INNOVATION Awards 2013

Connecting Minds
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# Reducing the incidence of *Staphylococcus aureus* bacteraemia by managing vascular access devices in the Coronary Care Unit.

Harry Collins Award

## Introduction

*Staphylococcus aureus* bacteraemia (SAB) is a common and often preventable complication of health care.

Two thirds of health care associated SABs are caused by vascular access devices (VADs).

The Coronary Care Unit (CCU) accounts for over a quarter of Liverpool Hospital VAD-related SABs with five cases detected between February and August 2012.

## Aim

To identify preventable factors that can lead to VAD-associated SABs, implement an effective and sustainable system for optimal VAD care and prevent all cases of VAD-associated SAB in the CCU over the period of the project.

| Factors associated with vascular access device bacteraemia |
|---|
| Poor insertion technique |
| Appropriate equipment not available on trolley |
| Poor documentation of insertion |
| Insertion site incorrectly dressed |
| Prolonged cannula dwell time |
| Unnecessary cannulation |
| Failure to recognise and act on complications |

*Determined by review of cases and VAD auditing.*

LIVERPOOL HOSPITAL

## Interventions

### 1. Raise awareness, prioritise VAD care

- Education of nursing and medical staff
- VAD resource nurses appointed
- Feedback of performance

### 2. Optimise insertion of VADs

- Standardised cannulation trolley, stock control
- Simple insertion bundle

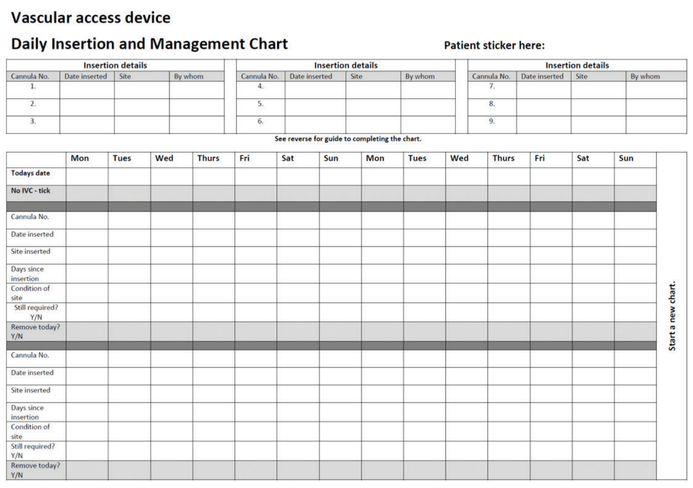
**PIVC Insertion Bundle**

1. Confirm PIVC is **required**
2. Wear **sterile** gloves
3. Use **2% chlorhexidine in 70% alcohol** to prepare the site
4. Use a **transparent dressing** – make the insertion site visible
5. Write the **date** of insertion on the cannula dressing
6. Document the insertion in the patient's notes
7. Change the administration set

Compliance with *all* bundle items is mandatory for optimal insertion.

### 3. Optimise daily maintenance of VADs

- new VAD daily checklist – action oriented
- 'cannula conversation'- medical/nursing
- remove when meets criteria



Vascular access device

Daily Insertion and Management Chart

Patient sticker here:

| Insertion details | | | | Insertion details | | | | Insertion details | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Cannula No. | Date inserted | Site | By whom | Cannula No. | Date inserted | Site | By whom | Cannula No. | Date inserted | Site | By whom |
| 1. | | | | 4. | | | | 7. | | | |
| 2. | | | | 5. | | | | 8. | | | |
| 3. | | | | 6. | | | | 9. | | | |

See reverse for guide to completing the chart.

| | Mon | Tues | Wed | Thurs | Fri | Sat | Sun | Mon | Tues | Wed | Thurs | Fri | Sat | Sun | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Todays date | | | | | | | | | | | | | | | |
| No IVC - tick | | | | | | | | | | | | | | | |
| Cannula No. | | | | | | | | | | | | | | | |
| Date inserted | | | | | | | | | | | | | | | |
| Site inserted | | | | | | | | | | | | | | | |
| Days since insertion | | | | | | | | | | | | | | | |
| Condition of site | | | | | | | | | | | | | | | |
| Still required? Y/N | | | | | | | | | | | | | | | |
| Remove today? Y/N | | | | | | | | | | | | | | | |
| Cannula No. | | | | | | | | | | | | | | | |
| Date inserted | | | | | | | | | | | | | | | |
| Site inserted | | | | | | | | | | | | | | | |
| Days since insertion | | | | | | | | | | | | | | | |
| Condition of site | | | | | | | | | | | | | | | |
| Still required? Y/N | | | | | | | | | | | | | | | |
| Remove today? Y/N | | | | | | | | | | | | | | | |

Start a new chart.

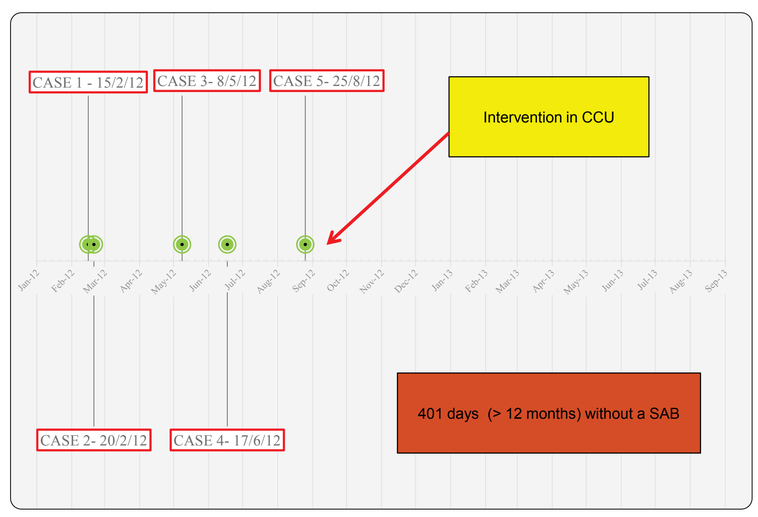
### 4. Educate and empower patients

## Results

### Acceptability

- Cannulation trolley - 66% well stocked
- Insertion bundle - 80% found it useful
- Daily checklist - 100% found it useful
- Likes - easy to understand, action oriented

### Timeline - *S. aureus* bacteraemia in CCU




## Conclusion

### Effectiveness

This project was effective because it involved collaboration, empowerment, and feedback whilst utilising a simple checklist approach.

### Strategies for sustaining and extending

- adopt this program hospital-wide
- incorporate cannula conversation' into multi-disciplinary rounds – 'in safe hands'
- empower patients in the care of their VADs
- eliminate unnecessary duplication
- include VAD care as a KPI - display on the Quality and Safety noticeboard
- use the same techniques when targeting other healthcare-associated infections


## Acknowledgements

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NSW GOVERNMENT Health
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