

Ventilator-associated pneumonia (VAP) is a complication that can be prevented through the use of aggressive hand hygiene, wearing gloves to handle respiratory secretions or contaminated objects, use of closed suctioning systems, routine oral care, and elevation of the head of the bed between 30 and 45 degrees (unless contraindicated) ([Centers for Disease Control and Prevention, 2012](#)). Enteral nutrition is often provided to decrease the risk of bacterial translocation. Routinely assess the patient's intestinal motility (e.g., by auscultating for bowel sounds and measuring residual gastric volume or abdominal girth) and adjust the rate and volume of enteral feeding to avoid regurgitation. In high-risk patients (decreased gag reflex, delayed gastric emptying, gastroesophageal reflux, severe bronchospasm), postpyloric (duodenal or jejunal) feeding tubes are often used. To prevent the aspiration of pooled secretions, suction the hypopharynx before suctioning the ET tube, before repositioning the ET tube, and before repositioning the patient. Prevent ventilator circuits' condensate from entering ET tube or in-line medication nebulizers. Additional measures to prevent VAP include oral intubation and changing ventilator circuits only when they are visibly soiled ([Kline-Tilford, Sorce, Levin, et al, 2013](#)).

Assess readiness to extubate daily. Indications that a child is ready to be extubated include an improvement in underlying condition, hemodynamic stability, and mechanical support no longer being necessary. Assess level of consciousness and ability to maintain a patent airway by mobilizing pulmonary secretions through effective coughing. Maintain NPO status 4 hours before extubation. After extubation, monitor for respiratory distress, which may develop within minutes or hours. Signs of post-intubation respiratory distress include stridor, hoarseness, increased work of breathing, unstable vital signs, and desaturations.

Tracheostomy

A tracheostomy is a surgical opening in the trachea; the procedure may be done on an emergency basis or may be an elective one, and it may be combined with mechanical ventilation. Pediatric tracheostomy tubes are usually made of plastic or Silastic ([Fig. 20-25](#)). The most common types are the Bivona, Shiley, Tracoe, Arcadia, and Hollinger tubes. These tubes are constructed with a