

Level of Evidence  
Clinical Guidelines  
Royal Children's Hospital

### The Hierarchy of Evidence

**The Hierarchy of evidence is based on the National Health and Medical Research Council (2000) and Oxford Centre for Evidence-based Medicine Levels of Evidence (May 2001)**

- I** Evidence obtained from a systematic review of all relevant randomised control trials.
- II** Evidence obtained from at least one properly designed randomised control trial.
- III-1** Evidence obtained from well-designed pseudo-randomised controlled trials (alternative allocation or some other method).
- III-2** Evidence obtained from comparative studies (including systematic reviews of such studies) with concurrent controls and allocation not randomised, cohort studies, case control studies, or interrupted time series with a control group.
- III-3** Evidence obtained from comparative studies with historical control, two or more single-arm studies, or interrupted time series without a parallel control group.
- IV** Evidence obtained from case-series, either post-test or pre-test and post test.
- V** Expert opinion without critical appraisal, or based on physiology, bench research, or historically based clinical principles.

Clinical guidelines are based on reviews of the best available evidence. **Level 1 evidence represents the gold standard for intervention studies**; however it is not available for all areas of practice and for some guidelines it may be appropriate to utilise results from studies with lower levels of evidence. Some clinical guidelines may also be informed by experts in the field, locally (RCH) and internationally (Journal articles) (expert opinion) etc. This NHMRC Hierarchy can be used to grade evidence. Please record details on the evidence table and return to Clinical Quality and Safety (CQS) with guideline draft. The Evidence table can be filled out electronically or printed and used as a hard copy.

*Please contact Jody Smith Clinical Guideline and Path Coordinator on ext 6956 if you have any concerns or require assistance.*

**Hospital Clinical Guidelines**  
**EVIDENCE TABLE**

**GUIDELINE TOPIC: Tracheostomy Management**

Please record all references used in developing the clinical guideline. This form must be filled out electronically and emailed to [Jody.Smith@rch.org.au](mailto:Jody.Smith@rch.org.au)

NB: If you need assistance with completing this table, please contact Jody Smith on x 6956.

<b>Reference</b> ( <i>include title, author, journal title, year of publication, volume and issue, pages</i> )	<b>Method</b>	<b>Evidence level</b> (I-V)	<b>Summary of recommendation from this reference (point form)</b>
<p>Boyce, J.M.; Pitlet, D., Healthcare Infection Control Practices Advisory Committee. Society for Healthcare Epidemiology of America. Association for Professionals in Infection Control. Infectious Diseases Society of America. Hand Hygiene Task Force. Guideline for hand hygiene in health-care settings: recommendations of the healthcare infection control practices advisory committee and the HICPAC/SHEA/APIC/ IDSA hand hygiene task force. Infection Control and Hospital Epidemiology, 2002, 23 (12 Suppl), S3-40.</p>	<p>Review of data regarding handwashing and hand antisepsis in health-care settings.</p>	<p>I</p>	<ul style="list-style-type: none"> <li>▪ Wash hands with either a non-antimicrobial soap and water or an antimicrobial soap and water if hands are visibly dirty or contaminated.</li> <li>▪ If hands are not visibly dirty, decontaminate hands with either alcohol-based hand rub or an antimicrobial soap in water before having direct contact with patients or inserting invasive device.</li> <li>▪ Decontaminate hands after contact with a patient's skin, body fluid, excretions, mucous membranes or wound dressings.</li> </ul>

<p>Ridling, D.A.; Martin, L.D.; Bratton, S.L. (2003) <i>"Endotracheal suctioning with or without instillation of isotonic sodium chloride solution in critically children"</i>. American Journal of Critical Care, 12 (3) 212-19.</p>	<p>Randomised Control Trial</p>	<p>II  No power analysis, small sample size, with many confounding factors</p>	<ul style="list-style-type: none"> <li>▪ Instillation of isotonic sodium chloride solution during endotracheal tube suctioning may not be beneficial and actually may be harmful, and routine instillation of bolus of isotonic sodium chloride solution during suction is not recommended.</li> </ul>
<p>American Thoracic Society (2000) <i>"Care of the child with a chronic tracheostomy"</i>. American Journal of Respiratory Critical Care Medicine, vol 161. pp 297-308. <a href="http://www.atsjournals.org">www.atsjournals.org</a></p>	<p>Guideline, consensus agreement, expert opinion</p>	<p>V</p>	<ul style="list-style-type: none"> <li>▪ Routine instillation of isotonic sodium chloride is not recommended.</li> <li>▪ The premeasured technique is recommended for all routine suctioning.</li> <li>▪ With adequate and continuous suction pressure, the length of time required to perform the premeasured technique should be on the order of a few seconds at most.</li> <li>▪ The technique should also include twirling and rotating the catheter between figure and thumb.</li> <li>▪ Suctioning should be done on the basis of clinical assessment. In children with no evidence of secretion, suctioning patient twice a day to check for tube patency is recommended.</li> <li>▪ Clean technique is recommended for home care.</li> </ul>

<p>Hussey, S.G, Ryan, C.A and Murphy, B.P. (2007) "Comparison of three manual ventilation devices using an intubated mannequin". Arch Dis. Child. Fetal Neonatal Ed. (2004); 89; 490-93.  <a href="http://fn.bmj.com/cgi/content/full/89/6/F490">http://fn.bmj.com/cgi/content/full/89/6/F490</a></p>	<p>Comparative study</p>	<p>III-3</p>	<ul style="list-style-type: none"> <li>▪ The anaesthetic bag with manometer and neopuff™ device facilitate accurate and reproducible manual ventilation by health care professionals.</li> </ul>
<p>Choate, K and Sandford, M (2003) "Tracheostomy: Clinical Practice and the formation of policy and guidelines" Australian Nursing Journal, 10, 8 p: CU1.</p>	<p>Guideline, consensus agreement, expert opinion</p>	<p>V</p>	<ul style="list-style-type: none"> <li>▪ Phone survey was conducted of 14 major hospitals within Australia to benchmark the level of observation of patients in general wards with a tracheostomy. Common practice is to locate patients with a tracheostomy close to areas where they can be observed easily or heard by nursing staff, usually near the nurse's desk area.</li> <li>▪ The working party recommended the level and frequency of observation be decided on the basis of individual clinical assessment of the patients.</li> </ul>
<p>Scoble M, Copnell, B. Taylor, A. Kinney, S and Shann, F. (2001) "Effect of reusing suction catheters on the occurrence of pneumonia in children" Heart and Lung vol 30, 3 p: 225-233.</p>	<p>RCT</p>	<p>II</p>	<ul style="list-style-type: none"> <li>▪ The study investigated the practice of reusing suction catheters in paediatric intensive care patients for up to 24 hours.</li> <li>▪ It was found that practice had no effect on either the rate of pneumonia or the time taken to develop infection.</li> <li>▪ It was concluded the practice of reusing suction catheters for up to 24 hours was both safe and cost effective.</li> </ul>