Joint Commission Bundle

Purpose of this protocol is to provide a standard of maintenance bundle components to reduce the occurrence of Central-line associated bloodstream infections

Components:
- Daily review of line
- Hand hygiene
- Central venous catheter protective connector caps
- Site dressing
- Central venous catheter access/manipulation
  - Chlorhexidine*
  - Set replacement
  - Health care personnel training

**Conclusions**
- Compliance with maintenance bundle use decreases rate for CLABSI occurrence.
- Sterile and transparent dressing which are the recommendations from TJC are equivalent in reducing CLABSI.
- Chlorhexidine impregnated dressing should significant decrease in CLABSI occurrence.
- The use of lumen caps reduced rates of CLABSI.
- Chlorhexidine as cleaning agent during catheter-related infections: a randomized controlled trial.

**Search Process**
- Databases searched:
  - PubMed, CINAH Complete, NCBI, Ovid
- Central venous catheter, Bundle, Chlorhexidine, Infection, dressing, and Caps
- 163 articles retrieved
- Ten articles reviewed

* Protocol components reviewed.

<table>
<thead>
<tr>
<th>Article Title</th>
<th>Review of Literature</th>
<th>Method Design</th>
<th>Level of Evidence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Effect of central line bundle on central line associated bloodstream infections in intensive care units</td>
<td>Supporting the overall effectiveness of utilizing bundles as a whole to prevent CLABSI</td>
<td>Surveillance study</td>
<td>3</td>
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<tr>
<td>Central line associated bloodstream infections among critically ill patients in the era of bundle care</td>
<td>Supporting the overall effectiveness of utilizing bundles as a whole to prevent CLABSI</td>
<td>Prospective Surveillance study</td>
<td>4</td>
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<tr>
<td>Reduction of central venous line associated bloodstream infection rates by using chlorhexidine containing dressing.</td>
<td>CLABSI rates decrease due to the use of CHG devices impregnated. CHG devices confirmed to be good for 7 days, reducing the occurrence of having to change them out and reducing the chance for infection</td>
<td>Quality improvement</td>
<td>5</td>
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<td>Comparison of transparent polyurethane film and sterile gauze as dressing material for central venous access</td>
<td>The CHG impregnated foam is better than the other types of dressings used. Transparent dressing is more cost effective.</td>
<td>Comparative study</td>
<td>4</td>
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<tr>
<td>The use of Surgihoney to prevent or eradicate bacterial colonization in dressing oncology long vascular lines</td>
<td>Surgihoney can be used as an antimicrobial in dressings for central line • Prevented colonization of microbes in all patients • Cleared colonization in patients with preexisting colonization</td>
<td>Program evaluation</td>
<td>4</td>
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<tr>
<td>Reducing bloodstream infection with a chlorhexidine gel IV dressing</td>
<td>Transparent dressing with CHG is more effective than a regular transparent dressing • Provides visibility of transparent dressing and CLABSI prevention with CHG</td>
<td>Randomized</td>
<td>5</td>
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<td>Central venous catheter protective connector caps reduce intraluminal catheter related infection</td>
<td>Cost efficient with net savings of $40,000 on caps used. Alcohol impregnated caps reduces infection risk</td>
<td>Non-randomized prospective trial</td>
<td>3</td>
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<tr>
<td>Impact of universal disinfection cap implementation on central line associated bloodstream infections</td>
<td>Greater than 40% decrease in infections • Increased compliance rates were associated with lower infection rates • $300,000 savings with use of caps</td>
<td>Quasi-experimental intervention study</td>
<td>3</td>
</tr>
<tr>
<td>Chlorhexidine, Octenidine or Povidone iodine for catheter related infections: a randomized controlled trial.</td>
<td>The use of 4% chlorohexidine yielded better results than 10% Octenidine HCL and Povidone iodine • 2% and 4% chlorhexidine are the optimal choice</td>
<td>Randomized study</td>
<td>2</td>
</tr>
<tr>
<td>Daily skin cleansing with chlorhexidine did not reduce the rate of central line associated bloodstream infections</td>
<td>Statistical reduction in microbial colonization on patient’s skin, showing that the technique of bathing in CHG was effective. • 2% CGH was not helpful in preventing infections</td>
<td>Quasi-experimental, pre-post study</td>
<td>3</td>
</tr>
</tbody>
</table>

**Conclusions**

- Compliance with maintenance bundle use decreases rate for CLABSI occurrence.
- Sterile and transparent dressing which are the recommendations from TJC are equivalent in reducing CLABSI.
- Chlorhexidine impregnated dressing should significant decrease in CLABSI occurrence.
- The use of lumen caps reduced rates of CLABSI.
- Chlorhexidine as cleaning agent during catheter-related infections was most effective in reducing CLABSI rates.

**Recommendations for Practice**

- Chlorhexidine impregnated dressings should be added to TJC protocol as the preferred dressing.
- Sterile and transparent dressings should be used when Chlorohexidine dressing is contraindicated.
- Protective caps should be used over “scrub the hub” technique.
- The standard cleansing agent in TJC protocol should be 4% Chlorohexidine.