Clinical Practice Procedures:
Respiratory/Positive end expiratory pressure

<table>
<thead>
<tr>
<th>Policy code</th>
<th>CPP_RE_PEEP_0416</th>
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<tr>
<td>Date</td>
<td>April, 2016</td>
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<td>Purpose</td>
<td>To ensure a consistent procedural approach for positive end expiratory pressure.</td>
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<td>Scope</td>
<td>Applies to Queensland Ambulance Service (QAS) clinical staff.</td>
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<td>Health care setting</td>
<td>Pre-hospital assessment and treatment.</td>
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<tr>
<td>Population</td>
<td>Applies to all ages unless stated otherwise.</td>
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<tr>
<td>Source of funding</td>
<td>Internal – 100%</td>
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<td>Review date</td>
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Positive end expiratory pressure (PEEP) is the application of a fixed pressure at the end of expiration. PEEP raises the functional residual pressure and capacity above the level at which alveolar closure occurs.[1]

The goal of PEEP is to:
- minimise alveolar collapse and improve oxygenation
- reduce gas trapping (increase compliance)
- decrease the workload of breathing
- maintain ventilation/perfusion (V/Q) matching

The Mayo Healthcare disposable PEEP valve is designed for use with the Mayo Healthcare disposable manual resuscitator to introduce PEEP between 5–20 cmH2O.

**Indications**
- Pulmonary oedema (cardiogenic and non-cardiogenic)
- Asthma and COPD patients (with SpO2 < 90% on a FiO2 > 65%)
- Profound hypoxaemia associated with:
  - flail segment(s)
  - pulmonary contusion(s)
  - aspiration
  - haemorrhage

**Contraindications**
- Absolute:
  - Hypotension (SBP < 90 mmHg)
- Relative:
  - Pneumothorax
  - Uni-lateral lung disease
  - Broncho-pleural fistula
  - Hypovolaemia

**Complications**
- Caution should be used in asthma and those with obstructive lung disease due to increased risk of air trapping and causing a pneumothorax.[2]
- Hypotension
**Procedure – Positive end expiratory pressure**

**PEEP valve assembly and use**

1. Turn the adjustment knob counter clockwise until tension is felt (5 cmH₂O).
2. Attach PEEP valve onto the BVM expiratory flow diverter.
3. Commence positive pressure ventilation.
4. Continuously monitor SpO₂, BP, EtCO₂ and other vital signs.

**Additional information**

- Do not increase PEEP above 5 cmH₂O in patients with asthma or obstructive lung disease.
- PEEP may be increased to 10 cmH₂O in acute pulmonary oedema if after 10 minutes oxygen saturations do not increase above 90%.[3]