

## Supplementary Table

<b>SEPSIS PREVENTION IN NICUs GROUP (SPRING): Timeline</b>	
Sep-Dec 2011	<p><b>Commencement of SPRING Group meetings: September 2011</b></p> <p><b>Data</b>            Development of Standard Definition of Sepsis            Target Group Identified: Neonates &lt;29 weeks gestation, censored to 3-35 days            Development of Standard “on-line” Data Sheet for Sepsis Review</p> <p><b>Quality Improvement</b>            Audit of PICC practice by Clinical Nurse Consultant group            Agreement to develop standard PICC line insertion and maintenance guidelines for neonates, including development of a DVD demonstrating standard approach</p>
Jan-June 2012	<p><b>Data:</b>            Data collection commenced, using standard data sheet for sepsis review.</p> <p><b>Quality Improvement</b>  <b>Focus on Potentially Better Practices</b>            Literature review of Potentially Better Practices to reduce sepsis.            Practice changes based on individual NICU requirements.</p> <p>All NICUs:</p> <ul style="list-style-type: none"> <li>• Infection Review Meetings</li> <li>• Development of standard PICC Line Insertion Procedure</li> <li>• Training of hand hygiene champions</li> <li>• Commencement of Hand Hygiene Australia: “5 Moments for Hand Hygiene” initiative: before patient contact, before aseptic task, after body fluid exposure risk, after patient contact, after contact with patient surroundings</li> <li>• Training of hand hygiene champions</li> <li>• Provision of alcohol hand rub/gel adjacent to all NICU beds</li> </ul> <p>Additional practices planned to be introduced into individual NICUs included:</p> <ul style="list-style-type: none"> <li>• Clinical Sinks - sterilisation or relocation</li> <li>• Environmental monitoring</li> <li>• Change in Skin Preparation solutions</li> <li>• Provision of individual patient equipment at the bedside, e.g. stethoscopes, pens</li> <li>• Standardised equipment trolleys or packs for PICC line and IV line insertion.</li> <li>• Review use of gowns and sterile gloves</li> <li>• Change to 48 hour TPN bags to reduce frequency of solution change.</li> </ul>
July-Dec 2012	<p><b>Resource Development</b>            Development of automated data retrieval and sepsis reports.            Development of PICC Line Procedure and Teaching DVD</p> <p><b>Skills Development</b>            Clinical Practice Improvement Workshop, with a focus on Infection Reduction in Neonates, presented by Clinical Excellence Commission.            Workshop attended by medical and nursing representatives from all participating hospitals.</p>

<p>Jan-June 2013</p>	<p><b>Data</b> Monthly Sepsis reports reviewed by SPRING group</p> <p><b>Quality Improvement</b> <b>Focus on Standard Approach to PICC Insertion and Management</b> Neonatal PICC Insertion DVD launched (Feb 2013)<sup>24</sup> Education sessions on standard PICC line insertion and management in all NICUs for medical and nursing staff, including demonstration using teaching video. PICC line insertion video provided to staff in all NICUs via Neonatal Database or Perinatal Services Network website: <a href="http://www.psn.org.au/clinical-resources">http://www.psn.org.au/clinical-resources</a> Standard approach to PICC line insertion introduced into all NICUs by May 2013, including:</p> <ol style="list-style-type: none"> <li>1. Training for clinicians inserting PICC lines</li> <li>2. Two person procedure</li> <li>3. Clinician asepsis bundle: 2 minute procedural hand wash, sterile gown, gloves, hat, mask</li> <li>4. Patient asepsis bundle: skin asepsis, full drape of patient</li> <li>5. Surveillance of procedure</li> <li>6. Documentation of procedure, including PICC line insertion form</li> </ol>
<p>July- Dec 2013</p>	<p><b>Data</b> Monthly Automated SPRING reports distributed automatically to Senior Medical and Nursing Staff (including Neonatologists, Nursing Unit Manager, Clinical Nurse Consultant, Audit Officer) for 7 of 8 participating NICUs.</p> <p><b>Quality Improvement</b> <b>Focus on peripheral intravenous lines.</b> Agreed to standardise approach to peripheral IVs, including: Use of sterile gloves and Aseptic Non-Touch Technique for IV insertion. Use of “scrub the hub” procedure prior to access using either 2% Chlorhexidine and 70% alcohol swabs (preferred), or standard alcohol swabs</p> <p><b>Additional review of:</b> Skin asepsis solutions – no consensus, due to limited evidence of best practice</p> <ul style="list-style-type: none"> <li>- All NICUs using Chlorhexidine (<math>\leq 0.5\%</math>) <math>\pm</math> cetrimide</li> <li>- Chlorhexidine 2% not used due to poor skin integrity in ELBW neonates</li> <li>- Iodine not used due risk of thyroid suppression</li> </ul> <p><b>Individual unit strategies including:</b></p> <ul style="list-style-type: none"> <li>- Relocation or upgrading hand-washing sinks</li> <li>- Decontamination using hydrogen peroxide vaporiser to reduce MRSA</li> </ul>

<p>Jan-June 2014</p>	<p><b>Data</b> All NICUs receiving regular monthly data reports</p> <p><b>Quality Improvement</b> All NICUs using standard approach to PICC line insertion and actively involved in quality improvement activities</p> <p><b>Focus on Hand Hygiene</b> 5 Moments for Hand Hygiene Hand hygiene audits Access to alcohol-based hand rub/gel at all beds Hand Hygiene Champions “Memorable” phrases to remind staff: e.g. “Gel-baby-gel”, “Rub-a-Dub Dub, Scrub the Hub”, “Have you “pinked” today?”</p> <p><b>Review of:</b> peripheral IV management, surveillance swabs and antibiotic use. Exchange of ideas on how to support early introduction of breast milk and skin-to-skin care.</p>
<p>July-Dec 2014</p>	<p><b>Data</b> Demonstration of decreased infection rates.</p> <p><b>Quality Improvement</b> <b>Focus on Equipment</b> Production of Standard Australian PICC Insertion Packs. “Aus PICC Tray” Order Code VY-80199.1249 Review of needleless IV ports and extension tubing (“chooks feet”)</p>