**SPECIALISED COMMISSIONING – RESPONSE TO AMENDMENTS REQUESTED TO EVIDENCE REVIEW DURING ENGAGEMENT OR CONSULTATION**

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| **URN** | 1622 |
| **POLICY TITLE** | Lung Volume Reduction by surgery or endobronchial valve for severe emphysema |
| **CRG:** | A01 Specialised Respiratory |
| **NPOC:** | Internal Medicine |
| **Date** | 31 March 2020 |

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| **Description of comments during consultation (If studies have been suggested please provide a list of references)** | Lung Volume Reduction Surgery: Reinterpreted With Longitudinal Data Analyses Methodology Eric Lim, Ines Sousa, Pallav L. Shah, Peter Diggle and Peter Goldstraw                                 Accepted for publication in Ann Thoracic Surgery 2020 |
| **Action taken by Public Health lead** | The paper was reviewed. Method: The paper considered the data from the NETT study. Trial data were released by the United States National Institutes of Health and the National Heart, Lung, and Blood Institute and analysed using a mixed effects model. Data were interrogated using longitudinal data analysis techniques to estimate the differences in the survivors of the 608 surgical and 610 medical participants on age, sex, and height-adjusted (percentage predicted) values for lung volumes. Data on the difference in lung function variables between patients receiving LVRS vs medical care out to 5 years were estimated and presented. The authors used a longitudinal data analysis which is an approach that creates models (akin to a line of best fit) for the response variables of interest such that statistical and visual comparisons can be undertaken. It accounts for irregular follow-up time, adjusts for missing data, does not require arbitrary selection of time points, and uses correlation to make analyses more powerful. Limitations: The potential limitations include the decreasing sample size and increasing uncertainty of the estimates with time. To mitigate this, they included confidence intervals to demonstrate how the estimates become increasingly wider with time. Outcomes: For the outcome of FEV1 in patients randomised to LVRS, there was an immediate improvement compared with medical therapy, with an estimated decline to baseline approximately five years after randomisation, with a residual difference of þ1.47% of predicted in favour of LVRS at the 5-year interval. Similarly, all other variables that experienced initial |

| | improvement showed evidence of returning to baseline (albeit at a varying rate) within the 5-year follow-up interval. The paper concludes that LVRS should be undertaken with a view to improve patient symptoms rather than overall survival. Reflection: The paper is an interesting representation of the largest study on LVRS. The NETT study only compared LVRS to normal medical care. It did not cover insertion of valves. It took place some years ago and the impact on changes in other aspects of care, such as intensive care treatment, are difficult to assess. The issues raised in the development of the commissioning policy were not about the impact of LVRS on e.g. FEV1 but were about the use of an MDT to select patients in an appropriate way who might benefit from either LVRS or a valve insertion. |
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| **Outcome for studies suggested during consultation** | |
| **1. Evidence already identified during the evidence review** | No. |
| **2.New evidence identified by stakeholders that does not fall within PICO and search methodology** | Not Applicable. |
| **3.New evidence identified by stakeholders that falls within PICO and search methodology but does not materially affect the conclusions of the existing evidence review** | Lung Volume Reduction Surgery: Reinterpreted With Longitudinal Data Analyses Methodology Eric Lim, Ines Sousa, Pallav L. Shah, Peter Diggle and Peter Goldstraw Accepted for publication in Ann Thoracic Surgery 2020 |
| **4.New evidence identified by stakeholders that falls within PICO and search methodology, that does materially affect the conclusions of the existing evidence review. Updated evidence review to be undertaken (agreed with CET)** | Not Applicable. |