Refining process to improve outcomes in cancer care: impact of a multi-modal infection prevention program utilising new technologies

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Introduction

Infection prevention frameworks have been enhanced during the COVID-19 pandemic. We report the impact of implementing new technologies, refined auditing practices and a new nursing link program at a quaternary cancer centre during the pandemic.

Methods

The following program elements were implemented over a 6-month period (2020): (i) new technologies for education and auditing of process measures, (ii) refined auditing practices, and (iii) a nurse link program.

These practice changes were supported by an increase in infection prevention resources (2.4 to 3.4 EFT) and overseen by the Infection Prevention Committee. The application of new electronic resources has been used to monitor and improve compliance.

Results

Electronic tools were developed and introduced for mandatory infection prevention training of staff and auditing of hand hygiene and aseptic technique in clinical departments.

Hand Hygiene

Continuous, electronic data collection for all hand hygiene auditing across all designations was implemented across 8 key clinical areas. This replaced periodic, paper based auditing.

This practice change, together with weekly and additional reporting to clinical units via the executive team, has increased awareness and enhanced healthcare worker designation compliance to meet NHHI and State targets.

Continuously capturing a minimum of 50 moments per month has also made auditing a 'business as usual' practice.

Targeting the compliance of all craftgroups, including the medical workforce, is enhanced with this process.

Alternative hand hygiene monitoring was implemented for outpatient settings such as Radiation Therapy where patients and staff hand hygiene is observed on entry and exit using a digital audit tool (REDcap via a QR code) to record the observations.

Liaison Programme

A new nurse-link infection prevention programme was initiated for clinical departments, with a 30 minute monthly educational meeting providing updates and feedback to staff. The role of the locally recognised liaison person is to embed and promote infection prevention strategies and procedures, and their application in preventing healthcare associated infections.

Aseptic Technique

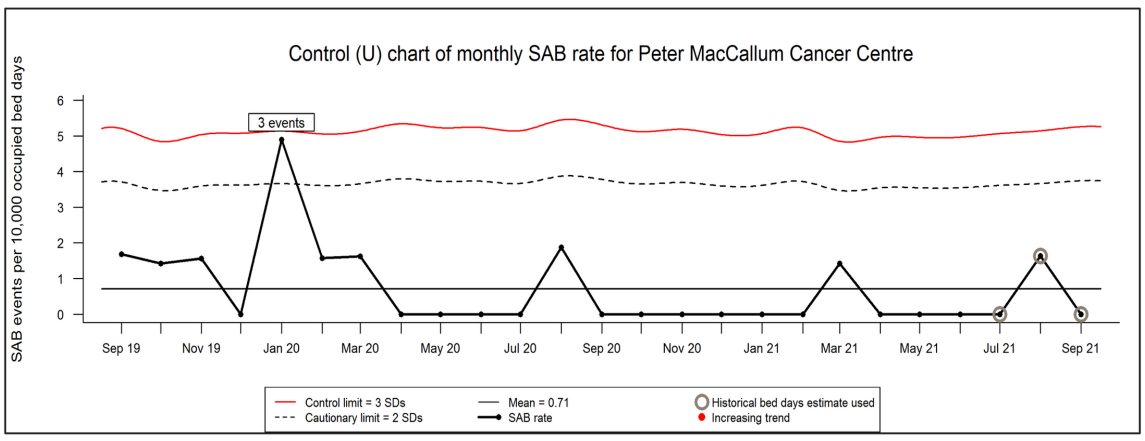
A digital audit tool was developed for monitoring and reporting aseptic technique compliance whilst also providing an opportunity for peer auditing. It is undertaken electronically using a REDCap survey with a QR code and includes 15 questions. All clinical healthcare workers are encouraged to perform at least one audit annually and to be audited at least once annually themselves, focusing on high risk procedures e.g. accessing central lines.

ASEPTIC TECHNIQUE AUDITING 2020-2021 (N=217)	
Appropriate aseptic field is chosen for standard or surgical procedure and clinician skill level	(211, 97.7%)
Hand hygiene is performed before preparing aseptic field and equipment	(214, 99.1%)
Aseptic field is prepared without contamination	(209, 97.2%)
Hand hygiene before:- app'n of sterile gown and gloves; non-sterile gloves or immediately before procedure	(215, 99.5%)
Skin or device (key site or key part) is prepared using appropriate solution	(215, 99.5%)
Skin or device (key site or key part) is prepared using adequate time	(211, 98.6%)
Procedure is carried out without contamination of key parts and key sites	(214, 98.6%)
If contaminated, was the item/field replaced?	(1, 100.0%)
Non-touch technique is used (where appropriate)?	(215, 100.0%)

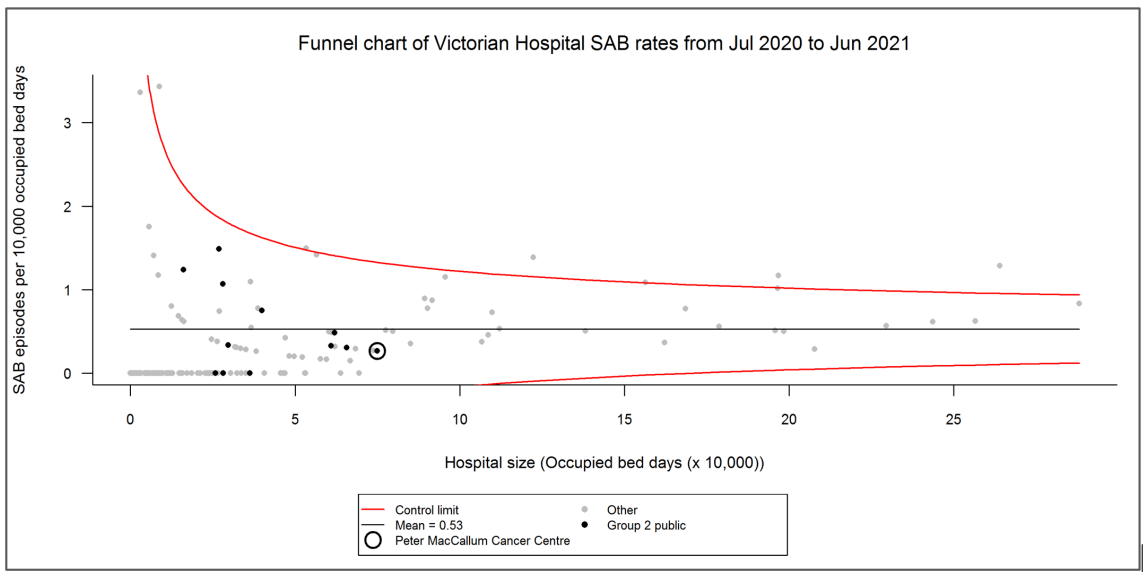
With appreciation to Alfred Health for offering their resources for the adaptation of this tool

Electronic technology for both hand hygiene and aseptic technique has:

This has subsequently contributed to reducing Healthcare-associated Staphylococcus aureus bloodstream infection rates which previously were 1.6/10,000 occupied bed days (OBDs) during the 12-months prior to implementation and 0.3/10,000 OBDs in the 12-month period following implementation. This is below the VICNISS 5 year aggregate of 0.6/10,000 OBDs.



- SAB rates have continued to trend downwards.



- Peter MacCallum Cancer Centre is below the state-wide mean.

Conclusion

Refinement of a multi-modal infection prevention program with the adoption of new technologies has demonstrated improved quality of care and resource allocation amidst pandemic responses. These changes are potentially relevant to a range of healthcare settings, including non-cancer care.

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