Central line associated bloodstream infections (CLABSIs) are a major problem in healthcare today and can be life-threatening to patients. One acute-care facility was experiencing an unacceptable rate of bloodstream infections when they decided to hire a nurse educator dedicated to teaching staff proper techniques in care and maintenance of central lines. Deficits in care and maintenance of central lines were identified by surveillance and by talking with staff: (1) scrubbing the hub had nearly disappeared, (2) needless connectors were not being changed on a routine basis, (3) flushing practices were inadequate, (4) CVC dressing change practice varied, and (5) TPN line care was lacking.

A one-week hospital-wide mandatory series of classes was conducted for all healthcare workers who manipulate central lines. Resultant interventions included implementing the Bundle for Insertion and for Care and Maintenance, house-wide CHG bathing for patients with central lines, updating the TPN policy, and standardizing practices. In addition, the medical staff passed a policy for Indications for Central Line Use, and midline catheters, rather than PICCs, are now encouraged and used in appropriate patients.

The effect of the implementation of these changes was that no CLABSIs were reported in the 50 days following the week-long series of classes. Implications from this immediate decrease in infections are that compliance with the Bundle along with staff education/support are effective methods in reducing CLABSIs. Surveillance, one-on-one coaching, and classes for current and new staff will continue.

**Objectives**
- Decrease CLABSI rate
- Identify areas for improvement in central line care
- Provide staff education for central line care and management
- Implement the Bundle
- Develop system to maintain improvements in line care

**Methods**

**CONDUCT SURVEILLANCE TO DETERMINE DEFICITS IN CENTRAL LINE CARE IN**
- All nursing units
- Cath Lab, IR, OR, CT, MRI, Nuclear Medicine, Pharmacy

**ANALYZE DATA**
- Staff was not “scrubbing the hub” (their impression was that using swab caps eliminated need for scrubbing)
- Flushing practices were inadequate
- Lumen patency was not verified each shift
- TPN line care was deficient
- Needleless connectors were not being changed routinely with tubing changes

**DEVELOP PLAN OF ACTION**
- Provide education
  - Mandatory classes for all staff who manipulate central lines (6 classes day/5 days)
  a) Emphasize/teach central line standards of care and management (focused on identified areas of deficiency)
  b) Assess dressing change return demonstrations done by staff
- Implement Bundle
  - For Insertion
  - For Care and Maintenance

**Results**
- CLABSI rate decreased immediately
  - No CLABSI reported for 50 days after completion of staff education
  - CLABSI rate decreased by 50% in the first half of 2015
- Areas of deficient line care were identified
- Mandatory education was completed
- Bundle was implemented
- System now in place to maintain improvements
  - Mini teams on each unit to
    a) Support and be a resource to peers
    b) Conduct surveillance of lines
  - Central line care education continues
    a) For all orientees
    b) Intermittently for all staff review
    c) On 1:1 and in small group basis as needed

**Conclusions**
- Staff education and Bundle implementation produced immediate improvements in line care and in reduction of the CLABSI rate
- Staff has increased awareness and vigilance regarding central line care and maintenance
- Staff requested more “live education” and expressed gratitude for classes
- Continued education is needed due to
  - Staff becoming more relaxed about line care
  - New staff/turnover
- Surveillance of lines will continue using a tracking sheet
- Surveillance data to be reviewed monthly at CLABSI and Safety Meetings