Objectives

- Describe the elements of respiratory physiology impacted by the use of continuous positive airway pressure (CPAP) as a non-invasive respiratory support technique and include the desired physiologic outcomes of such therapy

- Differentiate between continuous-flow and variable-flow methods of generating CPAP and list the features of the available CPAP systems

- Explain the differences between CPAP interfaces focusing on those suitable for delivery of nasal CPAP (nCPAP)

- Summarize the research findings presented related to the comparison of various methods of delivering CPAP and highlight the findings most relevant to current clinical practice

- Outline the setup and use of bubble CPAP (bCPAP) as well as the recommended monitoring and nursing care needed to prevent failure of therapy and/or injuries to the infant undergoing such therapy

Content Outline

1. Rationale for Use and Impact of Continuous Positive Airway Pressure (CPAP) Therapy on Respiratory Physiology in Preterm Infants

2. Comparison of Methods of Generating CPAP
   2.1 Continuous-flow
   2.2 Variable-flow
   2.3 Choice of CPAP based on work of breathing

3. Bubble CPAP (bCPAP) Aspects
   3.1 Effects of bubbling
   3.2 Factors significant to success of bCPAP therapy
      3.2.1 Nasal interface selection and positioning
      3.2.2 Monitoring & injury prevention
      3.2.3 System checks & optimization of therapy delivery
      3.2.4 Weaning
      3.2.5 Therapy failure or need for increased support

4. Research Findings Related to CPAP Therapy

Reading Material Resources

Module WB1917: Neonatal CPAP- Effects & Applications is based on the resources listed below. A copy of each resource is included with the module.

- Continuous positive airway pressure: Physiology and comparison of devices, Gupta S and Donn SM, Seminars in Fetal and Neonatal Medicine, 21 (2016), pp. 204-211

- Continuous positive airway pressure- To bubble or not to bubble. Gupta S and Donn SM, Clinics in Perinatology, 43 (2016), pp. 647-659