



Central Line Patency



Providence St Vincent Medical Center
MedSurgTele

JANA M. LESKO, MAT BA BSN RN CMSRN

MedSurg Clinical Educator/Professional Development Specialist

APRIL 2018

Problem & Purpose

Problem:

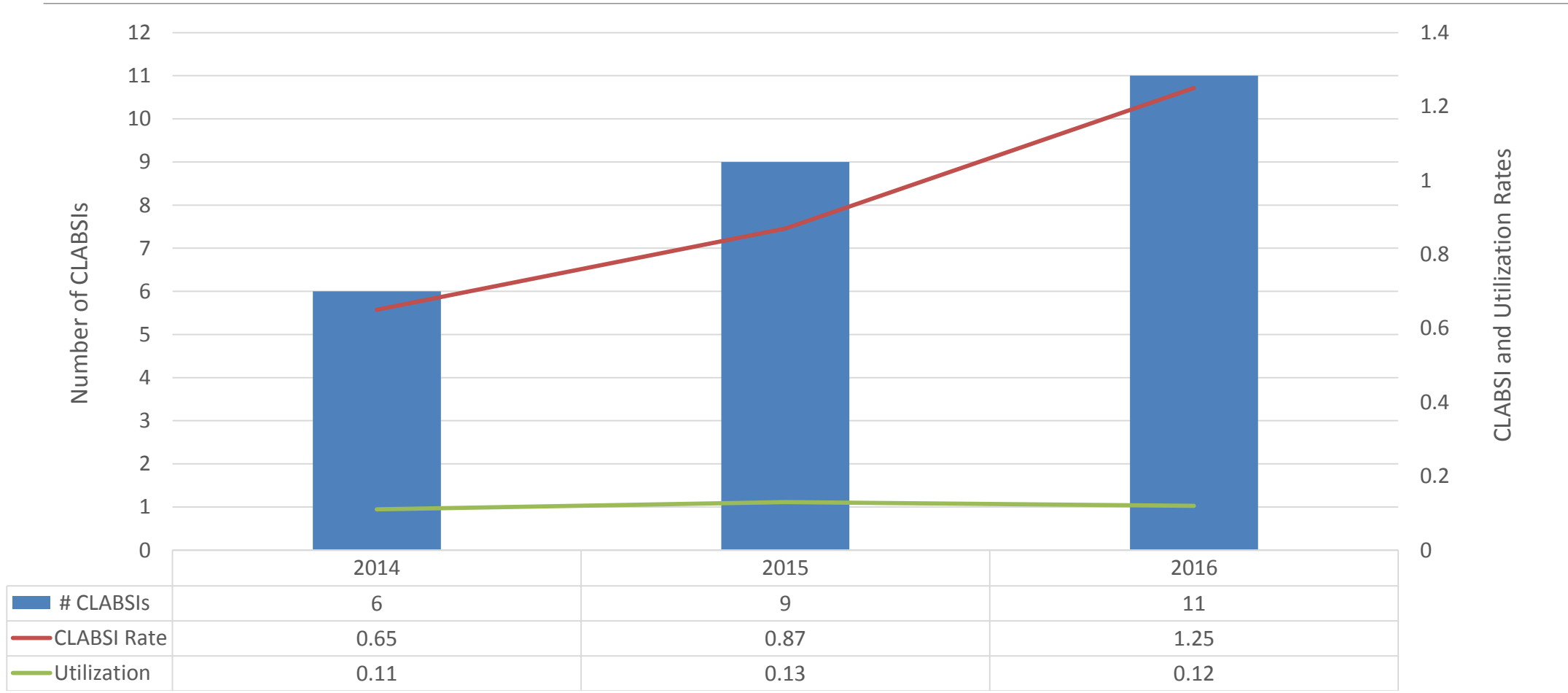
Increased CLABSI (Central Line Associate Blood Stream Infections) rate in Medical-Surgical/Tele at Providence St Vincent Medical Center.

Purpose of Central Line Patency Quality Improvement:

Improve nursing maintenance of central line lumen patency to reduce CLABSI in adult inpatients.

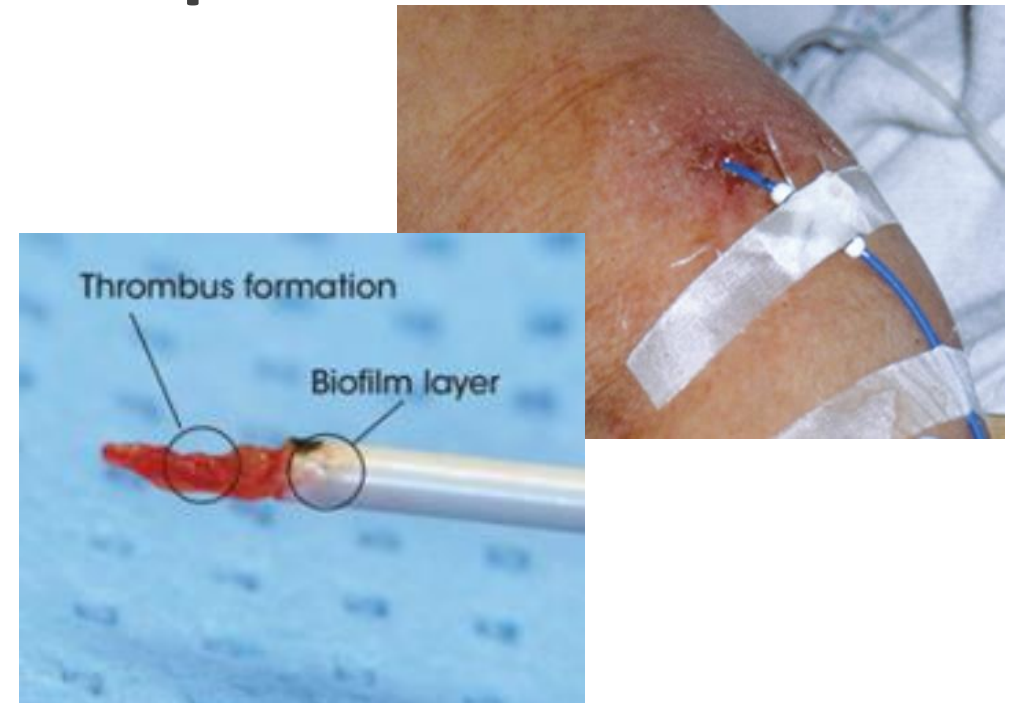


CLABSI 2014-2016 PSVMC MedSurgTele



Background: Why focus on assessing & maintaining central line lumen patency?

- **Assessing for, preventing, and promptly addressing central line catheter occlusions prevents patient harm**
 - Occlusions increase CLABSI risk
 - Extravasation, infiltration
- **Nursing knowledge & practice gap**

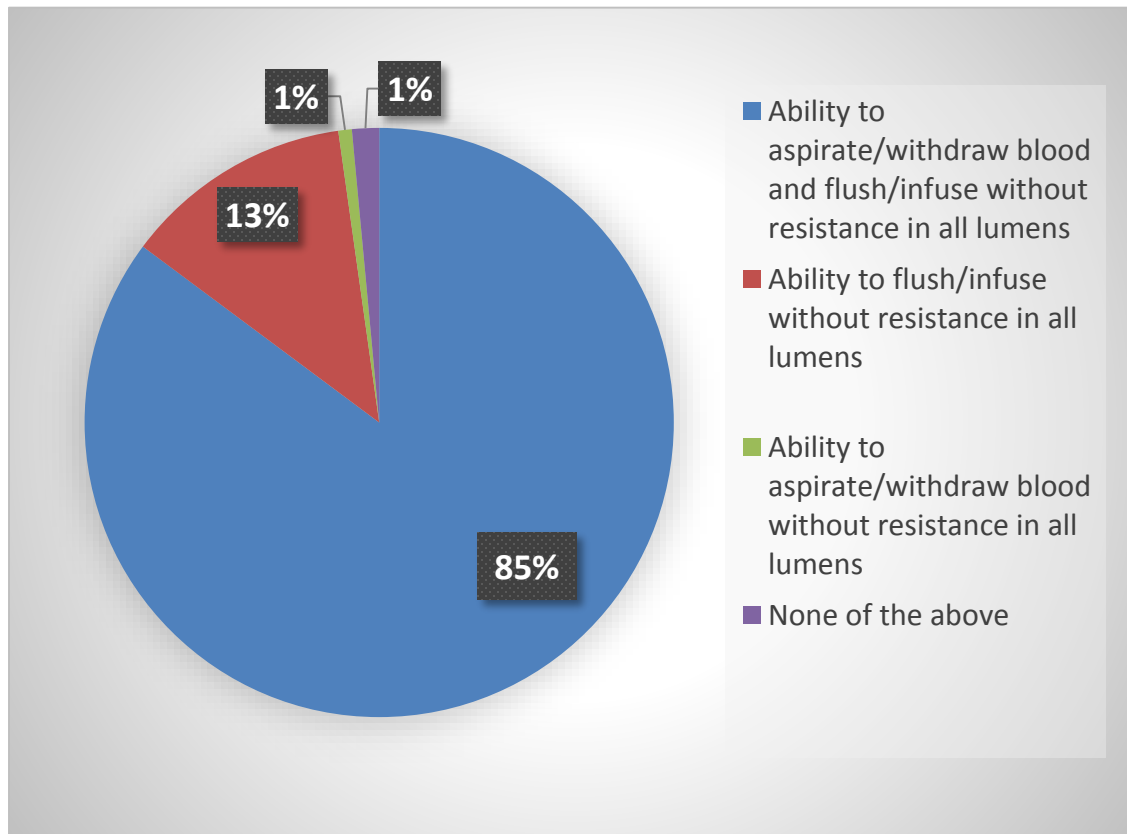


Methods

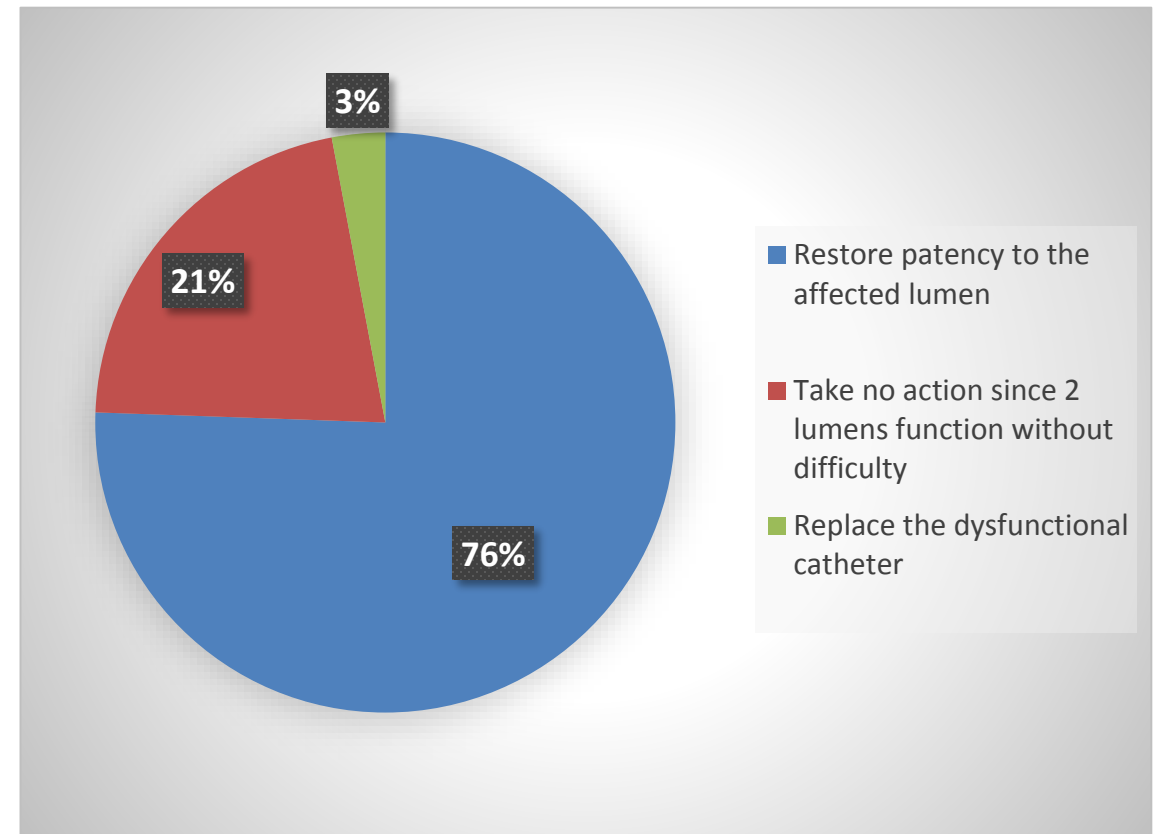
- **Intervention:** unit based in-services on central line patency
- **Pre- and post-intervention data collection:**
 - 5-question patency survey (Pre n=135, Post n=66)
 - Chart audits:
 - Patency maintenance documentation
 - Presence of Work List reminder for routine aspiration and flushing

Pre-Intervention Survey Results

Defining Central Line Patency



Managing Triple Lumen Catheter



Pre-Intervention Audit Results

- **Patency documentation**
 - Variation existed
 - Most, if present, included only flushing

- **Patency Work List reminders**
 - Present for 53% of central lines
 - Absent in title: aspiration, Q8hrs when not in use

Intervention

- **Unit based in-services**

Pizza for Patency!



- **Objectives:**

- Define patency
- Recognize the importance of aspiration, in addition to flushing during assessment and regular maintenance
- Explain the relationship between clot formation and CLABSI risk
- Identify the interventions for dysfunctional central line lumens
- Utilize the Work List (in EMR) as a reminder for routine central line assessment/maintenance

Lumen Patency/Maintenance documentation

Flowsheets

Summary | Chart Review | Results Revi... | Work List | MAR | **Flowsheets** | Intake/Output | Notes | Education | Care Plan | Orders | Demographics | Admit - Arrival | Discharge Ch... | Charge Capt... | Shift Assess... | FYI | Patient Label ... | Customize | More

Vital Signs | **LDA (Active) PHS** | PCA/Neuraxial/Epidual | Intake/Output | LDA (Active) PHS

Accordion Expanded View All

1m 5m 10m 15m 30m **1h** 2h 4h 8h 24h

Based On: 0700 | Reset | Now

Admission (Current) from 4...
4/27/17
1300

PICC Line - Double Lumen 02/10/16 0800	
PICC Line - Properties Group	Placement Date/Time: 02/10/16
Daily Review Of Necessity	
Securement	
Site Maintenance	
Dressing Change Due	
Lumen 1 <u>Patency/Maintenance</u>	flushed without diffic...
Lumen 1 Cap Change Due	
Lumen 1 Pump Type/Serial Number	
Lumen 2 <u>Patency/Maintenance</u>	blood return, unable to obtain
Lumen 2 Cap Change Due	
Lumen 2 Pump Type/Serial Number	
Mid-Upper Arm Circumference (cm)	
Catheter Length Distal to Insertion Site	
Tip Termination	
Phlebitis	
Infiltration	
Interventions	
Extravasation Type	

04/27/17 1300

Lumen 2 Patency/Maintenance

blood return, unable to obtain; flushed witho

Select Multiple Options: (F5)

- flushed without difficulty
- flushed with difficulty
- flush, unable to, lumen marked
- blood return, able to obtain
- blood return, unable to obtain**
- catheter lumen declotted per protocol
- IV infusing
- intermittent infusion cap applied
- intermittent infusion cap changed
- tubing changed
- other (see comments)

contacted IV RN

Group Information

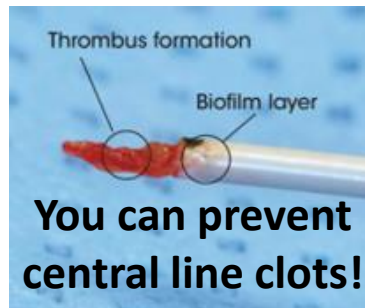
- Phlebitis_Scale_Fall2014.pdf
- Infiltration_Scale_Fall2014.pdf
- Central Line Maintenance Bundle

Assessing/Maintaining Central Line Patency

Pizza for Patency! All units achieved $\geq 80\%$ attendance
Central Line Patency inservices. Pizza parties are coming!



Please take the 5-question
post-inservice **Select Survey**
(link in email) 10/23-11/10



Reference use tools - search for these policies in PolicyStat:

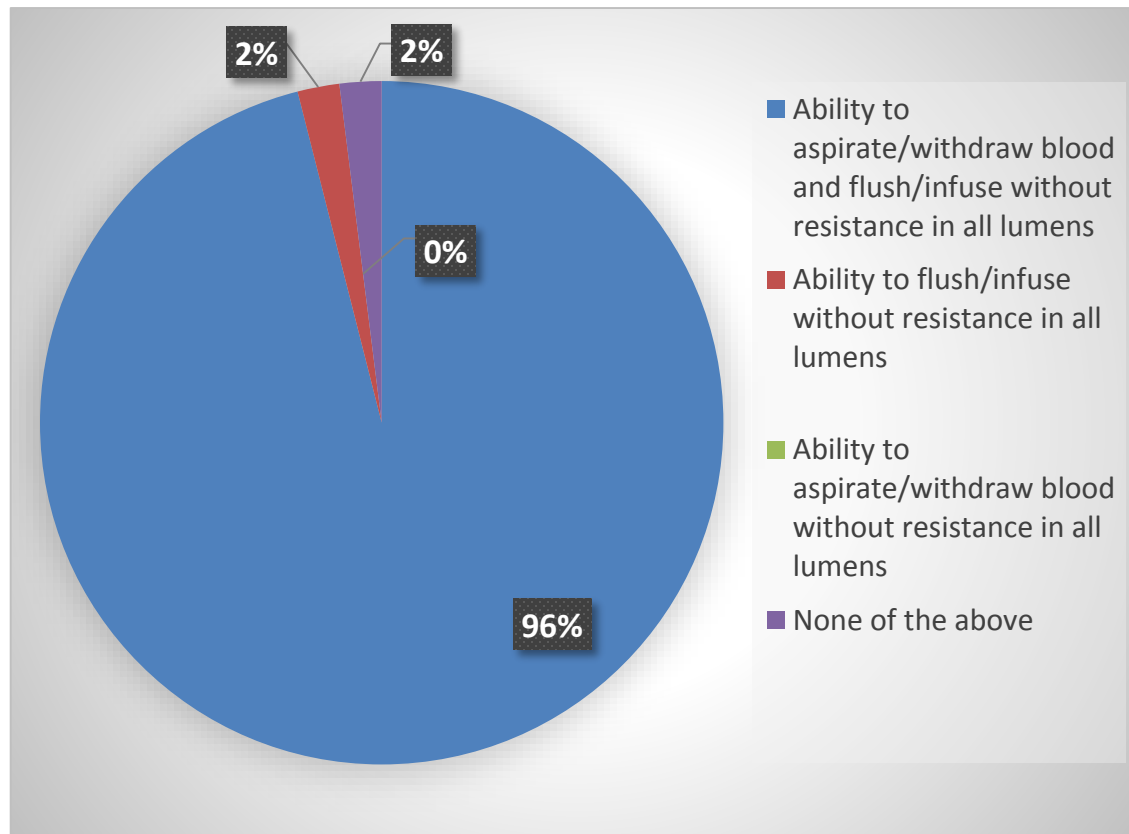
- IV Maintenance Standards: Adult & Pediatrics
- Clinical Reference Summary: Prevention of Central Line Associated Blood Stream Infection – Adult & Pediatric Bundle
- IV: Central Venous Catheter: Occluded, Care Of, Including Thrombolytic Agent Instillation and/or Infusion

KEY POINTS FROM THIS EDUCATION:

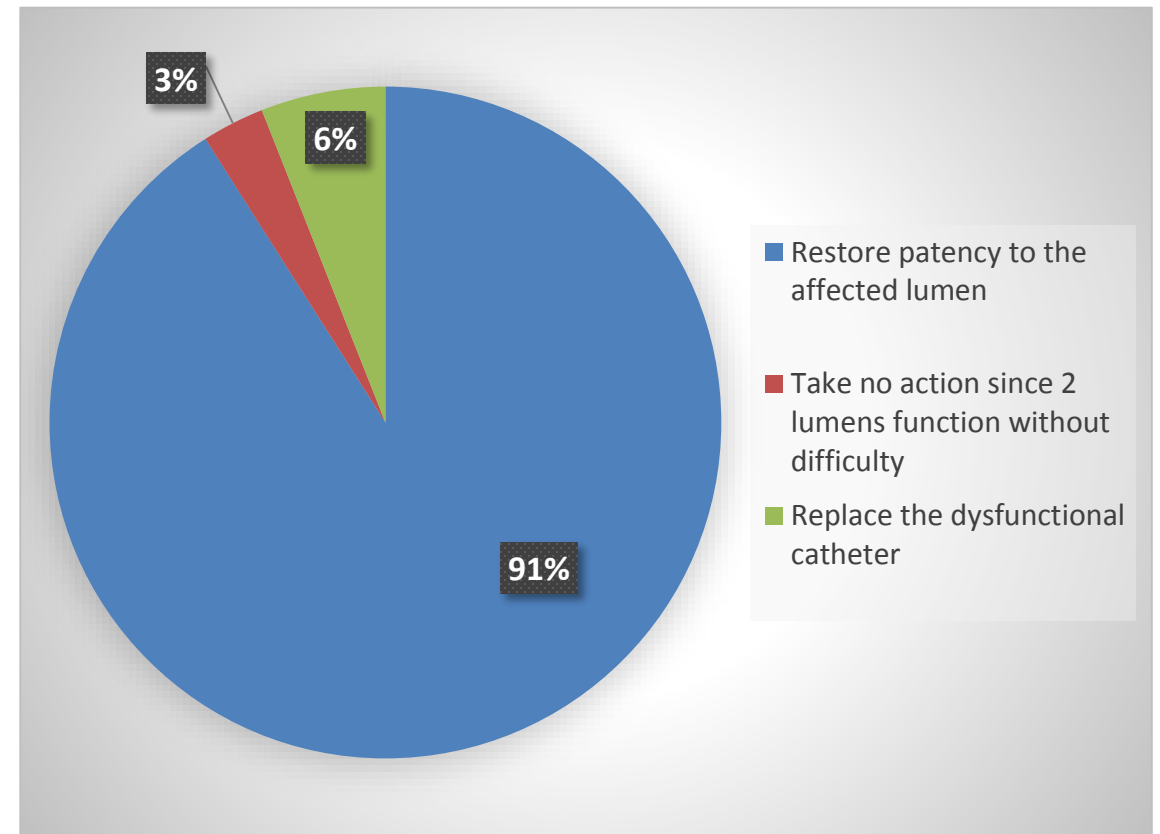
- ✓ To assess & maintain patency, all central line lumens must be **flushed AND aspirated** for brisk blood return
 - Prior to each access
 - Every 8hrs when lumen not in use
- ✓ If **ANY** lumen flushes with difficulty or blood return is sluggish or absent, take actions to promptly resolve the occlusion:
 - 1) Check for mechanical obstruction (eg - clamps, kinks)
 - 2) Try patient position changes (eg- arm)
 - 3) Request IV RN consult for further troubleshooting & possible de-clotting

Post-Intervention Survey Results

Defining Central Line Patency



Managing Triple Lumen Catheter



Post-Intervention Audit Results

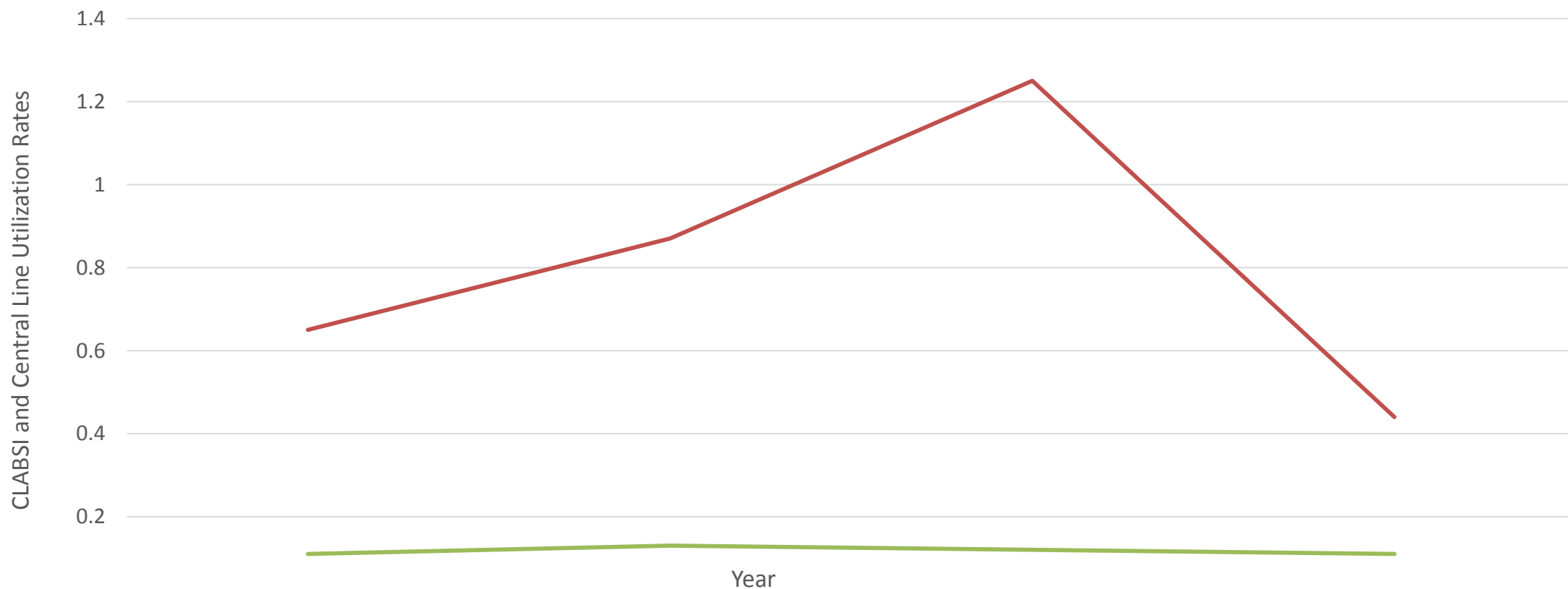
- **Patency documentation**
 - Increased documentation of patency maintenance with both flushing and blood return

- **Patency Work List reminders**
 - Q8hr Patency Work List reminders present for 75% of central lines
 - Over half included both aspiration and flushing



CLABSI 2014-2017

PSVMC MedSurgTele



	2014	2015	2016	2017 YTD
CLABSI Rate	0.65	0.87	1.25	0.44
Utilization	0.11	0.13	0.12	0.11

Conclusion

- **CLABSI in MedSurgTele in 2017**
 - 3 CLABSI from January to July
 - **No CLABSI since July 2017!**
- **Dedicated focus on central line patency assessment and maintenance has helped reduce the incidence of CLABSI**



Central Line maintenance bundle: What piece is next?

Work List Tasks - Last Refresh: 2213

Current Shift: 07/27/16 1901-0701 Start Date: 7/27/2016 **Overdue**

+ Add Task Time View Filters: My Discipline Show: Completed Discontinued Options

List view: Category Discipline Documentation Priority Task Time Choose Columns

Time	Task
Documentation	
2000	Assess continued need, securement, site maintenance for Central Line - Triple Lumen 07/27/16 0700 1 subclavia (specify) 7 Fr, Placement Date/Time: 07/27/16 0700 Line #: 1 Lumen 1: Red Hub Lumen 2: White Hub Lumen 3: B

Inpatient Nursing WorkList Reminder

11/14/17 1000

Daily Review Of Necessity

Previous: [anticipated need for access/em...](#)

Select Multiple Options: (F5)

- anticipated need for access/emergency
- blood products
- caustic/vasoconstrictive meds
- continued during end-of-life care
- hemodynamic monitoring
- hydration/maintenance fluids (NICU/Ped
- fluid restrictions
- frequent blood gas assessment
- inadequate peripheral access
- long term antibiotics
- none:discussed with provider
- pain management
- TPN
- other (see comments)

Daily Review Of Necessity

Select Multiple Options: (F5)

- none: discussed with provider
- caustic / vasoconstrictive / chemo meds
- clinical instability of the patient and/or complexity of infu
- continued during end of life care
- CRRT / dialysis / apheresis
- frequent blood gases (umbilical artery lines only)
- hemodynamic monitoring
- hydration / maintenance fluids (NICU / Peds only)
- inadequate peripheral access
- long term infusion therapy or antibiotics
- PIV only: anticipated need for access/emergency
- PIV only: blood products
- PIV only: pain management
- TPN
- Other (See Comments)

Comment (F6)

References

Infusion Nurses Society. (2016). *Infusion Therapy Standards of Practice* (Volume 36, Number 1S). Retrieved from <http://in.providence.org/sss/departments/sls/Shared%20Documents/Infusion%20Therapy%20Standards%20of%20Practice%202016%20Revised.pdf>

PH&S Oregon Region. (2017). *IV Maintenance Standards: Adult & Pediatrics*. PH&S-OR Clinical Excellence Resource Team (CERT).

PH&S Oregon Region. (2015). *Clinical Reference Summary: Prevention of Central Line Associated Blood Stream Infection – Adult & Pediatric Bundle*. Regional Nursing.



Contact information

Jana M. Lesko

Providence St Vincent Medical Center

Portland, Oregon

Jana.Lesko@providence.org