# **TO REDUCE CENTRAL VENOUS CATHETER DISLODGEMENT INCIDENCES**

RESUL

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## BACKGROUND

Central Venous Catheter (CVC) is an important monitoring and delivering line inserted invasively into the central big vein by trained physicians. It is used to monitor body volume status and heart function to guide treatment and drugs administration. CVC dislodgement is an unintentional and inappropriate premature removal of CVC that exposes patients to risk of air embolism, catheter fracture, dislodgement of thrombus, bleeding, infection, hemothorax and pneumothorax which can interrupt treatment and lead to serious complications.



For the period between May 2017 to June 2019 there were **total of 18 cases** of CVC dislodgement in NHCS ward. 56% of these were unavoidable cases as patients were restless, confused and aggressive due to delirium. Hence, the team focused to target at the other 44% of the cases that were due to other avoidable factors.

## Target

ZERO incidence of CVC dislodgement due to avoidable causes

### **METHODOLOGY ROOT CAUSES** SOLUTIONS Lack of Good Standardised Practice **Standardised Clinical Practice** Standardised CVC anchoring method to Inconsistent anchoring method for 2 sutures with lock length or 3 to 4 different types of CVC





Poor dressing and taping method



- Lack of CVC dislodgement preventive care components in existing CVC Care Bundle
- Daily rounds protocol SERVE do not include CVC orientation and assessment



 Standardised CVC dressing method and extension line taping method with additional securement on the extension line and 3 port extension



- Developed a daily CVC assessment tool using **ADSR**
- Anchoring stitches situ in and according to standards,
- Dressing intact and properly done,

### in CVC dislodgement cases 2

### **BEFORE** Implementation $\bigcirc$







Time Savings:

300 minutes saved per

Time: 300 minutes needed per **Re-insertion** 

Manpower: 9 staff (5 nurses, 2 doctors, 2 QM committee) needed per re-insertion

Material: \$362 needed for CVC removal, CVC re-insertion and post CVC care

Time, manpower and material resources are uncountable due to potential needs for resuscitation

**Patient's** 

Positive

Feedbacks

Improved

Quality of

Care

dislodgement avoided Manpower Savings: 9 staff manpower saved per incidence

> **Material Savings**: \$362 savings per dislodgement avoided

Resuscitation due to CVC dislodgement could be avoided

### Intangible Results

- Patients find the dressing comfortable, no tagging sensation, no itchiness or pain at the CVC site Patients are taught how to take care of CVC
- Nurses constantly check the CVC during handover and rounding



- Secure the heavy tubings on skin,
- **R**emove unnecessary lines
- Incorporated ADSR+O line assessment tool inside the routine SERVE nursing handover
  - Orientation
- Inadequate assessment CVC of dressing integrity, poor dressing and taping material causing skin irritation



Standardised 3M CHG dressing material and taping method



- Reduce risk of infection and complication
- Patient safety and satisfaction
- Manpower time saved for quality patient care
- Improve efficiency in the delivery of care

# CONCLUSIONS

With the standardisation of dressing materials, it ensures safety and good securement for the prevention of CVC dislodgement. Daily patient orientation and device assessment provides additional benefits to overall patient clinical outcomes and disease recovery. Thus, improving efficiency and the quality of care. Furthermore, these standardization methods and practices from anchoring to dressing and securement can be used for other similar invasive devices and adopted by other institutions.