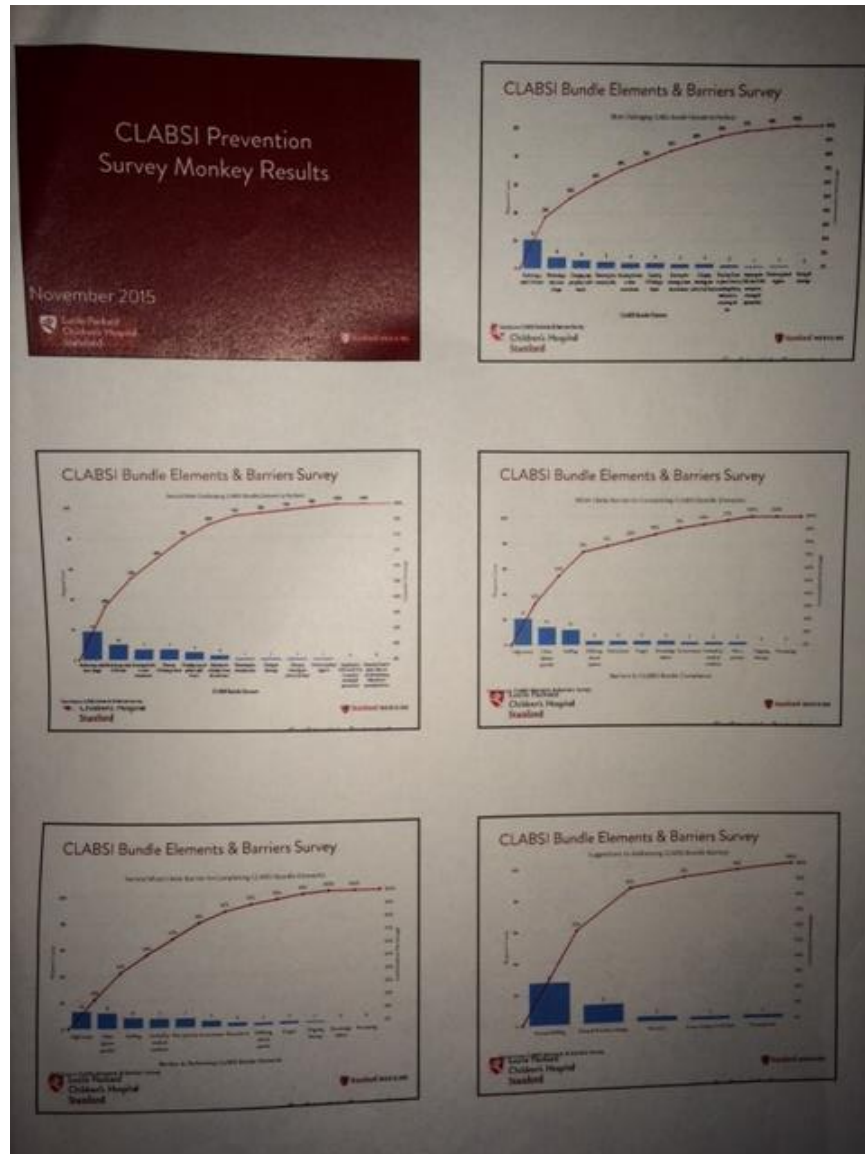
Appendix G: Key Driver/Counter Measures



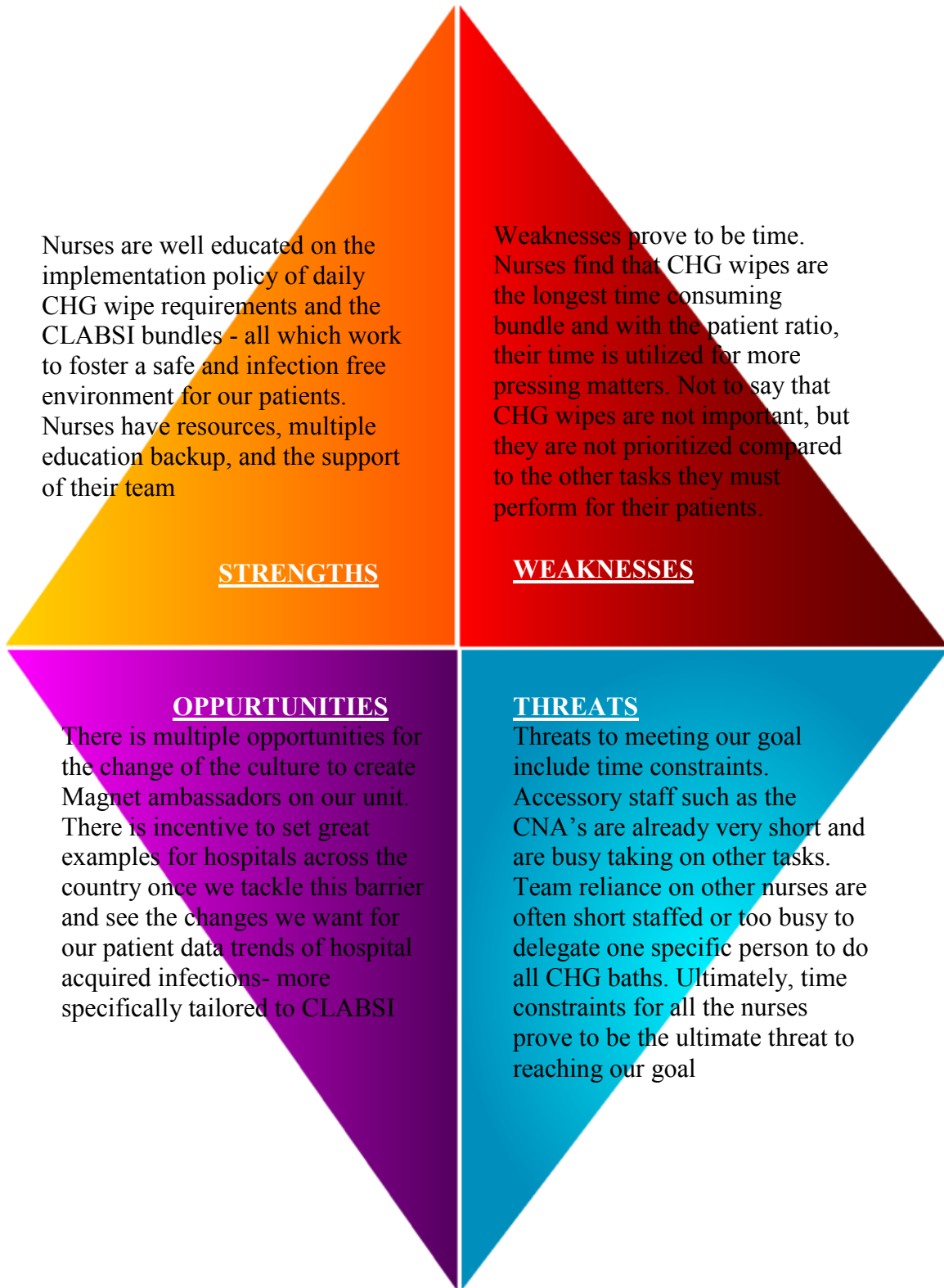
Appendix H: Bundle Compliance



Appendix I: Survey Monkey Results



Appendix J: SWOT Analysis



Nurses are well educated on the implementation policy of daily CHG wipe requirements and the CLABSI bundles - all which work to foster a safe and infection free environment for our patients. Nurses have resources, multiple education backup, and the support of their team

STRENGTHS

Weaknesses prove to be time. Nurses find that CHG wipes are the longest time consuming bundle and with the patient ratio, their time is utilized for more pressing matters. Not to say that CHG wipes are not important, but they are not prioritized compared to the other tasks they must perform for their patients.

WEAKNESSES

There is multiple opportunities for the change of the culture to create Magnet ambassadors on our unit. There is incentive to set great examples for hospitals across the country once we tackle this barrier and see the changes we want for our patient data trends of hospital acquired infections- more specifically tailored to CLABSI

OPPURTUNITIES

THREATS

Threats to meeting our goal include time constraints. Accessory staff such as the CNA's are already very short and are busy taking on other tasks. Team reliance on other nurses are often short staffed or too busy to delegate one specific person to do all CHG baths. Ultimately, time constraints for all the nurses prove to be the ultimate threat to reaching our goal

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