

#### A comprehensive care bundle reduces harm in patients with Central Venous Access Devices: A QI project

02 51245616

@DrHarshel



Harshel.parikh@act.gov.au

www.canberraicu.org.au

Harshel G Parikh<sup>1,4</sup>, Andrew Deacon<sup>2,4</sup>, Guilherme Costa<sup>1,5</sup> Shelayah McMillan<sup>1,6</sup>, Andrew Habig<sup>3,4</sup>, Nikhil Patel<sup>2,5</sup>, Jennifer Bath<sup>2,4</sup>, Kelvin Grove<sup>1,4</sup>

1 Intensive care unit, 2 Department of Anesthesiology, 3 Emergency department, 4 Staff-specialist, 5 Senior registrar, 6 Registered nurse, The Canberra Hospital, Garran, ACT 2605

In 2019,

CLABSIs per Per 4911 ICU line days

Major

vascular

22.87% 32%

Patients with a CVAD

the ward

discharged from ICU to

CVADs removed beyond recommended date in the wards

# Background

- In 2019, Australia and New Zealand reported 0.53 CLABSIs per 1000 lines days (111 per 209173 Line days)
- **0.1** to **1%** reported to have major vascular complications in literature
- Majority of CLABSIs were noted in patients with a CVAD inserted **outside** Canberra Hospital and patients discharged with a **CVAD** to the ward.

# Aims

days

1000 lines

Reduce CLABSI rate to zero lines per 1000 lines days

complications

- Reduce the major vascular complications to zero
- Decrease the patients discharged with a CVAD by 50 %to the ward
- Achieve at least 80% ICU JMOs accredited for CVC insertion

### **Identified Risk factors**

Lack of uniformity in training, education, standardised insertion packs, and equipment

## **Example 2** Interventions

Multidisciplinary team from ICU, anesthetics and emergency medicine at the Canberra Hospital

Policy and checklists

Staff education

Staff accreditation



 Combined ICU and • Use of column Anesthesia orientation manometry or pressure Focus on vascular transduction in addition ultrasound & aseptic to US confirmation of technique guidewire CVC insertion supervisor checklist Standardization **CVC** insertion 回型设备 CVC insertion video technique **CVAD** Discharging with a CVAD to a management in ward Updated CVAD polic Only under nursing management **EXCEPTIONAL** and education circumstances Replacing CVAD inserted CVAD flag and outside Canberra proposed Hospital recommended date of removal for ward teams Mandatory reporting of complications Clear documentation and verbal handover

Complete e-learning module on hand hygiene and CVC education pack on Capabiliti and OSLER before orientation

> Assessment of competency on vascular ultrasound and CVC insertion technique on a mannequin at orientation

> > Supervision by a senior registrar or a specialist until judged competent

#### In 2020,

CLABSIs per

1000 lines

days

per 3835 ICU lines days

Major vascular complications 8.2% 5.2%

Patients with a CVAD discharged from ICU to the ward

Results and outcomes

**CVADs** removed beyond recommended date in the

wards

77% JMOs accredited for CVC competency

8 Education sessions in ICU and Anesthetic department

7 New policies, check lists, education packs and equipment

### Sustainability

- Mandatory training and accreditation process for critical care JMOs and nurses
- Prospective surveillance of CVADs in ICU and wards
- Business case for CVAD nurse for the wards
- CVAD flag on patients records on upcoming DHR

# Key messages

- 0 CLABSI achievable and sustainable
- Major vascular injuries are preventable
- Important to identify the weakness and address it
- Multidisciplinary approach and ongoing staff engagement is a key
- CLABSI: Central line associated blood stream infection, CVAD: Central venous access device, CVC: Central venous catheter