

# Improving Veteran Care by Identifying a Preventable Infection

## Literature Review of Peripheral Catheter Related Bloodstream Infection at the Birmingham Veterans Administration Healthcare System

Lisa Marie Cargile MS,BSN,RN,CCRN,VA-BC (IV Therapy RN) Henrick Holmberg MSN-NE, RN, NEA-BC, CNML Christopher Segraves BSN, RN, VA-BC

### BACKGROUND

After a recent Peripheral Catheter Related Bloodstream Infection (PCR-BSI) event involving a Veteran at the Birmingham Veterans Administration Healthcare System (BVAHCS), an investigation, based on a literature review of Evidenced Based Practices (EBP) was conducted to compare the BVAHCS Peripheral Intravenous Catheter (PIVC) bundle currently in use and identify areas of improvement.

### PURPOSE

Assess and identify if the BVAHCS PIVC Bundle is current with EBP, then create a plan to improve any identified deficiencies.

### METHODS

**Databases:** PubMed, Google Scholar, OVID, and EBSCOhost

**Keywords:** peripheral intravenous catheter (PIVC), bloodstream infection(BSI), bundle, prevention

**Number of Articles:** 20 Reviewed, 12 referenced

**Analysis:** After extracting information from the full text of each entry related to bundles and prevention of BSI, seven PCBSI prevention strategies were identified. The findings were compared to the current BVAHCS PIVC bundle for similarities and differences.

### Identified EBP Prevention Strategies

- PIVC Bundle
  - ❖ the term 'bundle' refers to a grouping of activities that support and prevent an undesired event
- Aseptic Technique
- Skin Antisepsis
- Proper Hand Hygiene
- Catheter Maintenance
- Prompt Catheter Removal
- Sterile, all-in-one pre-assembled IV start kits

### Current BVAHCS PIVC Bundle Intravascular Access Program Standard of Practice 118-101

#### Insertion

Hand Hygiene  
Identifying an appropriate site:  
Distal Forearm, Cephalic, Basilic or Median veins  
Identifying an appropriate vein:  
Veins should be round with firmness and rebound to pressure  
Aseptic 'No Touch' Technique (ANTT)  
Chlorhexidine skin antisepsis  
Label insertion time and date  
Patient Education  
Documentation: VAAES NSG IV Insertion and Maintenance note in CPRS<sup>1</sup> under 'Insertion'

#### Maintenance

Hand Hygiene  
ANTT  
Assess line necessity daily including:  
Site assessment  
Alcohol impregnated disinfecting caps will be in place when not in use  
Flush q8hr  
Ensure device is secured  
Dressing change every 7 days or as needed if it becomes loose, wet, or soiled  
Patient Education  
Documentation: VAAES NSG IV Insertion and Maintenance note in CPRS<sup>1</sup> under 'Assessment'

<sup>1</sup>CPRS is the EHR of BVAHCS

#### Removal

If there are no concerns, a PIV is considered patent for 7 days, after 7 days a new site is required.  
If PIVC is inserted prehospital it should be removed and replaced within 24 hours of admission  
Remove and replace site if  
Sign or symptoms of complications are noted  
Patient Education  
Documentation: VAAES NSG IV Insertion and Maintenance note in CPRS<sup>1</sup> under 'Discontinue'

### CONCLUSION

After a thorough literature review, the current policy was determined to be in line with current EBP. The current BVAHCS PIVC bundle addresses the seven identified PCBSI prevention strategies of in the literature review.

### CLINICAL RELEVANCE

This outcome of the literature review has revealed that despite SOP 118-101 encompassing the seven EBP prevention strategies identified, there may deficiencies in the execution of the PIVC bundle with the frontline staff. This highlights a need for review of the education provided towards the implementation of the PIVC bundle.



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