

“Not just a central line, it’s a life line”



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Introduction

Central line associated blood stream infections (CLABSI) are serious infections that prolong illness, hospital admission time, increase patient mortality and morbidity and health care costs. There are over 3,500 cases of blood stream infections each year with an accompanying mortality rate of just over 10%. Central lines are being managed outside of the ICU more often.

Aims

Our aim was to increase awareness and decrease the incidence of non-ICU central line associated blood stream infections (nCLABSI), through evidence-based education and training.

Methodology

A multi-intervention quality improvement project was designed and implemented in the oncology ward.

The project involved a series of strategies including: root cause analysis; assessing and re-training of staff in all relevant policy and protocols; infection control; and audit and feedback methods.

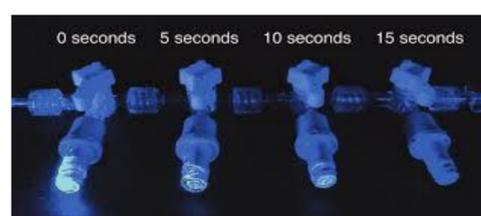
Clinical leadership support was achieved by actively engaging the Clinical Education and Infection Prevention teams and the Nurse Unit Manager in the project.

The project was implemented May 2018-2019 and involved the following activities:

- (1) 33 (77%) of central-line competent staff **re-completed mandatory training** in aseptic technique, hand hygiene, accessing central lines and intravenous medication preparation administration.
- (2) **Twice weekly ward huddles** to promote the project.
- (3) **Map enabled experiential review quality assessment tool (MEERQAT) for national standard-3** was run weekly over 1-month at project commencement and at 3-months post.
- (4) **Ongoing surveillance of nCLABSI rates (using the VICNISS criteria) and weekly audit and feedback.**
- (5) **Individualised feedback** regarding clinical practice and aseptic technique.



Scrub the Hub



Results

Root-cause analysis identified the following factors contributing to non-ICU CLABSI (Table 1).

Table 1: Root-cause analysis –contributing factors

Potential contributing Factors	Risks Identified	Strategies/practice recommendations
Hand Hygiene	<ul style="list-style-type: none"> •Noncompliance with basic practice in hand hygiene •Missing ‘moments’ •Absence of gloves while drawing up medications •Absence of drawing up needles for flushes & medications •Poor compliance to disinfection on hubs 	<ul style="list-style-type: none"> •Glow gel (huddle) •Bare below the elbows •Watches etc
Environment	<ul style="list-style-type: none"> •Noncompliance with preparation of aseptic field for preparation or administration of antibiotics •Absence of aseptic technique compliance wiping down trolley or using dedicated field •Administering drugs using bed or bedside tables 	<ul style="list-style-type: none"> •Introduction of the use of trays for preparation of IV infusions with re-education e.g. •Implementation of routine surface cleaning before and after procedures tables

Potential contributing Factors	Risks Identified	Strategies/practice recommendations
Administration frequency/line interruption	<ul style="list-style-type: none"> •Multiple accessing of the port •Access and de-accessing for intermittent chemo with day/weekend leave 	<ul style="list-style-type: none"> •Look at implementing a 10ml/hour infusion for patients with more than 4 access's per day to reduce connection and disconnection times. (with consideration for ambulant independent people who do not wish to have IV connected) •Provide patients with 'how to' care guide for CVC's.
Patient	<ul style="list-style-type: none"> •Contaminated on initial access •Adherence to the cleaning process (scrub the hub) •Potential unnecessary disconnection of IV lines for ADL's/radiology visits •Re-looping IV line back on its self •Integrity of the dressing 	<ul style="list-style-type: none"> •A solution containing two per cent chlorhexidine gluconate (CHG) in \geq 70% isopropyl alcohol (alcoholic chlorhexidine) should be used by clinicians for preparation of the insertion site (2). •Ensure once lines are disconnected new lines are prepared and hung (2). •Stop looping line back on itself (2). •Replace dressings PRN and document integrity.

Outcomes

Non-ICU CLABSI rates were monitored over the following 12-months and demonstrated a clinically significant decrease in infection rates.

At 1-year, the non-ICU CLABSI rates decreased from 12 to 3 including all patients including those with absolute neutropenia.

Excluding those who did not meet VIC NISS reporting criteria, non-ICU CLABSI rates decreased from 4 to 1.

Table 2: Change in rate of Non-ICU CLABSI per 1000 line days

	April 2017-March 2018	April 2018 - March 2019
Reportable and non reportable (Includes all neutropenic/pancytopenic patients)	2.88/1000 line days	0.72/1000 line days
Reportable CLABSI	.96/1000 line days	0.24/1000 line days

Conclusion

This multi-faceted QI project has successfully decreased nCLABSI rates below the state benchmark and this approach is now being rolled out across the organisation.

This project was approved as a Quality Improvement activity.