

# **Reduction in CLABSI: the PGI experience**

**Main Intensive care unit  
(MICU)**

Pediatric Intensive care unit  
(PICU)

Respiratory Intensive care unit  
(RICU)

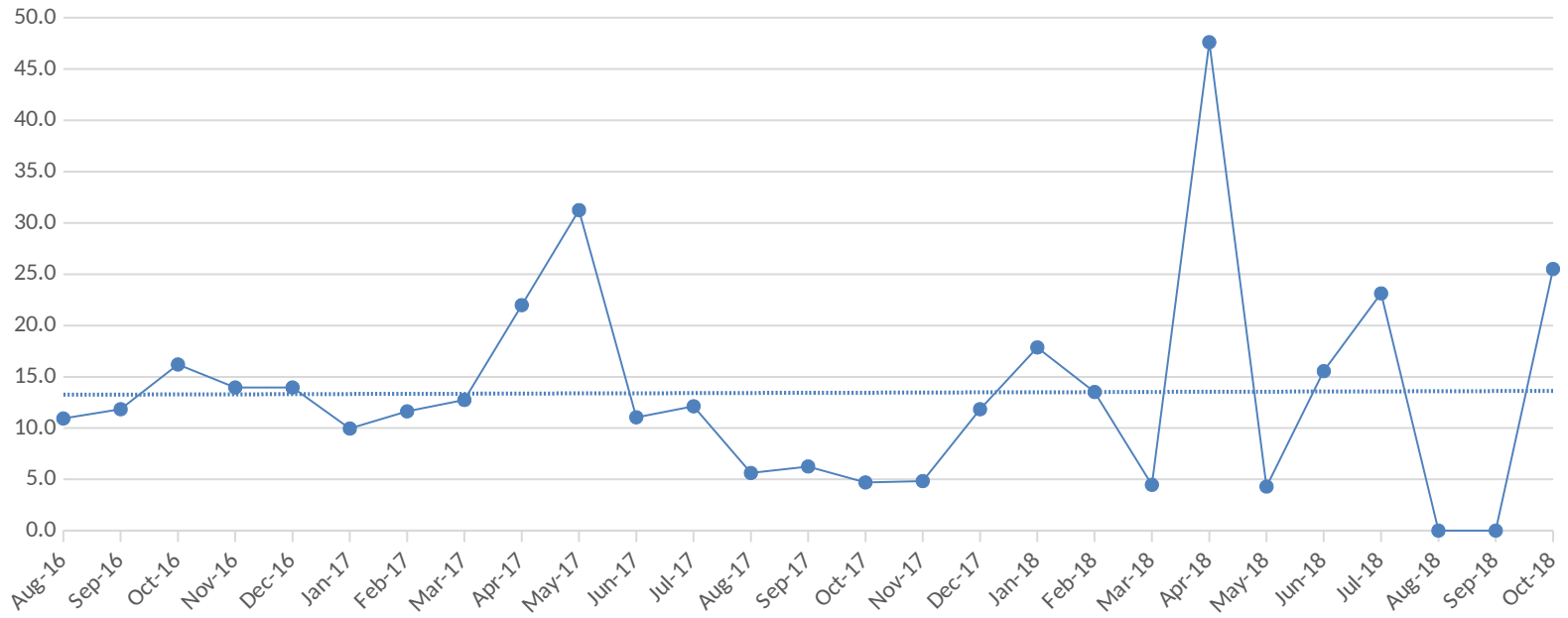
# Frequency of BSIs in MICU

Year	Total BSI	CLABSI	Primary BSI	Secondary BSI	CL days	CLABSI/1000 CL days
Aug-16	2	2	-	-	183	10.9
Sep-16	2	2	-	-	169	11.8
Oct-16	4	4	-	-	247	16.2
Nov-16	3	3	-	-	215	14.0
Dec-16	3	3	-	-	215	14.0
Jan-17	2	2	-	-	201	10.0
Feb-17	2	2	-	-	172	11.6
Mar-17	2	2	-	-	157	12.7
Apr-17	7	4	1	2	182	22.0
May-17	6	6	0	0	192	31.3
Jun-17	4	2	1	1	181	11.0
Jul-17	5	2	2	1	165	12.1
Aug-17	1	1	0	0	178	5.6

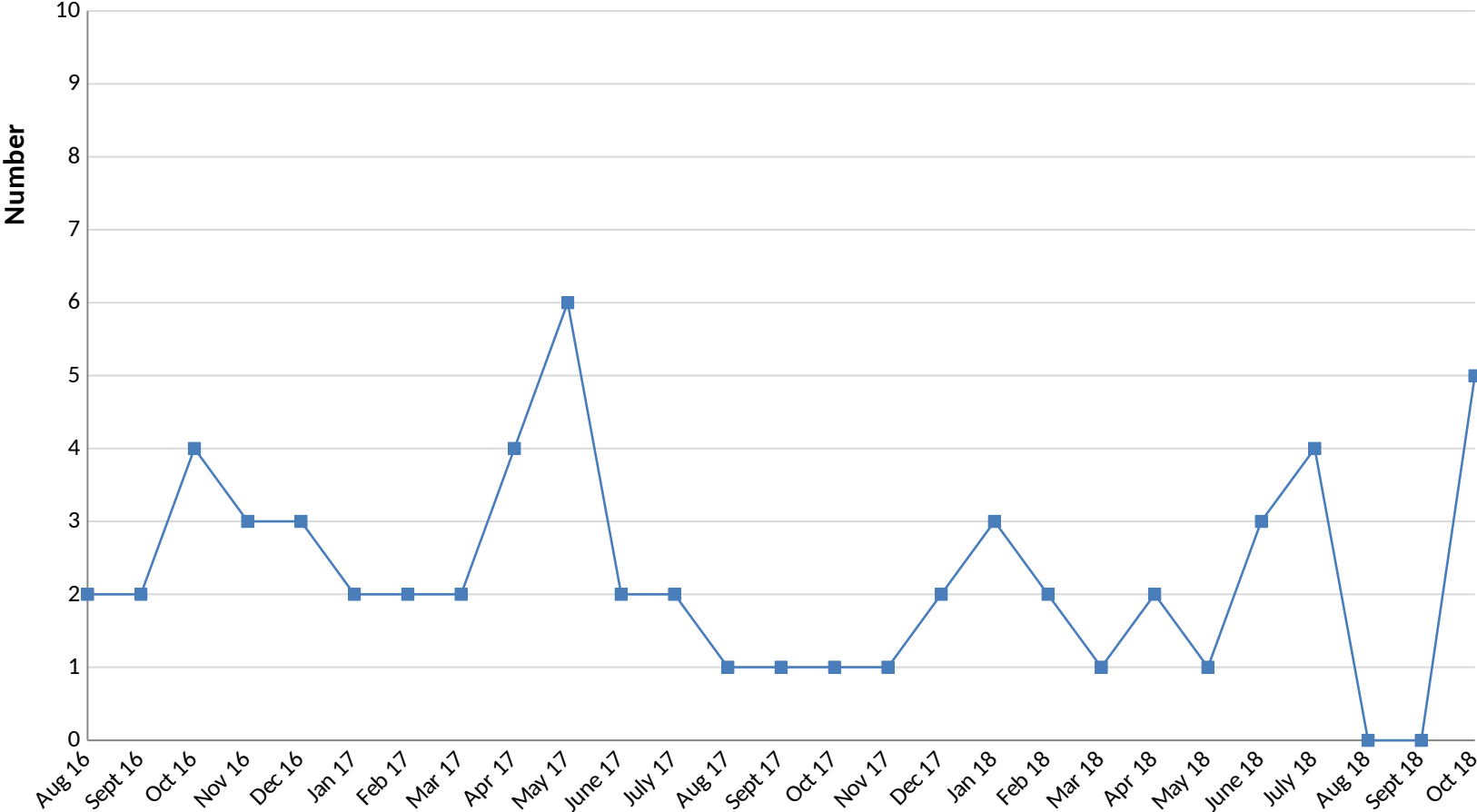
# Frequency of BSIs in MICU continued.....

Year	Total BSI	CLABSI	Primary BSI	Secondary BSI	CL days	CLABSI/1000 CL days
Sep-17	1	1	0	0	160	6.3
Oct-17	1	1	0	0	213	4.7
Nov-17	2	1	1	0	207	4.8
Dec-17	4	2	1	1	169	11.8
Jan-18	6	3	0	3	168	17.9
Feb-18	2	2	0	0	148	13.5
Mar-18	4	1	0	3	224	4.5
Apr-18	2	2	0	0	42	47.6
May-18	1	1	0	0	233	4.3
Jun-18	3	3	0	0	193	15.5
Jul-18	5	4	1	0	173	23.1
Aug-18	0	0	0	0	142	0.0
Sep-18	0	0	0	0	142	0.0
Oct-18	6	5	1	0	196	25.5

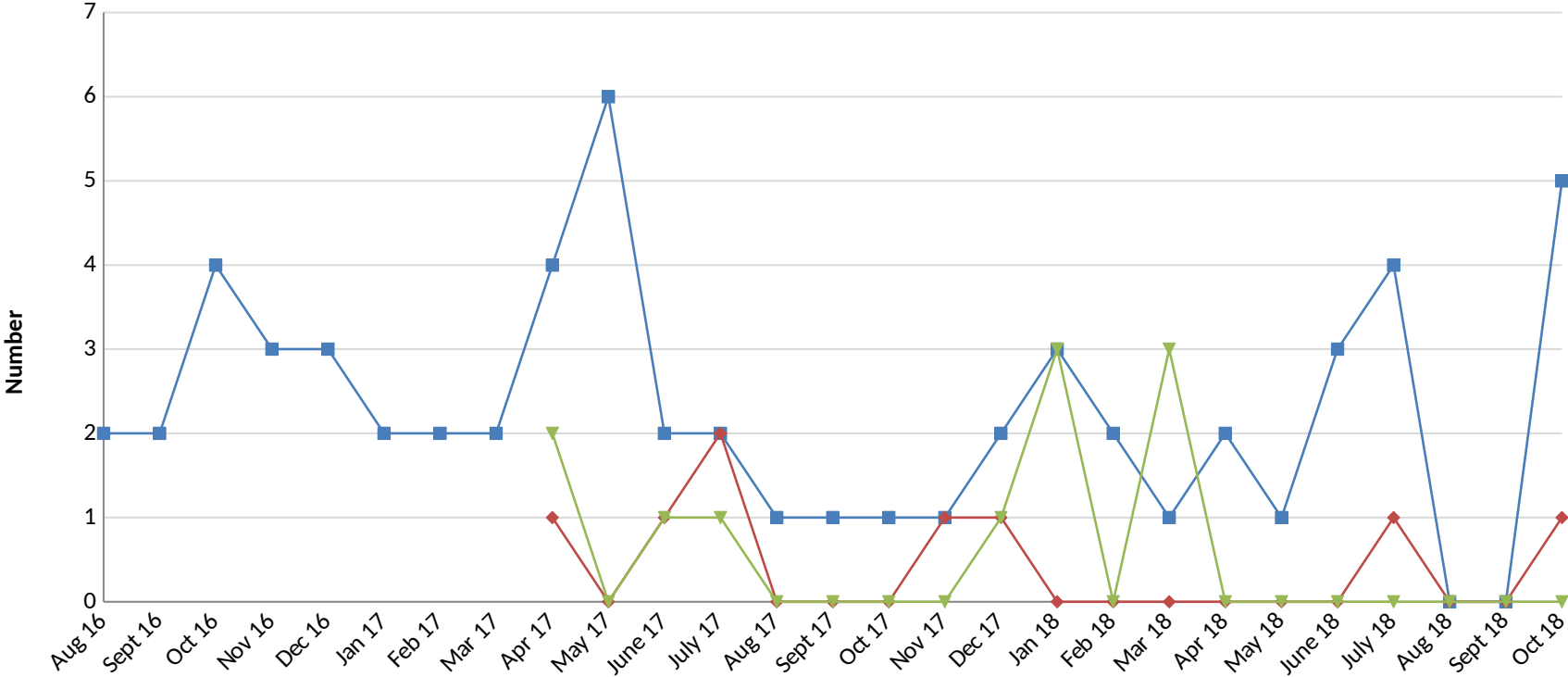
CLABSI/1000 CL days in MICU



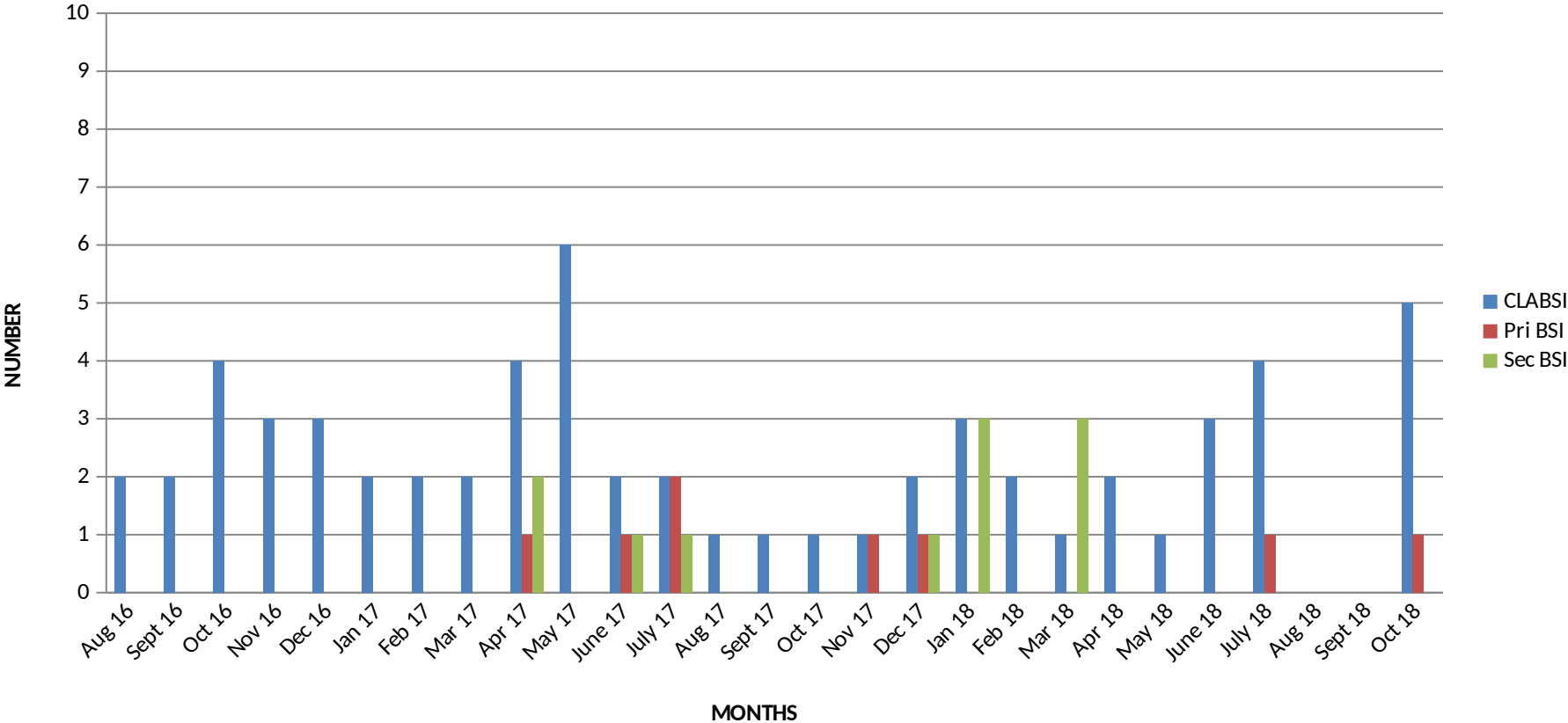
# Total CLABSI in MICU 2016-18



# Comparative trend for CLABSI, Primary, Secondary and CLABSI in MICU



# MICU





Main Intensive care unit  
(MICU)

**Pediatric Intensive care unit  
(PICU)**

Respiratory Intensive care unit  
(RICU)

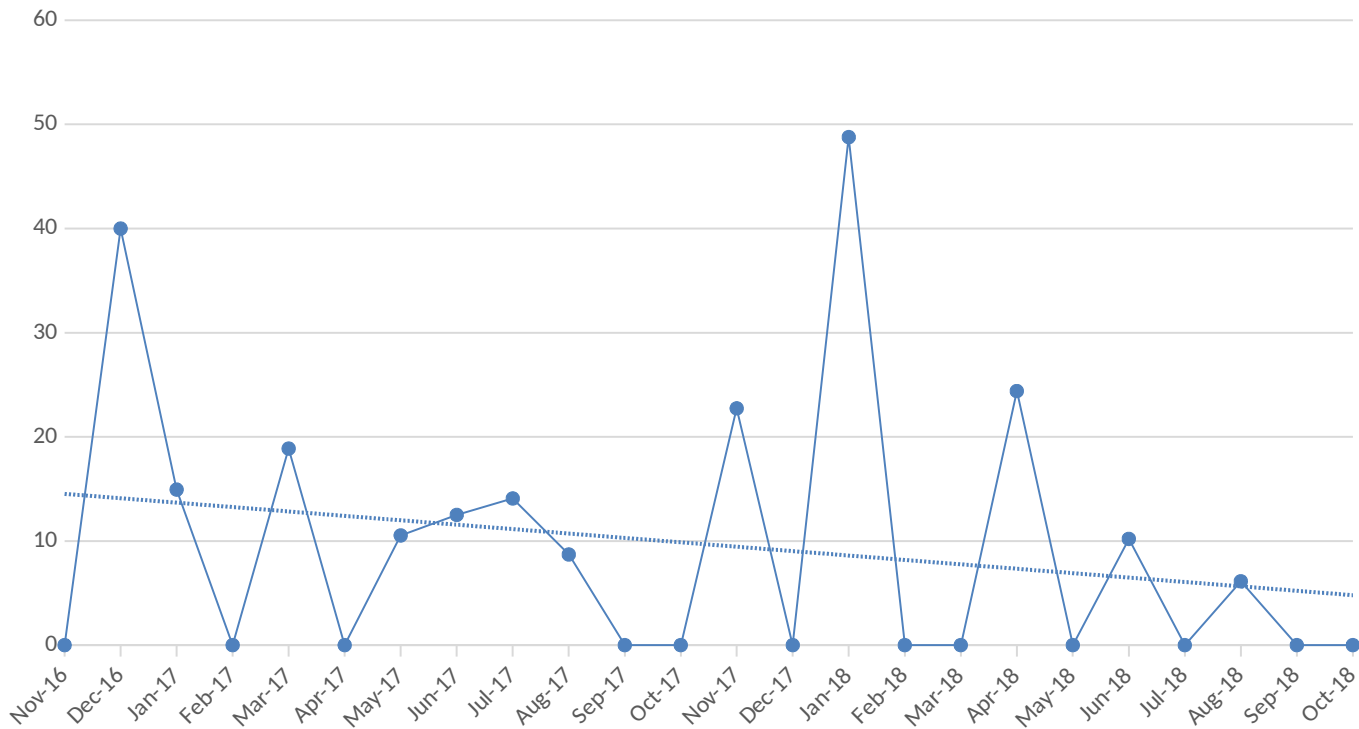
# Frequency of Blood Stream Infection in PICU

Year	Total BSI	CLABSI	Pri BSI	Sec BSI	CL days	CLABSI/1000 CL days
Nov-16	1	1	-	-	87	11.5
Dec-16	3	3	-	-	100	30.0
Jan-17	1	1	-	-	67	14.9
Feb-17	0	0	-	-	94	0.0
Mar-17	2	2	-	-	106	18.9
Apr-17	1	1	0	0	111	9.0
May-17	2	1	0	1	95	10.5
Jun-17	1	1	0	0	80	12.5
Jul-17	3	2	1	0	71	28.2
Aug-17	1	1	0	0	115	8.7
Sep-17	0	0	0	0	96	0.0
Oct-17	6	0	5	1	120	0.0
Nov-17	3	2	0	1	88	22.7

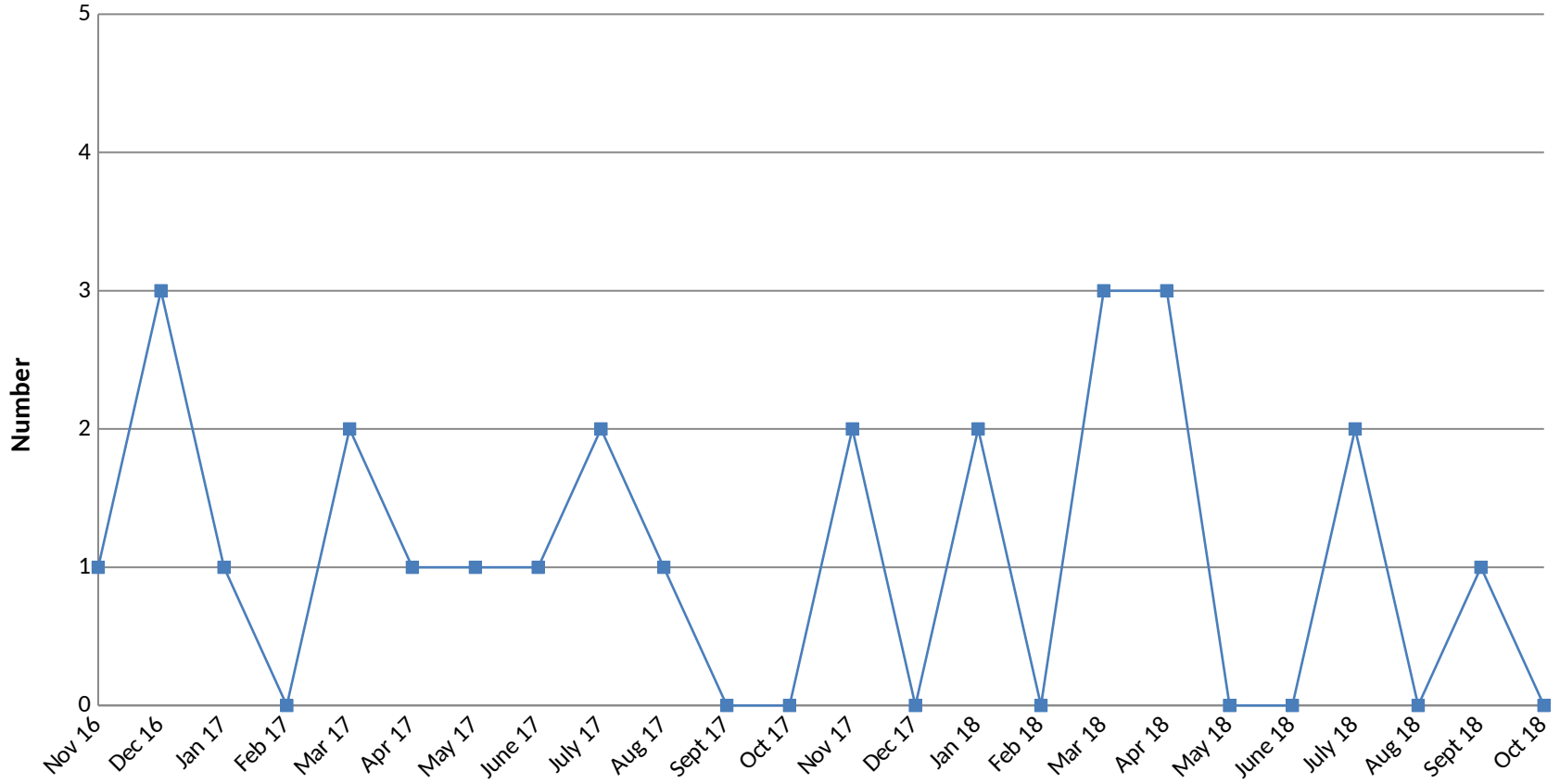
# Frequency of Blood Stream Infection in PICU continued.....

Year	Total BSI	CLABSI	Pri. BSI	Sec. BSI	CL days	CLABSI/1000 days
Dec-17	1	0	1	0	100	0.0
Jan-18	3	2	0	1	41	48.8
Feb-18	1	0	1	0	133	0.0
Mar-18	4	3	1	0	86	34.9
Apr-18	3	3	0	0	123	24.4
May-18	1	0	0	1	146	0.0
Jun-18	2	0	1	1	98	0.0
Jul-18	3	2	1	0	72	27.8
Aug-18	0	0	0	0	163	0.0
Sep-18	3	1	2	0	146	6.8
Oct-18	1	0	1	0	165	0.0

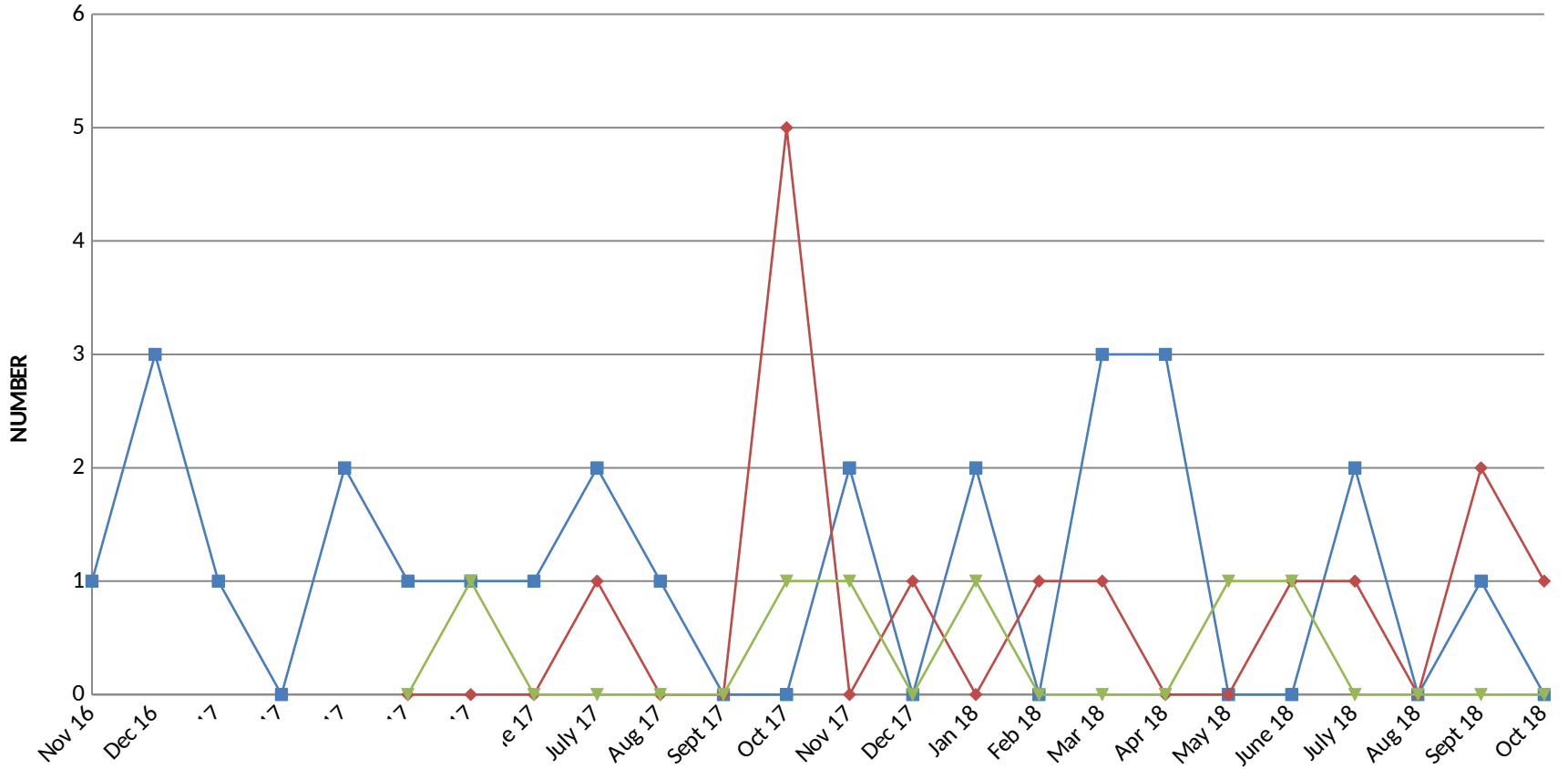
CLABSI/1000 CL days in PICU



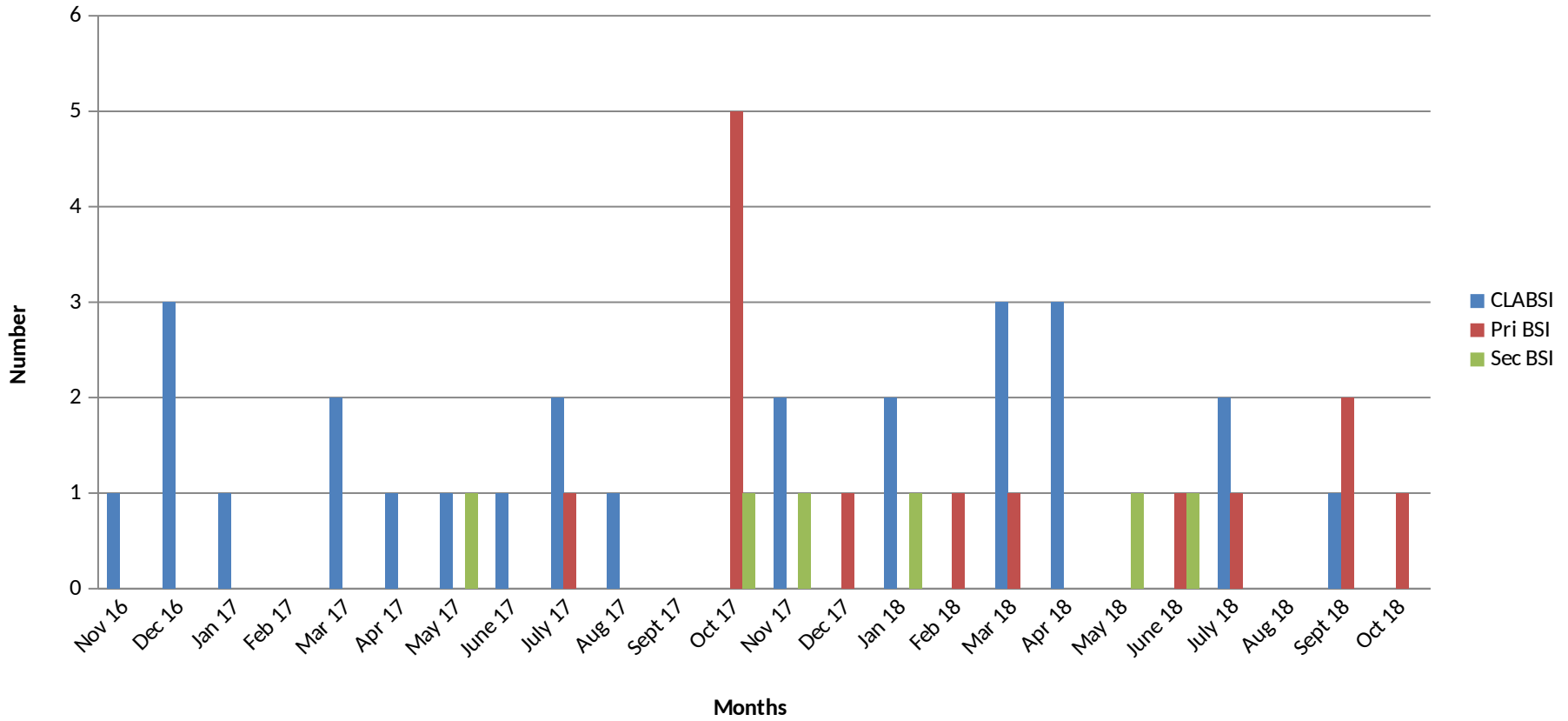
## Total CLABSI in PICU 2016-18



## Comparative trend of CLABSI, Pri BSI, Sec BSI for PICU



# PICU



Main Intensive care unit  
(MICU)

Pediatric Intensive care unit  
(PICU)

**Respiratory Intensive care unit  
(RICU)**



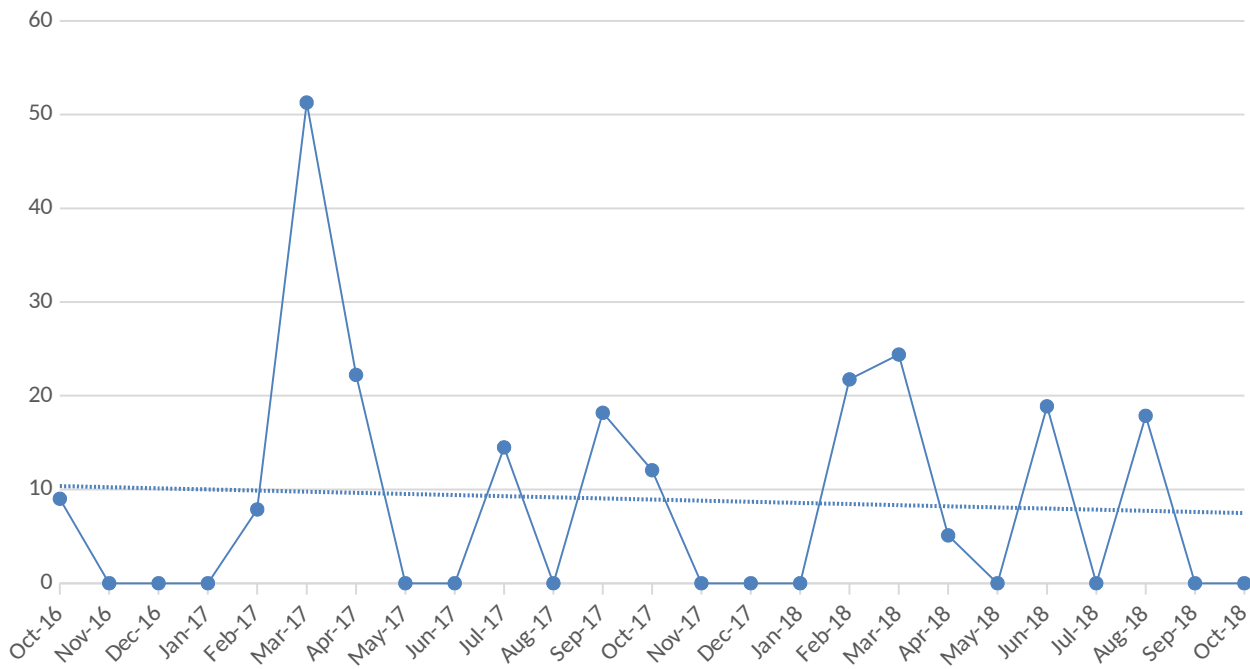
# Frequency of Blood Stream Infection in RICU

Year	Total BSI	CLABSI	Pri. BSI	Sec. BSI	CL days	CLABSI/1000 CL days
Oct-16	1	1	-	-	111	9.0
Nov-16	0	0	-	-	62	0.0
Dec-16	0	0	-	-	53	0.0
Jan-17	0	0	-	-	77	0.0
Feb-17	0	0	-	-	127	0.0
Mar-17	2	2	-	-	39	51.3
Apr-17	1	1	0	0	45	22.2
May-17	3	1	1	1	81	12.3
Jun-17	3	0	2	1	58	0.0
Jul-17	3	3	0	0	69	43.5
Aug-17	1	0	1	0	76	0.0
Sep-17	3	2	1	0	110	18.2
Oct-17	2	1	1	0	83	12.0
Nov-17	1	0	1	0	61	0.0

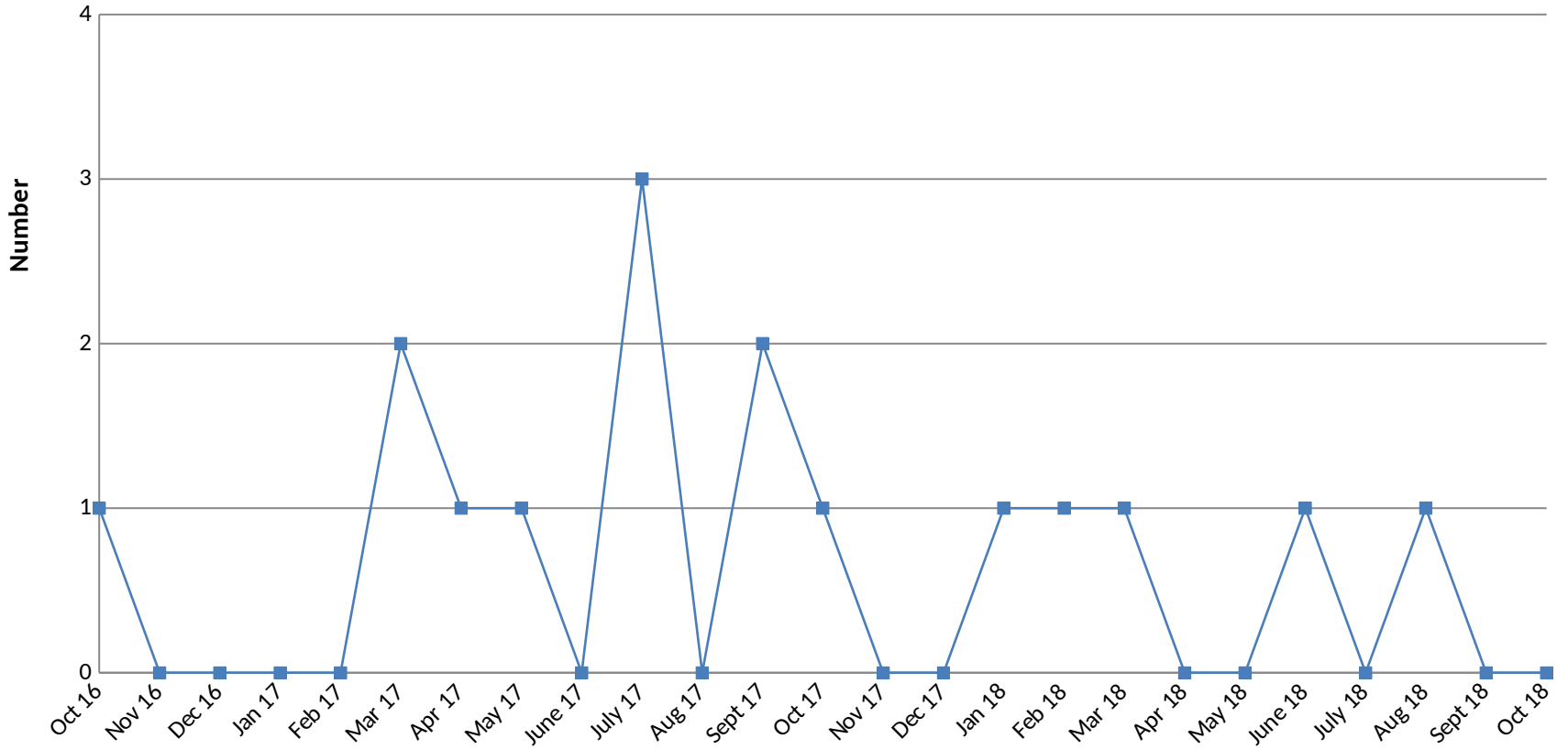
# Frequency of Blood Stream Infection in RICU continued.....

Year	Total BSI	CLABSI	Pri. BSI	Sec. BSI	CL days	CLABSI/1000 CL days
Dec-17	0	0	0	0	52	0.0
Jan-18	1	1	0	0	59	16.9
Feb-18	2	1	1	0	46	21.7
Mar-18	3	1	0	2	41	24.4
Apr-18	1	0	1	0	196	0.0
May-18	0	0	0	0	58	0.0
Jun-18	2	1	1	0	53	18.9
Jul-18	0	0	0	0	75	0.0
Aug-18	1	1	0	0	56	17.9
Sep-18	0	0	0	0	70	0.0
Oct-18	0	0	0	0	92	0.0

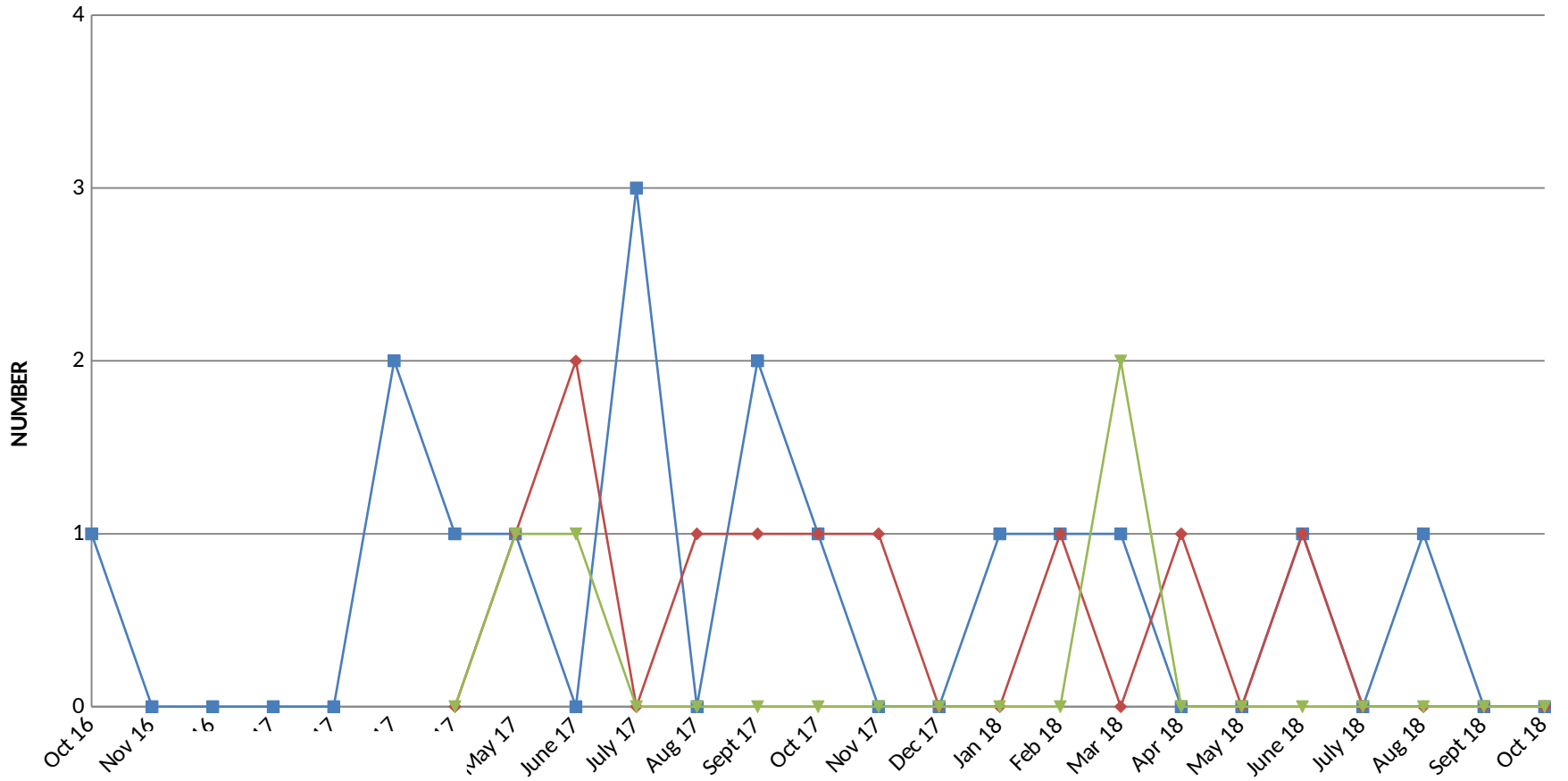
CLABSI/1000 CL days in RICU



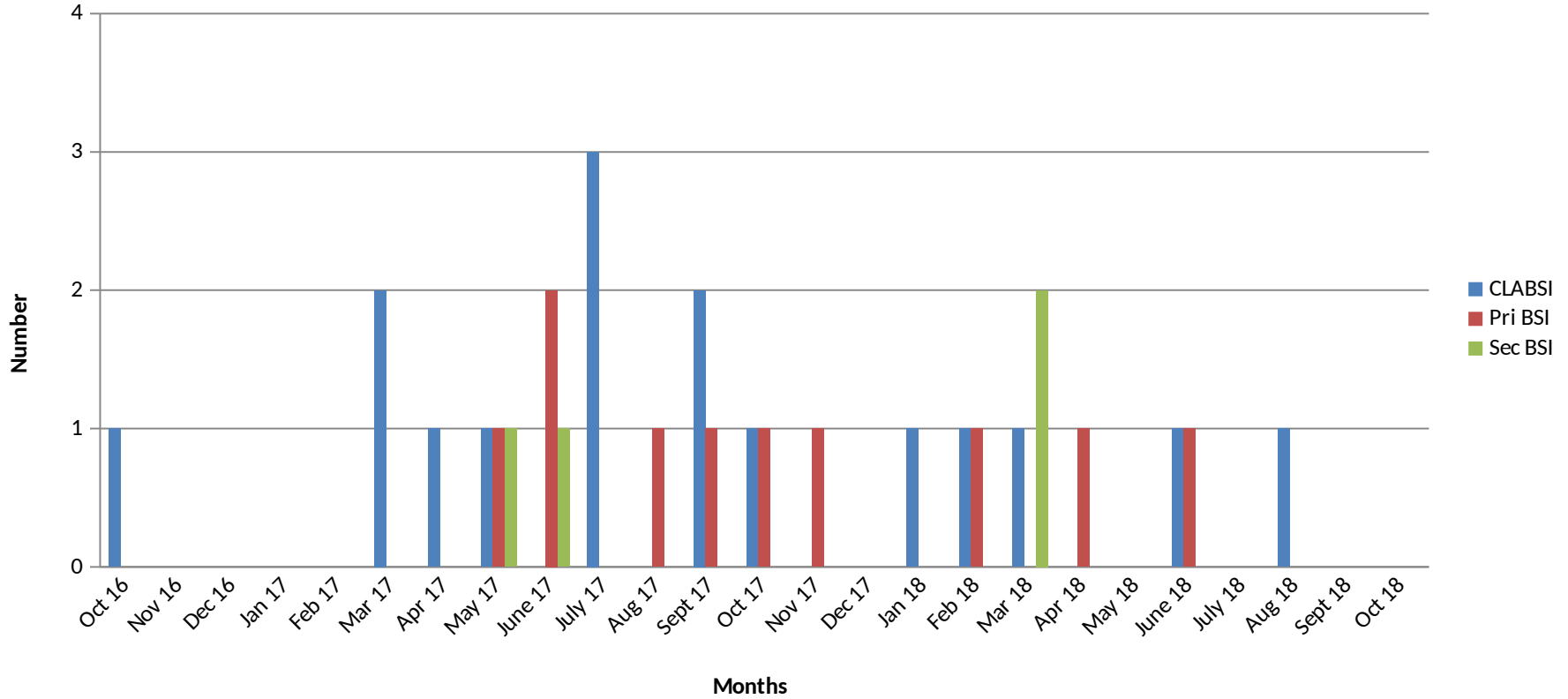
# Total CLABSI in RICU 2016-18



## Comparative trend of CLABSI, Pri, BSI, Sec. BSI for RICU



# RICU



**END**

# Measures to reduce CLABSI

- Surveillance by itself
- “Scrub the hub” fully implemented in PICU and RICU, irregular in MICU
- Insertion protocol- strictly followed in all 3 ICUs
- Maintenance bundle – documentation is sometimes not done, frequent reminders needed in one ICU



# Paediatric ICU



# Paediatric ICU

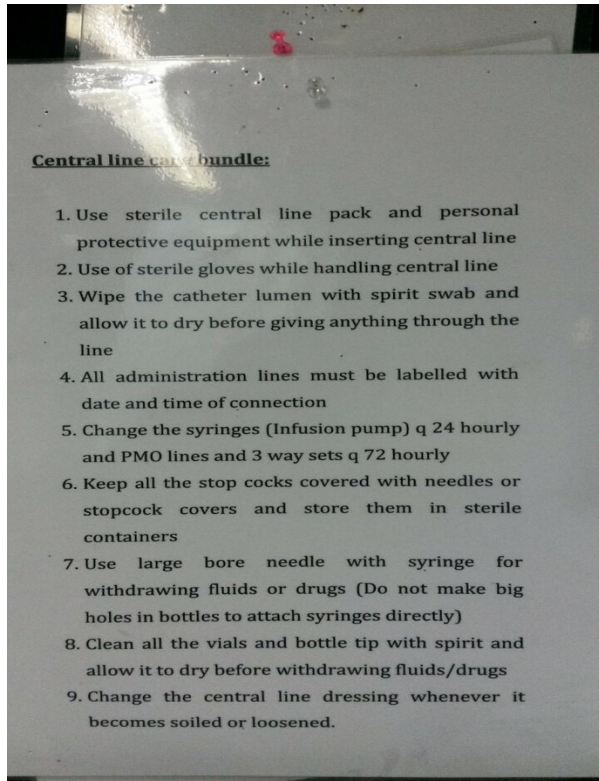
## Interventions To Reduce HCAI In Unit

- **Multi pronged approach:**
  - Team leader (Head of the unit)
  - Strictly follow anti-microbial stewardship principles
  - Each case audited personally by team leader after development of HCAI to identify the root cause

# Infection Control Nurse

- Dedicated staff nurse (designated from within PICU pool)
  - Hand hygiene compliance
  - Strict adherence to VAP, CVC bundles
  - Continuous education of nurses and residents
  - Small Quality improvement initiatives by nurses and doctors within PICU like mouth wash procedures, different kind of central lines, eye strapping etc.

# Infection Control Practices



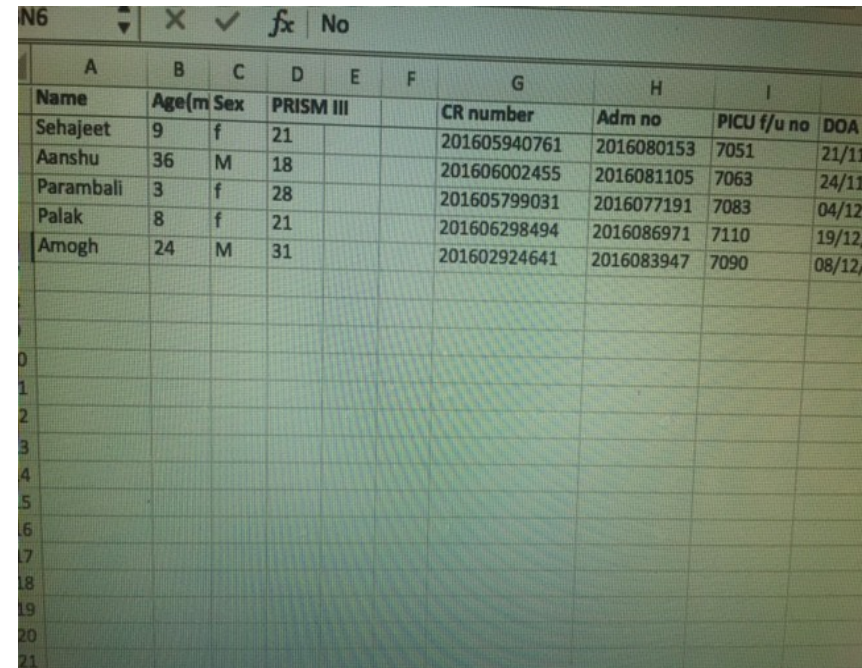
## CVC Bundle reminder at 3 places in PICU



**Romsons suction catheter for ET SUCTION,  
decrease risk of cross infection**

# Monthly Audit

- Sepsis Entry is maintained
- **Power point presentation**
- Audit attended by nurses & doctors (SR and Faculty)
- Root cause analysis of infections when they occur
- Rewards in form of badges, cards of appreciation, acknowledging on the PICU board
- Acknowledgment in unit huddles



Name	Age(m)	Sex	PRISM III	CR number	Adm no	PICU f/u no	DOA
Sehajeet	9	f	21	201605940761	2016080153	7051	21/11
Aanshu	36	M	18	201606002455	2016081105	7063	24/11
Parambali	3	f	28	201605799031	2016077191	7083	04/12
Palak	8	f	21	201606298494	2016086971	7110	19/12
Amogh	24	M	31	201602924641	2016083947	7090	08/12

# Device Reminder

- Device reminder by concerned bed side nurse & consultant during rounds
- Daily assessment for need of Catheter, CVL, ET tube in form of a PNEUMONIC “ FAST HUG **BIDS**” , where **D** stands for devices
- Red balloon at the bedside reminding staff about device days and early removal





White board in PICU displays the following monthly audit

1. Number of suspected and proven sepsis
2. The number of children on high end antibiotics
3. Days since VAP,BSI etc
4. All PICU staff (doctors and nurses) look at the board daily for the tally
5. Good team work is acknowledged when the VAP and BSI rate is '0'
6. Continuous inputs from Microbiology team

3/17 Mar. 2017

	<u>Proven</u>	Suspected
VAP	0	2
BSI	①	1
UTI	0	0
Peritonitis	0	1

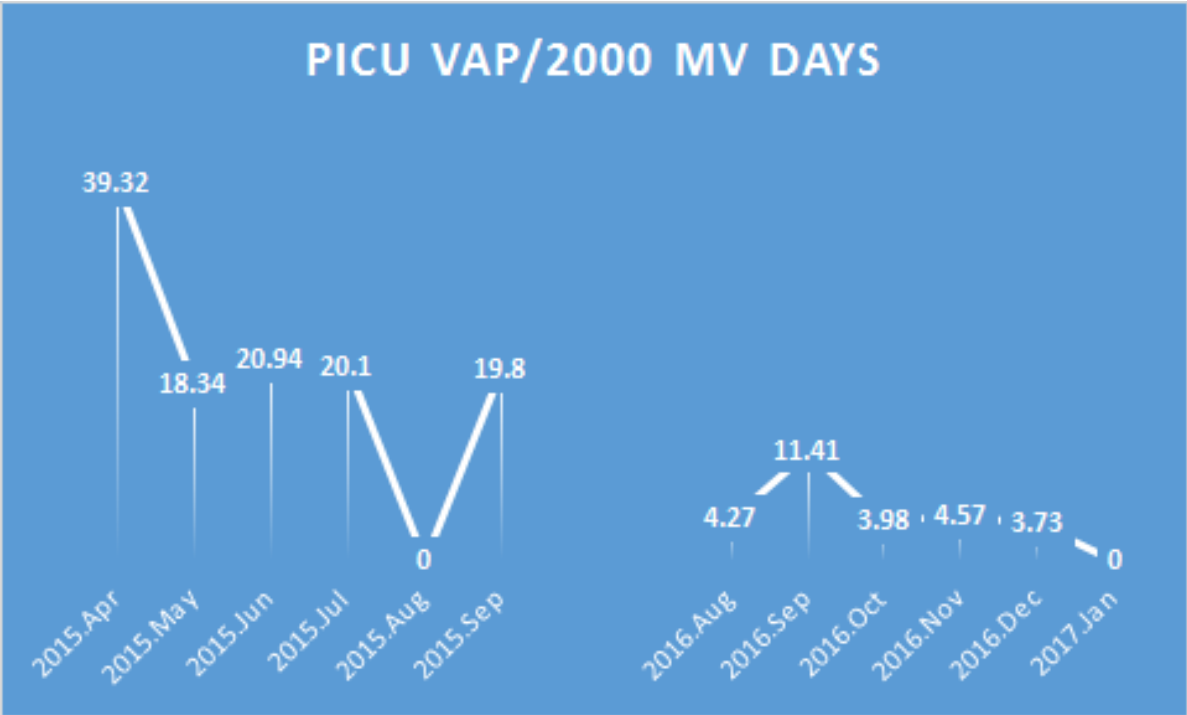
  

Time since Last VAP	— 12 Days
" " " BSI	— 11 Days
" " " UTI	— 6 Days

No of children on Vancomycin	— 3
" " " Merop/Imipenem	— 3
" " " Colistin	— 0

There has been a reduction in VAP also





# Other measures to prevent HCAI

- Cohort nursing
- Use of probiotics
- Restricted use of mobile phones within PICU
- Daily morning classes for parents regarding hand hygiene
- Early Enteral nutrition
- Practice good antibiotic practices like antibiotic cycling,  
extended infusions for carbapenams.....(3-4 hour infusion)
- Special efforts for “poor” patients

# Respiratory ICU

Certificate for best HH compliance



# Respiratory ICU

## Interventions To Reduce HCAI In Unit

- “Team approach” – **everybody** is involved
- Steps to increase hand hygiene
  - Availability
  - Classes
  - Hand hygiene supervisor
  - WhatsApp group
  - Special attention to new residents

# Protocols developed and implemented

- Protocol made and implemented for
  - Diagnosis of VAP, CRBSI, other ICU-acquired infections
  - Management uniform for type of infection and type of organisms
  - Strictly follow anti-microbial stewardship principles

# Monthly Audit

- Data entry of all infections
- Meetings with residents and consultants

# Maintenance checklist

## Daily Central Line Maintenance Checklist

Section A. General information									
Patient ID				Patient name					
201602194082		Balbir Singh							
Facility name		Surveillance unit			Date of admission to surveillance unit (dd/mm/yyyy)				
		RICU			3/10/18				
Section B. Daily checks									
Date (dd/mm/yyyy)	Central line day	Was the central line reviewed for necessity today?	Signature of treating physician	Was the dressing checked for soiling, dampening, and loosening today?	Signature of day shift nurse	Was the access port scrubbed with an antiseptic each time before use			
						During the day shift?	Signature of day shift nurse	During the night shift?	Signature of night shift nurse
22/10/18	2nd	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	AP	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	AP	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	AP
23/10/18	3rd	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	AP	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	AP
24/10/18	4th	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	AP	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	AP	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	AP	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	AP
25/10/18	5th	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	AP	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	AP	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	AP	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	AP
26/10/18	6th	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	AP	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	AP	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	AP
27/10/18	7th	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	AP	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	AP	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	AP	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	AP
28/10/18	8th	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	AP	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	AP	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	AP	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	AP
29/10	9th	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	AP	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	AP	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	AP
20/10	9AM	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	to remove	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	AP	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	AP	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	AP
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		<input type="checkbox"/> Yes <input type="checkbox"/> No		<input type="checkbox"/> Yes <input type="checkbox"/> No		<input type="checkbox"/> Yes <input type="checkbox"/> No		<input type="checkbox"/> Yes <input type="checkbox"/> No	

# Maintenance checklist

Pt. received & central line

Central Line Maintenance Checklist									
Patient ID <u>201806476566</u>				Patient name <u>Hans Raj</u>					
Facility name		Surveillance unit <u>RDEW 02</u>			Date of admission to surveillance unit (dd/mm/yyyy) Shift timing (Morning/ Evening? Night) <u>4/10/2018</u>				
Section B. Daily checks									
Date (dd/mm/yyyy)	Central line day	Was the central line reviewed for necessity today?	Signature of day shift nurse	Was the dressing checked for soiling, dampening, and loosening today?	Signature of day shift nurse	Was the access port scrubbed with an antiseptic each time before use			
						During the day shift?	Signature of day shift nurse	During the night shift?	Signature of night shift nurse
<u>4/10/2018</u>	<u>1st</u>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<u>E R</u>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<u>E R</u>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<u>E R</u>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
<u>5/10/18</u>	<u>2nd</u>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<u>AR</u>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<u>AR</u>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<u>AR</u>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<u>10 minutes</u>
<u>6/11/18</u>	<u>3rd</u>	<input type="checkbox"/> Yes <input type="checkbox"/> No	<u>M R</u>	<input type="checkbox"/> Yes <input type="checkbox"/> No	<u>AR R</u>	<input type="checkbox"/> Yes <input type="checkbox"/> No		<input type="checkbox"/> Yes <input type="checkbox"/> No	
		<input type="checkbox"/> Yes <input type="checkbox"/> No		<input type="checkbox"/> Yes <input type="checkbox"/> No		<input type="checkbox"/> Yes <input type="checkbox"/> No		<input type="checkbox"/> Yes <input type="checkbox"/> No	
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		<input type="checkbox"/> Yes <input type="checkbox"/> No		<input type="checkbox"/> Yes <input type="checkbox"/> No		<input type="checkbox"/> Yes <input type="checkbox"/> No		<input type="checkbox"/> Yes <input type="checkbox"/> No	
		<input type="checkbox"/> Yes <input type="checkbox"/> No		<input type="checkbox"/> Yes <input type="checkbox"/> No		<input type="checkbox"/> Yes <input type="checkbox"/> No		<input type="checkbox"/> Yes <input type="checkbox"/> No	
		<input type="checkbox"/> Yes <input type="checkbox"/> No		<input type="checkbox"/> Yes <input type="checkbox"/> No		<input type="checkbox"/> Yes <input type="checkbox"/> No		<input type="checkbox"/> Yes <input type="checkbox"/> No	
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		<input type="checkbox"/> Yes <input type="checkbox"/> No		<input type="checkbox"/> Yes <input type="checkbox"/> No		<input type="checkbox"/> Yes <input type="checkbox"/> No		<input type="checkbox"/> Yes <input type="checkbox"/> No	
		<input type="checkbox"/> Yes <input type="checkbox"/> No		<input type="checkbox"/> Yes <input type="checkbox"/> No		<input type="checkbox"/> Yes <input type="checkbox"/> No		<input type="checkbox"/> Yes <input type="checkbox"/> No	

Central line - 20 minutes 10/18



# CLIP toolkit monitoring form

**CLIP Toolkit Monitoring Form**

**Section A. General information**

1. Facility ID: \_\_\_\_\_ 2. Surveillance ID: 03

3. Patient ID: \_\_\_\_\_

4. Date of observation: 14 / 10 / 18 (DD/MM/YYYY) 5. Event #: \_\_\_\_\_

6. Name of observer: Dr. Shalish

7. Occupation of inserter:

Medical student     Intern/resident     Consultant physician     Other medical staff

8. Reason for insertion:

New indication for central line (e.g., hemodynamic monitoring, fluid/medication administration, etc.)

Replace malfunctioning central line     Other (specify): \_\_\_\_\_

Suspected central line-associated infection

**Section B. Summary of insertion practices**

9. Insertion site:  Femoral     Jugular     Subclavian     Umbilical     Other

10. Insertion completed?  Yes     No

11. Inserter performed hand hygiene prior to central line insertion?  Yes     No

Which of the following barriers were used:

12a. Mask	12b. Sterile gown	12c. Sterile gloves	12d. Cap	12e. Full body sterile drape
<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No

13. Skin preparation agent was used (select Yes or No based on patient age):

If patient age < 60 days: was chlorhexidine gluconate, povidone iodine, or alcohol used?  Yes     No

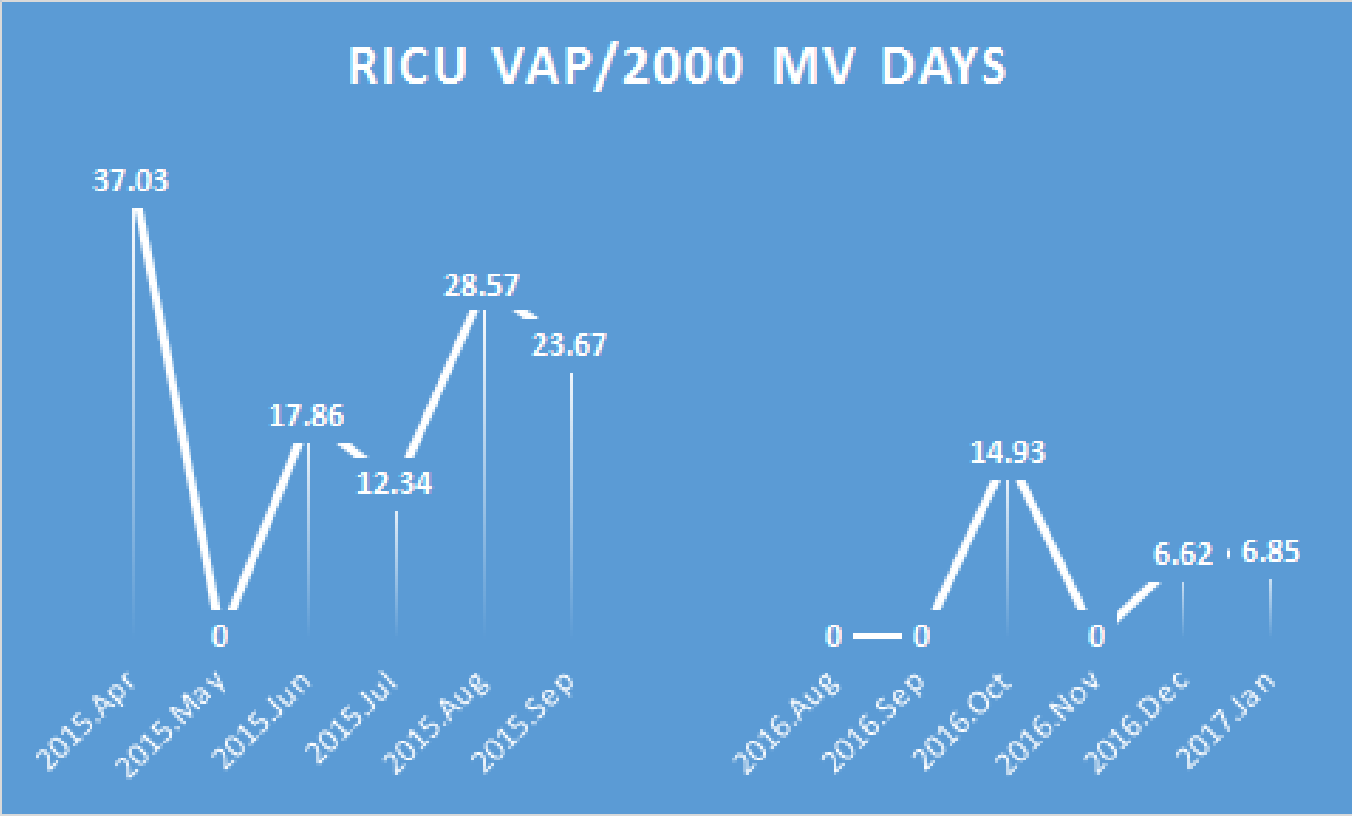
If patient age ≥ 60 days: was chlorhexidine gluconate used?  Yes     No

14. Was skin preparation agent completely dry at time of first skin puncture?  Yes     No

Central Line Maintenance Checklist  
Patient name: ARNICE



There has been a reduction in VAP also



Having dedicated infection control nurses is  
key

