Asking BEFORE Accessing: Increasing Patient Safety While Decreasing Central Line Utilization

CHI Health Lakeside Hospital

July 29th 2021

16909 Lakeside Hills Court

Omaha, Nebraska 68130

402-717-8335

Jennifer Baumert DNP, RN-BC, OCN and Mariah Gesink MPH

Jennifer.Baumert@commonspirit.org

Mariah.Gesink@commonspirit.org

Leadership/Planning

CHI Health Lakeside has a very strong Shared Governance mentality. When making core decisions, it is essential to have the right people at the table, and ensuring that nursing has a voice is a pivotal component. Hospital Administration encourages autonomy, and encourages staff to enact positive change at the bedside.

Lakeside's focus is patient centered, striving for excellent and quality patient care in all processes. Staff are encouraged (through unit based councils) to bring forth ideas, and recommendations – often with plans to trial a process and make changes as necessary. The ideas and subsequent changes enacted by the Central Line Associated Blood Stream Infection (CLABSI) taskforce is a perfect example of staff identifying a problem, and seeking solutions, which led to significant results. The process of working to reduce CLABSIs through judicious use of central lines, and limiting port access could be considered controversial, out of the box thinking, but it has proven to be successful. Lakeside Administration has reviewed the process and results of the CLABSI taskforce, remains committed to quality patient care, and has provided 100% support to this ongoing work.

This project was not without challenges regarding stakeholder buy-in and change in practice. The concept of not accessing a port for convenience, and not using all central lines for easy lab draws was considered alarming by some providers, and concerning for patient satisfaction. It is the convenience based attitude that can lead to a culture that often minimizes the risks associated with central venous access. Lakeside Administration remained steadfast in their commitment to this project, often assisting in having tough conversations with some providers who were opposed to this new practice standard. Lakeside Administration made it known that this project had their full support, while delegating authority to key staff members.

Process of Identifying Need

In the Spring of 2016, the nurses on the Oncology unit became very concerned about a significant uptick in central line infections. While there was a rise in the number of central line infections nationwide, any number above zero was unacceptable to this team. The hospital Clinical Practice Coordinator, three Oncology Nursing Supervisors, the Oncology Operations Director, the hospital Infection Prevention specialist, and the Emergency Department educator all collaborated to form a 'CLABSI taskforce' to meet and quickly identify where the areas of opportunity were and to make quick, positive changes.

Central Line infections that had been occurring were reviewed for any correlations and learning opportunities. At that time, the FY2016 Standardized Infection Ratio (SIR) was 2.55 and the Standardized Utilization Ration (SUR) was 1.54. Due to these rates, the team decided immediately to start limiting who was able to access these lines, and for what reasons. Several articles on central line infections and care of the central line were reviewed, which supported this decision.

Process Improvement Methods

The CLABSI taskforce increased the frequency of central line audits from twice weekly to twice a day (once per shift), and worked to make the audits much more robust. The thought process behind this was that increased vigilance would help lead to a decrease in errors. After a full year of compliance, audits were decreased to once daily and detailed in an ongoing spreadsheet for ease of comparison and verification of compliance (Appendix A).

Daily rounding by Infection Prevention became an opportunity for staff to ask questions and seek clarification on current practices. This time, along with daily interdisciplinary care rounds, allowed for staff to question the need for certain lines, and collaborate with other experts.

Verbiage was changed on Chlorhexidine Gluconate (CHG) ‘baths’ to CHG ‘treatments’ to eliminate confusion for patients whose first reaction is to refuse anything deemed ‘unnecessary’. The process for this treatment was then changed from a nursing assistant responsibility to a nursing responsibility, to re-emphasize the treatment component.

Hospital Medicine Physicians agreed to help educate non-compliant patients, and re-inforce nursing teaching about proper central line access, CHG treatments, and care. A patient education pamphlet was drafted to educate patients (especially those with ports) about what a central line infection is, risks associated with it, and when it is medically appropriate to use a central line. The director of the lab agreed to partner with staff to have their phlebotomists draw all lab draws peripherally (and not via a central line), unless deemed appropriate to do otherwise by staff.

Staff collaborated with Radiology and their colleagues in the Emergency Department to ensure that patients, regardless of inpatient or outpatient status, heard the same message and understood the rationale behind the change in practice for accessing their port. There was concern that patients would have difficulty understanding why some practices differ in inpatient and outpatient environments. This collaboration allowed all staff to be able to answer questions patients may have and speak to the newly adapted process.

This committee re-educated all staff via a mandatory inpatient nursing skills day to change their way of thinking regarding central lines. Rather than using these lines for convenience purposes, staff needed to be ‘asking before accessing’. This committee developed an algorithm (Appendix B) to guide staff as to when it is appropriate to access a line. The algorithm helped to guide staff to the thought that there are times when a central line/accessing a port is the most appropriate course of action, yet there are many times when it is not. Staff must

take into consideration platelet counts, nutrition needs and possible chemotherapy when making access decisions for patients. Staff were educated on this process, as well as required to demonstrate a proper central line dressing change at the above mentioned skills day. 'Phone buddies' were also implemented to encourage handoff communication and to prevent the reflex of answering one's phone while performing central line cares. All central lines/dressings were also reviewed by two nurses upon arrival/transfer to a new unit to review dressing integrity, placement necessity and previous cares.

The process of asking before accessing was initially met with resistance by some physicians. Education was provided based on research obtained, and collaboration with Infection Disease, Surgery and other medical specialists which supported this change in practice. Patient preference is still respected, however with education regarding the 'why' to limiting central line and port access, a vast majority of patients fully support using peripheral access when appropriate. While this project initially was piloted on the Oncology unit, it quickly disseminated hospital-wide.

Results

While the work of this taskforce remains on-going and relevant, the continuous sustainability has been noticed. Data from FY16 was very sobering to the taskforce, the hospital had a SIR of 2.55 and a SUR of 1.54. Rates did not improve much during FY17, the SIR was 2.61 and SUR was 1.38, as the project was just in its infancy and gaining traction. Despite the struggle of not having instantaneous positive results, the work continued. FY18 was when the data started to reflect the positive efforts being made. FY18 had a SIR of 0.0 and a SUR of 0.93. FY19 showed one CLABSI, despite all best efforts, and yielded a SIR of 0.38 and a SUR of 0.76. FY20 showed progress sustainment with a SIR of 0.0 and SUR of 0.65. Despite the

challenges with COVID, staff continued on with this work to reduce blood stream infections, even in the very sickest of patients, yielding a SIR of 0.0 and SUR of 0.66 (Appendix C).

Audit compliance focused on appropriate central line indication documentation and review with a provider. Supervisors also reviewed if a CHG treatment and proper site assessment was documented. The supervisor also inspected the dressing themselves, confirmed a valid dressing change date, patency and all other infection prevention measures were completed. Staff showed consistent compliance in the 93-96 percent range since project implementation.

Currently, this hospital has achieved over 900 continuous days CLABSI free, and over 1500 days with one CLABSI. Patients were surprisingly accepting of this change in practice with the majority patients agreeing to a peripheral line, rather than using their central line for 'convenience'.

Lessons Learned, Replicability, Sustainability

While this process has already spread to all inpatient areas of Lakeside, it was not without its learning curves. The necessity of having staff and provider buy-in cannot be overstated. It was the bedside staff that rose to the challenge, helped to organize and educate the entire inpatient nursing staff, and worked to educate patients on the importance of this issue. Initially staff was reluctant to increase central line audits so significantly, however once the 'why' was explained, the resistance level dramatically decreased. This could not be a 'check the box' type of audit, but rather needed to be hands/eyes on, and robust- always asking 'why'?

This project was something vastly new and different than anything staff had attempted before. Taskforce members wondered if they would see results, and if so, how long would it take to show significant change? How would staff react to 'mandatory education'?

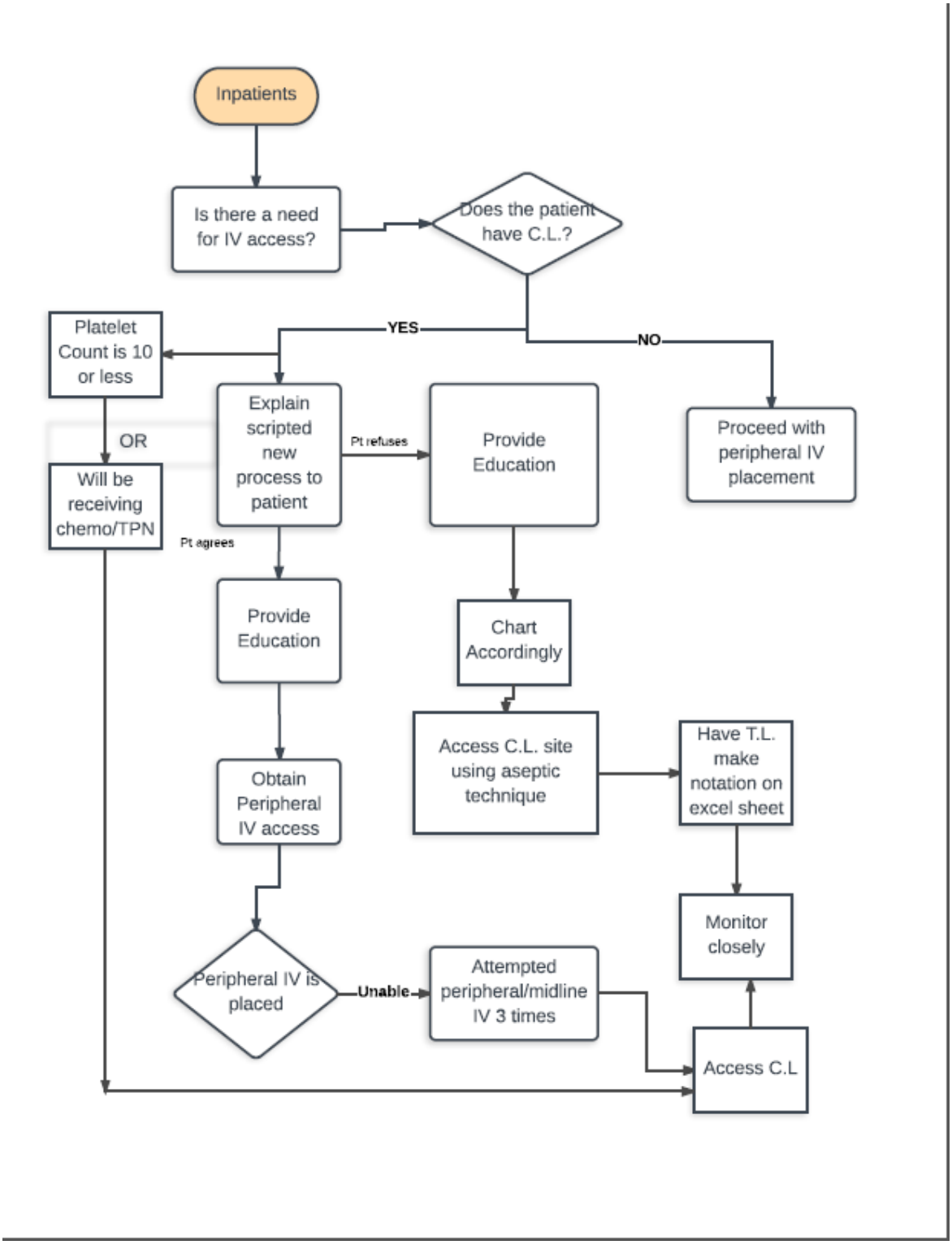
The sustainment of this project lies in the results that have been achieved. Staff are again taking pride in their quality indicator numbers and are actively working to help maintain them. All staff have developed a 'questioning attitude' leading to further education and increased buy-in from both staff and patients. Audits will continue to be done on a daily basis, however with a more streamlined recording system, additional responsibilities on the team lead, has been greatly reduced. Team leads will continue to encourage staff to question at daily interdisciplinary care rounds if the need for the central line is still present, and to ensure proper maintenance care is performed.

Five years later, this taskforce has integrated with the Hospital Acquired Infection committee and meets to review close calls and infections when necessary. Areas of opportunity to increase vigilance and great catches are still monitored and discussed daily (Appendix D). Key membership for this project now includes the hospital Chief Medical Officer (CMO), Chief Nursing Officer (CNO), Infection Preventionist (IP), and the Nursing Practice Coordinator. While staff continue to hold the line with day to day practices regarding central lines, certain situations arise requiring an escalation to key members.

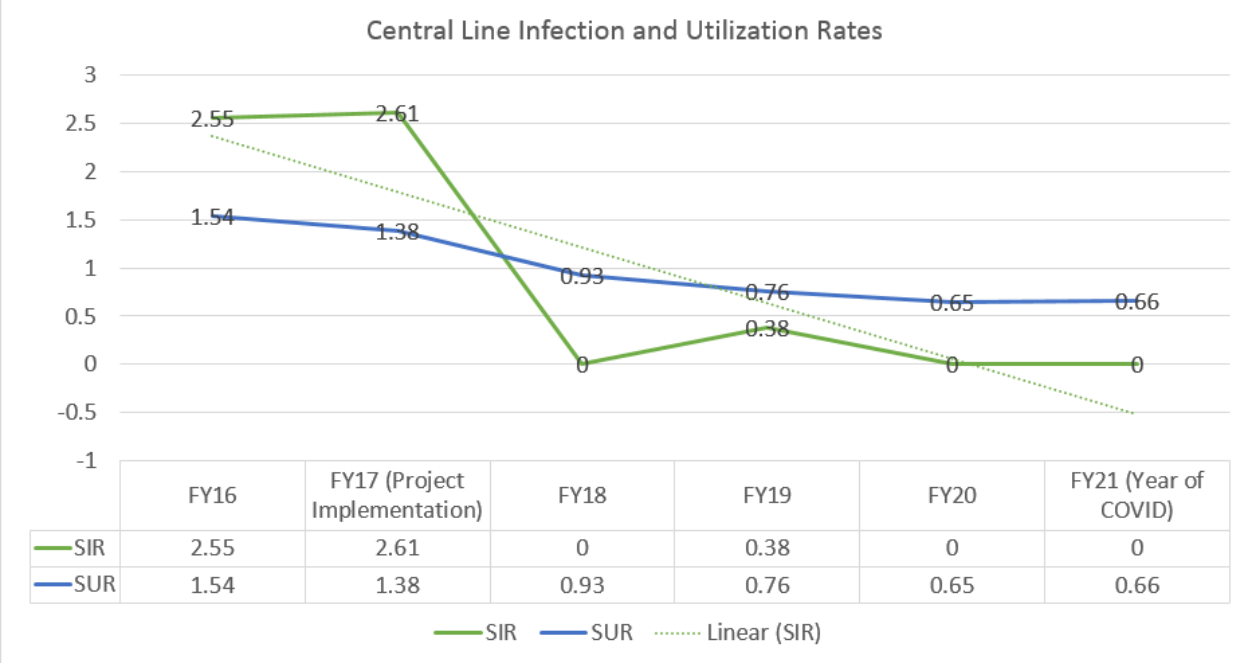
(APPENDIX A)

Date of Audit	6/4/2018	6/5/2018	6/5/2018	6/6/2018	6/6/2018	7-Jun	8-Jun	8-Jun	9-Jun	9-Jun	10-Jun	10-Jun	11-Jun	11-Jun	12-Jun
Auditor Name	jm	jm	jm	lj	lj	lj	jm	EM	MG	MG	LJ	LJ	jm	jm	kf
	0= no, 1= yes														
Indication documented & appropriate	1	1	1	1	1	1		1	1	1	1	1	1	1	1
Line necessity reviewed with provider	1	1	1	1	1	1		1	1	1	1	1	1	1	1
CHG Treatment documented	1	1	1	1	1	refused		1	1	1	1	1	1	0	1
Central lines patent	1	0	1	1	1	1		1	1	1	1	1	1	1	1
Orange caps in place and documented	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1
Site assessement documented	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Central line dressing visually inspected by Lead	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Dressing change has valid date/initial	1	1	1	1	1	1		1	1	1	1	0	1	0	1
Patient/family education completed	1	1	0	1	1	1	1	1	1	1	1	1	1	1	1
	(Do not alter formulas in yellow)														
*Total Compliance	9	8	8	9	9	8	4	9	9	9	9	7	9	7	9
Percentage Correct	100	88.88888889	88.888889	100	100	88.88889	44.44444	100	100	100	100	77.77778	100	77.77778	100
Total Percentage Correct:	3177.777778														
Number of Audits completed:	34	(auditor to enter)													
Monthly Percentage Correct:	**93.46405229**														

(APPENDIX B)

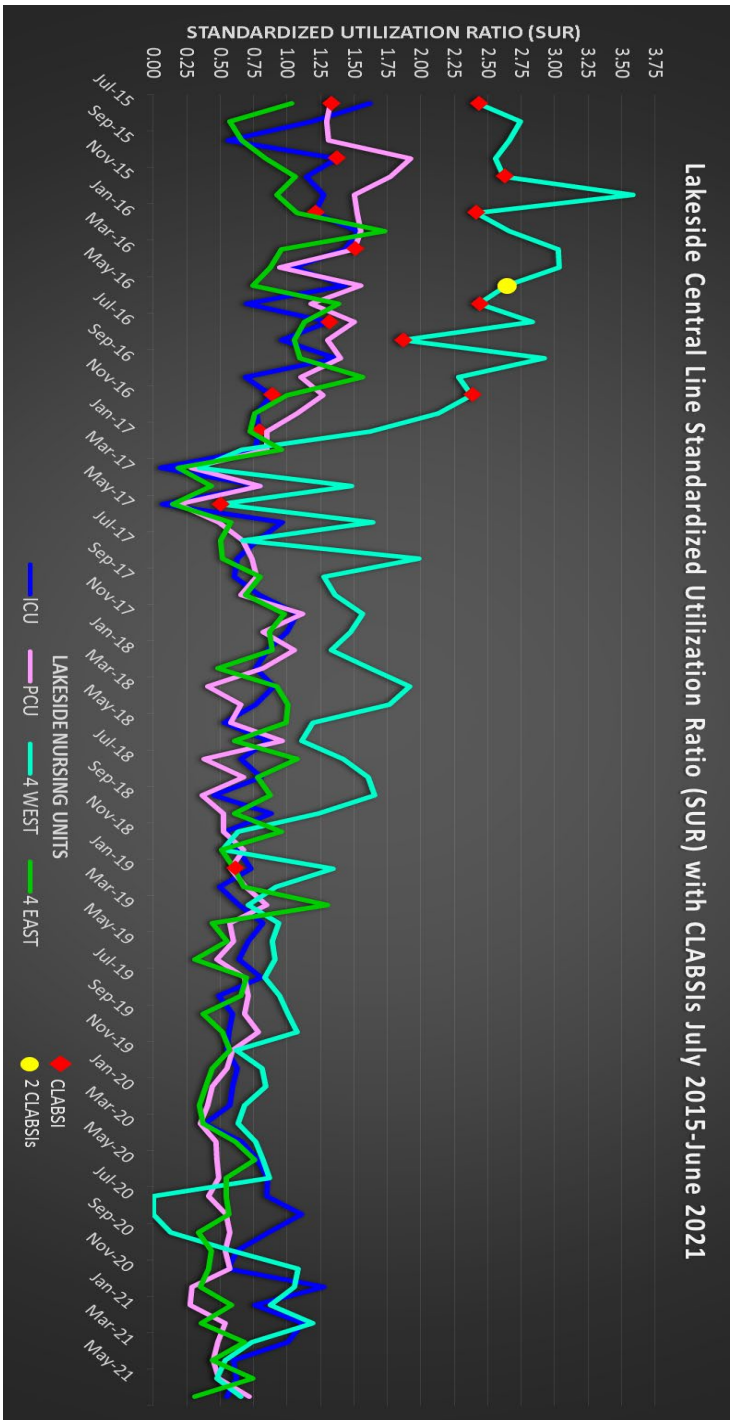

Inpatients
Is there a need for IV access?
Does the patient have C.L.?
YES
NO
Platelet Count is 10 or less
OR
Will be receiving chemo/TPN
Explain scripted new process to patient
Pt refuses
Provide Education
Proceed with peripheral IV placement
Pt agrees
Provide Education
Chart Accordingly
Access C.L. site using aseptic technique
Have T.L. make notation on excel sheet
Obtain Peripheral IV access
Monitor closely
Peripheral IV is placed
Unable
Attempted peripheral/midline IV 3 times
Access C.L

(APPENDIX C)



	FY16	FY17 (Project Implementation)	FY18	FY19	FY20	FY21 (Year of COVID)
SIR	2.55	2.61	0	0.38	0	0
SUR	1.54	1.38	0.93	0.76	0.65	0.66

(APPENDIX D)


Lakeside Central Line Standardized Utilization Ratio (SUR) with CLABSIs July 2015-June 2021
STANDARDIZED UTILIZATION RATIO (SUR)
0.00
0.25
0.50
0.75
1.00
1.25
1.50
1.75
2.00
2.25
2.50
2.75
3.00
3.25
3.50
3.75
Jul-15
Sep-15
Nov-15
Jan-16
Mar-16
May-16
Jul-16
Sep-16
Nov-16
Jan-17
Mar-17
May-17
Jul-17
Sep-17
Nov-17
Jan-18
Mar-18
May-18
Jul-18
Sep-18
Nov-18
Jan-19
Mar-19
May-19
Jul-19
Sep-19
Nov-19
Jan-20
Mar-20
May-20
Jul-20
Sep-20
Nov-20
Jan-21
Mar-21
May-21
LAKESIDE NURSING UNITS
ICU
PCU
4 WEST
4 EAST
CLABSI
2 CLABSIs