Care of Adult Patients in Acute Care Facilities with a Tracheostomy

Intensive Care Coordination & Monitoring Unit
Clinical Program Design and Implementation
Respiratory Network
Agenda

Case for Change

Development of Guidelines

Tracheostomy review team

Implementation
The Case for Change

CEC Reports:

Dec 2007 – Nov 2008
- 8 RCAs
- 7 Deaths

Jan 2009 – Nov 2012
- 11 SAC1s
- 45 SAC2s
- 11 Deaths

Findings:

Deficits:
- Clinical handover
- NFR Orders
- Clinical competency
- Appropriate action (esp. A/hours)
- Risk recognition

Contributing Factors:
- Clinician skill & knowledge (82%)
- Equipment (64%)

1. Source: CEC Reports - unpublished
Putting patients first

- Improve patient outcomes
- Whole of hospital approach
- Care delivered by a multidisciplinary team
- Not multiple teams or individuals
- Effective communication and decision making.
Agenda

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Guideline Development Process

1. ICCMU commissioned to develop CPG by SSDB
2. Clinical Expert Group (ICU/ Respiratory / ENT )
3. Define Scope / Systematic review
4. Consensus Development Conference
6. Extensive NSW Health consultation
7. Feedback revised/ guideline amended
8. Implementation plan and clinical tools
9. Guideline and toolkit published (ACI/ IC wiki)
Key Concepts of Guideline

1. Establish model/s of care that ensure patients receive comprehensive multi-disciplinary care.
2. Ensure a safe environment
3. Local documentation methods
4. Provide appropriate resources to patients/carers from CALD backgrounds
5. Appropriate humidification available
6. Minimise risk of healthcare associated infections
7. Periodic evaluation of IIMs
Equipment

Within patient bed area

• tracheostomy emergency response plan specific to critical nature of patient airway
• suction equipment
• oxygen supply and attachments cuff manometer and 10 mL
• personal protective equipment
• humidification devices as appropriate
• appropriate waste receptacles
• bottle of sterile water
• spare inner cannula (where dual lumen tracheostomy tubes are in use)

Within ward

• Two spare tracheostomy tubes
• Consider tracheal dilators
• Emergency trolley
Emergency tracheostomy management - Patent upper airway

**Call for airway expert help**
Look, listen & feel at the mouth and tracheostomy
A Mapleson C system (e.g. ‘Waters circuit’) may help assessment if available
Use waveform capnography when available: exhaled carbon dioxide indicates a patent or partially patent airway

**No**
- Is the patient breathing?
  - Yes: Assess tracheostomy patency
  - No: CPR if no pulse / signs of life

- Call Resuscitation Team
  - CPR if no pulse / signs of life
  - Remove speaking valve or cap (if present)
  - Remove inner tube
    - Some inner tubes need re-inserting to connect to breathing circuits
  - Can you pass a suction catheter?
    - Yes: The tracheostomy tube is patent
      - Perform tracheal suction
      - Consider partial obstruction
      - Ventilate (via tracheostomy) if not breathing
      - Continue ABCDE assessment
    - No: Deflate the cuff (if present)
      - Look, listen & feel at the mouth and tracheostomy
      - Use waveform capnography or Mapleson C if available
      - Is the patient stable or improving?
        - Yes: Continue ABCDE assessment
        - No: REMOVE THE TRACHEOSTOMY TUBE
          - Look, listen & feel at the mouth and tracheostomy
          - Ensure oxygen re-applied to face and stoma
          - Use waveform capnography or Mapleson C if available
          - Call Resuscitation team
            - CPR if no pulse / signs of life

- Is the patient stable or improving?
  - Yes: Tracheostomy tube partially obstructed or displaced
    - Continue ABCDE assessment
  - No: PRIMARY emergency oxygenation
    - Standard ORAL airway manoeuvres
      - Cover the stoma (swabs / hand).
      - Use: Bag-valve-mask
      - Oral or nasal airway adjuncts
      - Supraglottic airway device e.g. LMA
    - Tracheostomy STOMA ventilation
      - Paediatric face mask applied to stoma
      - LMA applied to stoma

Secondary emergency oxygenation

- Attempt ORAL intubation
  - Prepare for difficult intubation
  - Uncut tube, advanced beyond stoma

- Attempt intubation of STOMA
  - Small tracheostomy tube / 6.0 cuffed ETT
  - Consider Aintree catheter and fibreoptic ‘scope / Bougie / Airway exchange catheter


Emergency laryngectomy management

**Call for airway expert help**
Look, listen & feel at the mouth and laryngectomy stoma
A Mapleson C system (e.g. ‘Waters circuit’) may help assessment if available
Use waveform capnography whenever available: exhaled carbon dioxide indicates a patent or partially patent airway

**No**
- Is the patient breathing?
  - Yes: Assess laryngectomy stoma patency
  - No: CPR if no pulse / signs of life

- Call Resuscitation Team
  - CPR if no pulse / signs of life
  - Remove stoma cover (if present)
  - Remove inner tube (if present)
    - Some inner tubes need re-inserting to connect to breathing circuits
    - Do not remove a tracheoesophageal puncture (TEP) prosthesis
  - Can you pass a suction catheter?
    - Yes: The laryngectomy stoma is patent
      - Perform tracheal suction
      - Consider partial obstruction
      - Ventilate via stoma if not breathing
      - Continue ABCDE assessment
    - No: Deflate the cuff (if present)
      - Look, listen & feel at the laryngectomy stoma or tube
      - Use waveform capnography or Mapleson C if available
      - Is the patient stable or improving?
        - Yes: Continue ABCDE assessment
        - No: REMOVE THE TUBE FROM THE LARYNGECTOMY STOMA if present
          - Look, listen & feel at the laryngectomy stoma
          - Ensure oxygen is re-applied to stoma
          - Use waveform capnography or Mapleson C if available
          - Call Resuscitation Team
            - CPR if no pulse / signs of life

**No**
- Is the patient breathing?
  - Yes: Continue ABCDE assessment
  - No: PRIMARY emergency oxygenation
    - Standard ORAL airway manoeuvres
      - Cover the stoma (swabs / hand).
      - Use: Bag-valve-mask
      - Oral or nasal airway adjuncts
      - Supraglottic airway device e.g. LMA
    - Tracheostomy STOMA ventilation
      - Paediatric face mask applied to stoma
      - LMA applied to stoma

Secondary emergency oxygenation

- Laryngectomy patients have an end stoma and cannot be oxygenated via the mouth or nose
- Applying oxygen to the face and stoma is the default emergency action for all patients with a tracheostomy

- Attempt intubation of laryngectomy stoma
  - Small tracheostomy tube / 6.0 cuffed ETT
  - Consider Aintree catheter and fibreoptic ‘scope / Bougie / Airway exchange catheter

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Tracheostomy Review Team

- specialist nurse
- speech pathologist
- physiotherapist
- medical officer

- time to decannulation, hospital LOS, adverse events, readmit to ICU

- care consistent with protocol, inter-professional decision making, effective and efficient care, transfer to wards, patient outcomes

Agenda

Case for Change

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Implementation
Implementation approach

- Led and driven by clinicians
- Implementation led by LHDs
- Implementation support from ACI
  
  Respiratory /ICCMU / Implementation Team
- Free webex education/ pod casts
- Correspondence to LHD CEO
  - Clinical Champion
  - Executive lead
  - Local Implementation officer
Role of DO/GMs

- Generate Local Executive sponsorship and support
- Escalate concerns/questions to the ACI Implementation team, ACI Respiratory Network Manager or ICCMU
- Monitor responsiveness at individual sites
- Internal systems for monitoring tracheostomy patient outcomes
ACI Tracheostomy guideline

ACI-website

IC Wiki
# CPG resources

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