

AMRITA INSTITUTE OF MEDICAL SCIENCES

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Amrita Institute - a brief overview

- 1,300-bed tertiary referral and teaching hospital
- serving more than 10 lakh outpatients and more than 70,000 inpatients annually.
- Comprises of
 - 12 super speciality departments
 - 45 other departments
 - 4500 support staff and
 - 670 faculty members.

- Facilities offered –
- 28 modern operating theatres,
- 275 equipped intensive-care beds,
- Fully computerized and networked Hospital Information System (HIS),
- Fully digital radiology department,
- 17 NABL accredited clinical laboratories,
- 24/7 telemedicine service.

**CAPACITY BUILDING AND STRENGTHENING OF
HOSPITAL INFECTION CONTROL TO DETECT
AND PREVENT ANTIMICROBIAL RESISTANCE
IN INDIA- AIMS EXPERIENCE**

SURVEILLANCE FOR HEALTHCARE-ASSOCIATED INFECTIONS (HAI) IN INTENSIVE CARE UNITS

Date of commencement of surveillance:
October, 2017

- Surveillance units:
 1. Medical ICU (B- Block) – BMICU (7 beds)
 2. Gastrointestinal ICU - GICU (13 beds)
 3. Neurosurgical ICU – Neuro-Ortho ICU (14 beds)

Hands-on training program at AIIMS

- Attended the hands-on training program provided by CDC : 22nd and 23rd of January, 2018 held at AIIMS Jai Prakash Narayan Apex Trauma Center

ICMR-CDC site support visit

- Site support visit was held on 14th August, 2018.
- 5 members from CDC and 6 members from AIIMS came to our centre and gave us their valuable feedback regarding our surveillance.

Amrita project team with ICMR-CDC- AIIMS Team



ICMR-CDC Site support visit - Action items

The following were the action items at our end:

1. Data analytics to be reviewed from network and match with our outcome / Infection Control report
2. Date of event and date of isolation to be registered and studied
3. CLABSI to correlate with ICMR-CDC software
4. Displaying report and trends of HAIs
5. Brain storm for an ideal and do able Prevention Bundle application
6. Accountability factor for each line insertion to be factored. This includes maintenance also
7. Create a competitive spirit between ICUs to improve the practices
8. Organise a refresher training for internal support team
9. Adopt another health care organisation within Ernakulam and hand hold them for bettering the practices (which will not be part of the network)

Central Line insertion checklist in our centre

AIMS - INSERTION BUNDLE CHECKLIST			
Name: _____		Dept. of Infection Control	
Central line Insertion Date: <u>17/10/11</u>		Dr/Dept: <u>C/S &</u>	Date of Intubation: _____
Inserted By: _____		Date of U.Catheterization: <u>17/10/11</u>	Intubated By: _____
CENTRALLINE BUNDLE CHECKLIST		U.CATHETER BUNDLE CHECKLIST	
<input checked="" type="checkbox"/> HAND HYGIENE PERFORMED BEFORE CATHETER INSERTION & MANIPULATING THE CATHETER	<input checked="" type="checkbox"/> HAND HYGIENE PERFORMED BEFORE CATHETER INSERTION	<input type="checkbox"/> HAND HYGIENE PERFORMED BEFORE INTUBATION	
<input checked="" type="checkbox"/> MAXIMAL BARRIER PRECAUTIONS FOLLOWED (GOWN,GLOVES,MASK ETC)	<input type="checkbox"/> ASEPTIC TECHNIQUE FOLLOWED/STERILE EQUIPMENT USED	<input type="checkbox"/> ASEPTIC TECHNIQUE FOLLOWED	
<input checked="" type="checkbox"/> CHLORHEXIDINE SKIN ANTISEPSIS DONE	<input checked="" type="checkbox"/> MAXIMAL BARRIER PRECAUTIONS FOLLOWED (GOWN,GLOVES,MASK ETC)	<input type="checkbox"/> STERILE/ DISINFECTED EQUIPMENT USED	
<input checked="" type="checkbox"/> OPTIMAL CATHETER SITE SELECTION (PREFERRABLY SUBCLAVIAN)	<input checked="" type="checkbox"/> PROPER DISINFECTION OF INSERTION SITE DONE	<input type="checkbox"/> MAXIMAL BARRIER PRECAUTIONS FOLLOWED (GLOVES,MASK,CAP ETC)	
<input checked="" type="checkbox"/> CATHETER INSERTION IS DOCUMENTED/ LABELLED (DATE,TIME & PERSONNEL)	<input checked="" type="checkbox"/> APPLICATION OF LUBRICANT OR ANAESTHETIC GEL	<input type="checkbox"/> ORAL SUCTION DONE BEFORE INSERTION	
<input checked="" type="checkbox"/> ANTISEPTIC DRESSING DONE	<input checked="" type="checkbox"/> CATHETER GENTLY INSERTED	<input type="checkbox"/> ET-TUBE GENTLY INSERTED	
Comments if any ;	<input checked="" type="checkbox"/> REPLACE IF A BREAK IN ASEPSIS OCCURS	<input type="checkbox"/> USED STERILE SUCTION CATHETER AND GLOVES FOR EACH ET- SUCTIONING	
	<input checked="" type="checkbox"/> PROPER SECURING OF CATHETER IN THE BLADDER	<input type="checkbox"/> CHECKED CUFF PRESSURE AND DISLOCATION OF ET- TUBE	
	<input checked="" type="checkbox"/> CATHETERIZATION IS DOCUMENTED / LABELLED (DATE, TIME & PERSONNEL)	<input type="checkbox"/> PROPER SECURING OF ET- TUBE DONE	
	Comments if any;	Comments if any;	
INSTRUCTIONS : IF 'Yes' place "✓" Or "x" if 'No' / Please write comment (if any) in the respective box			

Central Line maintenance checklist in our centre

AIMS - INSERTION BUNDLE FOLLOWUP CHECKLIST																																	
Pt. Name		MRD No 1990176 Dr/Dept 4/1 Rx										ICU CAU																					
CENTRAL LINE BUNDLE FOLLOWUP										CENTRAL LINE REMOVED ON:										DONE BY:													
										20/10 DAY 1			21/10 DAY 2			21/10 DAY 3			21/10 DAY 4			22/10 DAY 5			DAY 6			DAY 7					
										Shift1	Shift2	Shift3	Shift1	Shift2	Shift3	Shift1	Shift2	Shift3	Shift1	Shift2	Shift3	Shift1	Shift2	Shift3	Shift1	Shift2	Shift3	Shift1	Shift2	Shift3	Shift1	Shift2	Shift3
HAND HYGIENE PERFORMED BEFORE & AFTER MANIPULATING THE CATHETER										✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓									
HUB CLEANING DONE BEFORE ACCESSING THE CATHETER										✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓									
DAILY REVIEW OF CATHETER INSERTION SITE										✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓												
U. CATHETER BUNDLE FOLLOWUP										FOLEY'S CATHETER REMOVED ON:										DONE BY:													
PROPER FIXING OF CATHETER ON THIGH										✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓												
UROBAG NOT TOUCHING THE FLOOR										✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓												
URINE FLOW SHOULD REMAIN UNOBSTRUCTED										✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓												
PERFORM ROUTINE HYGIENIC MEATAL CARE										✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓												
HAND WASHING DONE AFTER CATHETER/UROBAG MANIPULATION										✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓												
MAINTAINING CLOSED DRAINAGE SYSTEM										✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓												
URO BAG EMPTIED EVERY 6 HOURS										✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓												
PROPER DISINFECTION OF SAMPLE COLLECTION SITE																																	
URINE ASPIRATED FOR CULTURE USING STERILE NEEDLE & SYRINGE																																	
SPECIMEN TRANSPORTED TO LAB WITHIN 2HRS OF COLLECTION																																	
STERILITY MAINTAINED THROUGHOUT THE PROCEDURE																																	
HANDWASHING DONE AFTER REMOVAL OF GLOVES										✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓												
VENTILATOR BUNDLE FOLLOWUP										DATE OF EXTUBATION:										DONE BY:													
HEAD ELEVATION (30-45°C)																																	
ANTISEPTIC ORAL CARE																																	
DAILY SEDATION VACATION																																	
PUD PROPHYLAXIS																																	
DVT PROPHYLAXIS																																	
ASSESSMENT OF READINESS TO EXTUBATE																																	

INSTRUCTIONS : IF 'Yes' place "✓" Or "x" if 'No' / Please write comment (if any) in the respective box

CLABSI RATE – 2017-2018

MONTH	Total CLABSI Rate	CLABSI Rate in each ICU		
		BMICU	GICU	Neuro-Ortho ICU
OCTOBER	5.03 (2/397)	0	4.27 (1/234)	10.53 (1/95)
NOVEMBER	2.25 (1/445)	0	0	9 (1/111)
DECEMBER	10.68 (5/468)	9.71 (1/103)	7.81 (2/256)	18.35 (2/109)
JANUARY	12.55 (6/478)	10.5 (1/95)	8 (3/250)	22.5 (2/133)
FEBRUARY	0	0	0	0
MARCH	6.71 (3/447)	12.19 (1/82)	0	17.39 (2/115)

MONTH	Total CLABSI Rate	CLABSI Rate in each ICU		
		BMICU	GICU	Neuro-Ortho ICU
APRIL	0	0	0	0
MAY	4.35 (2/460)	0	3.78 (1/264)	8.13 (1/123)
JUNE	11.49 (5/435)	29.41 (2/68)	3.78 (1/264)	19.41 (2/103)
JULY	4.11 (2/487)	11.11 (1/90)	3.71 (1/269)	0

Discussion with the internal team

- We conducted a meeting with ICU in-charge nurses and doctors to discuss regarding strategies to be developed for preventing and reducing CLABSI rate.
- 3 interventions were done in all 3 ICUs
- 3 strategies for each 3 ICUs were planned as a part of the prevention bundle.

COMMON INTERVENTIONS – in all 3 ICUs

1. Blue sheet to cover central line
2. Q syte for central lines
3. Sterile gloves while manipulating central lines

Gamjee pad - Pre intervention



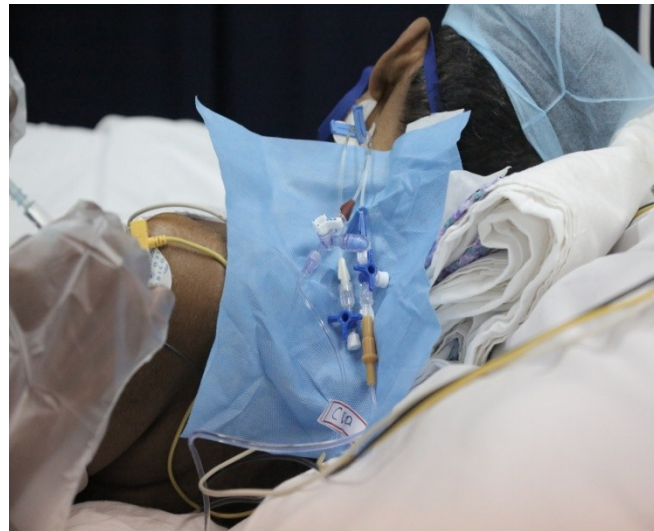
INR 53

Blue sheet - Post intervention



INR 4

Q site for central lines



**Handcare™ while
manipulating central lines**



INR 10

**Sterile gloves while
manipulating central lines**



INR 45

1. In BMICU: Hands on training, followed by observation; followed by reward and penalty

Sr. Fini (Infection Control Supervisor) will be continuing the hands on training which was initiated on Sept 12th till Sept 30th followed by which 2 silent observers will be auditing the central line insertions from Oct 1st to Nov 1st documenting the defaulters.

BMICU

- INTERVENTION - Hands-on training by Infection Control Nurse at patient bed-side



2. In GICU: Process improvement initiative as suggested by Ground Zero staff

- Breach in IC practices
- Provided with Medicine trolley with SOP chart
- Steps towards medication administration and hub cleaning before administration and flushing after administration.

The outcome of these interventions will be assessed by observing the reduction in CLABSI rate.

Medications placed on the bed - pre intervention



Medications placed on trolley - post intervention



3. In Neuro-Ortho ICU: Silent observation

- 2 silent observers
- Record atleast 5 observations/day for 1 month
- Identify staff who are non-compliant or inappropriately executing infection control practices
- Weekly submission and review of these recordings to Ms. Jyothi
- Retraining of staffs who are non-compliant
- Followed by re-auditing.

Neuro-Ortho ICU

- INTERVENTION - Silent observation using checklist - to find those who are non-compliant and provide re-training



CLIP Toolkit Monitoring Form

CLIP Toolkit Facility Level data report

Surveillance Units	Overall Adherence %	IPC Adherence %							
		Hand Hygiene	Mask	Gown	Gloves	Cap	Drape	Skin Prep	Skin Dry
	%	%	%	%	%	%	%	%	%
Facility									
Surveillance Unit 1									
Surveillance Unit 2	0	100	100	100	100	100	0*	100	100
Surveillance Unit 3	0	100	100	100	100	100	0*	100	100

*As per ICMR-CDC manual, **full body drape** is mandated. But our center follows a **half body drape**. Since the Overall Adherence % calculation involves no. of insertions where all elements are adhered , hence we have **zero adherence**.

Half body drape at our center

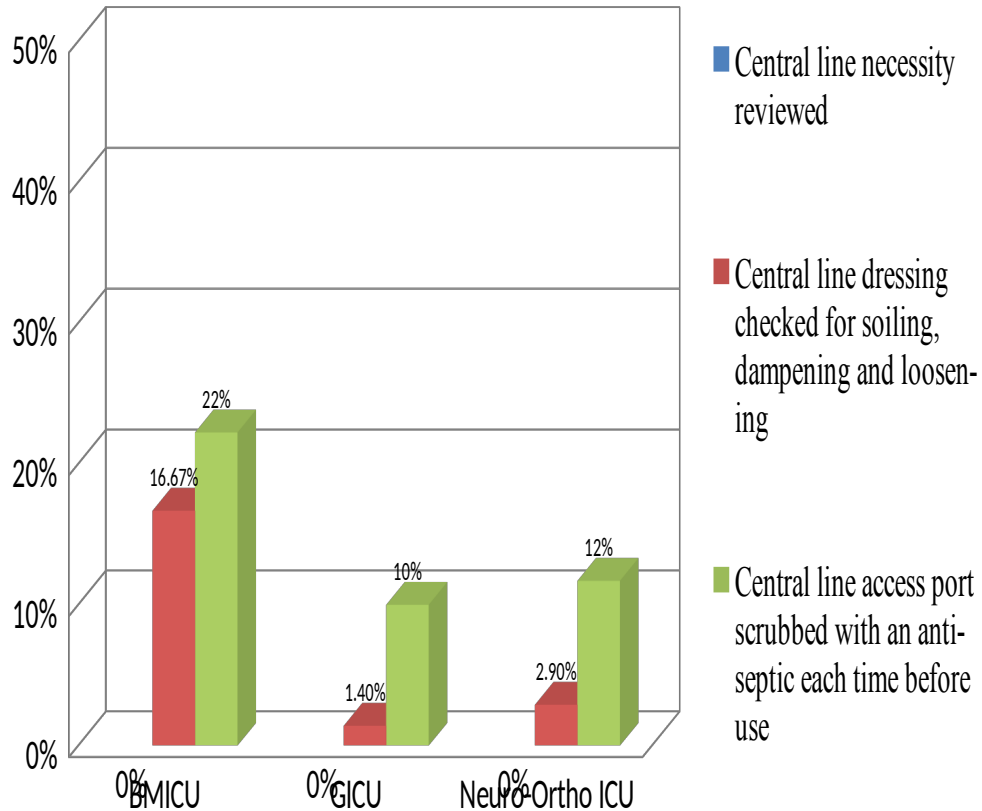


CDC Central line maintenance checklist

Central Line Maintenance Checklist									
Patient ID				Patient name					
Facility name		Surveillance unit			Date of admission to surveillance unit (dd/mm/yyyy) Shift timing (Morning/ Evening? Night)				
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
		<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	
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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	
		<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	

35 ✓

CENTRAL LINE MAINTENANCE CHECKLIST – Non-compliance percentage



Explanation slide

- Maintenance checklist calculation **was done for each question** in the central line maintenance checklist based on the below mentioned formula
- No of 'Nos' / No. Of observations * 100
- Review for necessity of central line and checking of the dressing for soiling and dampening could be done everyday during surveillance **but scrubbing of hub could be checked only when hub was accessed for medication administration during surveillance because of which we have less no. Of observations.**
- For eg: In GICU, the no. of observations for review of necessity and checking of dressing for soiling and dampening was 214 but the no. of observations for access port scrubbing was 20.

Note

- Majority of the patients in our surveillance unit are inserted with central line from operation theaters and emergency room.
- We monitored the central line insertion practices within the respective operation theaters where it was done absolutely in aseptic manner, because of which we have an excellent adherence%.
- We have not monitored insertions within the surveillance unit where few emergency insertions are occurring.

Challenges during Central line audit

- The central line maintenance was assessed during the surveillance. The scrubbing of hub was monitored when central line was accessed for medication administration during the surveillance because of which we have less no. of observations for access port scrubbing

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JULY	4.11 (2/487)	11.11 (1/90)	3.71 (1/269)	0
AUGUST	9 (4/445)	0	4.26 (1/235)	20.8 (3/144)
SEPTEMBER	7.66 (4/522)	0	8.2 (2/244)	10.75 (2/186)
OCTOBER	5.17 (2/387)	0	0	23.53 (2/85)

- We were able to witness a positive trend in CLABSI rate after adopting the strategies.
- The silent observation has helped in identifying defaulters who can be provided with a re-training.
- Further analysis later

ICMR-CDC Site support visit - Action items

The following were the action items at our end:

1. Data analytics to be reviewed from network and match with our outcome / Infection Control report ✓
2. Date of event and date of isolation to be registered and studied ✓
3. CLABSI to correlate with ICMR-CDC software ✓
4. Displaying report and trends of HAIs ✓
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THANK YOU