Derby and Derbyshire
Clinical Commissioning Group

CLINICAL POLICY ADVISORY GROUP (CPAG)

Cough Assist (Mechanical Insufflation and Exsufflation MI-E) Policy

Statement

Derby and Derbyshire CCG, in line with its principles for procedures of limited clinical value, has deemed that Cough Assist (Mechanical Insufflation and Exsufflation (MI-E) should not be routinely commissioned unless the criteria listed within the policy are met.

Requests for Mechanical Insufflation and Exsufflation (MI-E) or 'cough assist therapy' for patients who do not meet the above criteria will only be funded by the CCG if an Individual Funding Request (IFR) application proves successful.

These commissioning intentions will be reviewed periodically. This is to ensure affordability against other services commissioned by the CCG.

1. Background

Patients who have an ineffective/weak cough due to neuromuscular and neurological conditions and cervical cord injury are unable to clear secretions and are therefore susceptible to respiratory tract infections including pneumonia which require antibiotics and hospital admission. Respiratory tract infections caused by a respiratory muscle weakness is the most commission cause of hospital admissions for patients with neuromuscular conditions.

The mechanical insufflator/exsufflator (MI-E) assists the clearance of bronchopulmonary secretions in those patients with an ineffective cough by the use of both positive and negative pressure.

Cough Assist is a non-invasive therapy that safely and consistently removes secretions in patients with an ineffective ability to cough (measured by Peak Cough Flow <270 l/m). The Cough Assist clears secretions by gradually applying a positive pressure to the airway, then rapidly shifting to negative pressure.

2. Recommendation

Cough Assist is commissioned for patients with an ineffective cough which increases the risk of a chest infection as a result of the following underlying conditions, and manual cough assist or air-stacking methods are not effective*

- Amyotrophic lateral sclerosis (ALS)
- Spinal muscular atrophy
- Muscular dystrophy
- Myasthenia gravis
- Multiple sclerosis
- Motor Neurone Disease
- Guillain-Barré Syndrome
- Post-polio syndromes
- Kypho-scoliosis
- Syringomyelia
- Spinal cord injuries
- Patients with other or undiagnosed conditions may also be considered for cough assist where they meet the other clinical indications outlined below and a specialist team has recommended it's use

* any intervention that doesn't give a documented PCF of 270L/min is considered to be not effective and would warrant a mechanical device

Patients should also have one of the following:

- PCF (Peak Cough Flow) less than 160 L/min
  OR
- PCF (Peak Cough Flow) of < 270 l/pm and have clinical symptoms of a weak cough and therefore require interventions necessary to clear bronchial secretions or infection. (PCF can be measured by coughing into a peak flow meter attached to a mask MI-E Guidelines 2013 3)
  OR
- VC (vital capacity) below 1.1L in general respiratory muscle weakness.

For those individuals who are unable to undergo Peak Cough Flow testing the following criteria should be used instead:

- Recurrent hospital admissions,
  OR
- Effective use of equipment during inpatient admission,
  OR
- 2 courses of antibiotics prescribed for chest infections over 6-month period,
  OR
- Evidence of retained secretions on auscultation with an inability to clear these

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3. Rationale for Recommendation

Whist there is limited high level evidence to support the use of Cough Assist there is some evidence that cough assist does reduce acute admissions, and this has the backing of the British Thoracic Society. https://www.brit-thoracic.org.uk/
There have been a number of Individual Funding Requests (IFRs) received by DDCCG for cough assist machines. As these can be cost effective by reducing acute admission for respiratory infection in the target group of patients this policy has been developed to ensure consistency in decision making.

4. Useful Resources

- British Thoracic Society https://www.brit-thoracic.org.uk/

5. References

NICE Guideline (NG42) - Motor Neurone Disease: assessment and Management published 24 February 2016 – Last updated 23 July 2019 – accessed 27/10/2021 https://www.nice.org.uk/guidance/ng42

Guidelines for respiratory management of children with neuromuscular weakness. British Thoracic Society (2012) – accessed 27/10/2021 https://www.brit-thoracic.org.uk/document-library/guidelines/neuromuscular-weakness/bts-guideline-for-respiratory-management-of-children-with-neuromuscular-weakness/

BTS/ICS guideline for the ventilatory management of acute hypercapnic respiratory failure in adults. Davidson AC, et al. Thorax 2016;71:ii1–ii35. doi:10.1136/thoraxjnl-2015-208209 Extract from the relevant section: Sputum retention Recommendations 10. In patients with neuromuscular disease (NMD), mechanical insufflation and exsufflation should be used, in addition to standard physiotherapy techniques, when cough is ineffective and there is sputum retention (Grade B). 11. Mini-tracheostomy may have a role in aiding secretion clearance in cases of weak cough (NMD/chest wall disease (CWD)) or excessive amounts (COPD, cystic fibrosis (CF)) (Grade D). – accessed 27/10/2021

NHS Birmingham and Solihull CCG policy for the use of mechanical Insufflator/Exsufflator (MI-E) Cough Assist Machines – 2018 https://www.birminghamandsolihullccg.nhs.uk/your-health/treatment-policies/cough-assist-machines – accessed 27/10/2021

Greater Manchester EUR Policy Statement on: Cough Assist (Mechanical Insufflation and Exsufflation (MI-E) –November 2020 accessed 27/10/2021 https://gmeurnhs.co.uk/Docs/GM%20Policies/GM%20Cough%20Assist%20Policy.pdf

6. Appendices

Appendix 1 - Contraindications to treatment with a Cough Assist Machine

The following contraindications, should be carefully considered before use

- Any patient with a history of bullous emphysema
- Susceptibility to pneumothorax or pneumo-mediastinum
- Recent barotrauma

Appendix 2 - Consultation

All relevant providers/stakeholders will be consulted via a named link consultant/specialist. Views expressed should be representative of the provider/stakeholder organisation. CPAG will consider all views to inform a consensus decision, noting that sometimes individual views and opinions will differ.

Consultee	**Date**
Chair of the Derby and Derbyshire CCG (DDCCG) IFR Panel	November 2021
Director of Public Health, Derby City Council	January 2022
Assistant Director of Quality, DDCCG	November 2021
Clinical Policies Advisory Group (CPAG)	November 2021
Director of Planning, DDCCG	November 2021
Engagement Manager, DDCCG	December 2021
Senior Commissioning Manager, DDCCG	December 2021
Consultant Rehabilitation Medicine, UHDBFT	December 2021
Muscular Dystrophy Organisation	December 2021
Honorary Consultant Assist Professor – Ventilation and Sleep Medicine	December 2021
Respiratory Physiotherapy, DCHSFT	December 2021
Paediatric Consultant, UHDBFT	December 2021
Motor Neurone Association	December 2021
Consultant in Respiratory Medicine, UHDBFT	December 2021
Lead Physiotherapist, ImPACT+, UHDBFT	December 2021
Lead Physiotherapist, Young Adults Team, UHDBFT	December 2021
Consultant Neurologist, UHDBFT	December 2021
Spinal Muscular Atrophy UK	December 2021

Respiratory Paediatric Physiotherapist, UHDBFT	December 2021
Lead Senior Physiotherapist, CRHFT	December 2021
Clinical Specialist Respiratory Physiotherapist, DCHSFT	December 2021
Clinical Policy Advisory Group (CPAG)	February 2022
Clinical and Lay Commissioning Committee (CLCC)	March 2022

Appendix 3 - Document Update

Document Update	**Date Updated**
Version 1.0 • Published	February 2022

Appendix 4 - OPCS-4 Code(s)

OPCS codes for this intervention:

Mechanical insufflation and exsufflation E895