Update Data Collection for Lung Mortality Models

OPTN Lung Transplantation Committee

Purpose and Proposal

- Purpose: Update data collection on disease severity of lung candidates
- Proposal:
  - Remove data collection not used to calculate lung composite allocation score (CAS)
  - Revise data collection to improve data quality
  - Add data collection on clinical criteria that may warrant future inclusion in lung CAS
  - Assign values for candidates on extracorporeal membrane oxygenation (ECMO) or high flow nasal cannula (HFNC) to be used in calculating allocation score

Rationale

- Scores used for lung allocation include estimates of waiting list and post-transplant survival
- Estimates are calculated based on clinical information on lung candidates
- Coefficients used in calculations are based on mortality models
- Data collection on additional clinical criteria will enable the OPTN to consider their inclusion in the models in the future

Data Removals

- Percent Predicted Forced Vital Capacity
- Post Bronchodilator Actual FEV_1
- Pre Bronchodilator Percent Predicted FEV_1
- Post Bronchodilator Percent Predicted FEV_1
- Requires Supplemental O_2: How was the value obtained

Data Revisions

- Lung Diagnosis Code: Add Combined Pulmonary Fibrosis and Emphysema
- Diabetes: Change “insulin dependent” to “treated with insulin”
- Assisted Ventilation: Add hospitalization status for intermittent mechanical
- Requires Supplemental O_2: Allow more detailed data entry by oxygen delivery device and candidate activity level
- Six Minute Walk Distance: Change placement in system and clarify definition

Data Additions – All Lung Candidates

- Recurrent Pneumothoraces
- Bronchopleural Fistula
- Massive Hemoptysis
- Exacerbations
- Prior Lung Surgery*
- Pleurodesis
- Prior Cardiac Surgery*
- Microbiology*
- Diffusing Capacity of the Lungs for Carbon Monoxide
- Mean Right Atrial Pressure
- Pulmonary Vascular Resistance

Data Additions – PH Candidates Only

- For only candidates with a diagnosis of pulmonary hypertension (PH):
  - New York Heart Association (NYHA) Functional Classification
  - B-type natriuretic peptide (BNP) and N-terminal-prohormone BNP (NT-proBNP)
  - Pericardial effusion

Data Definitions

- Detailed data definitions are in the proposal on the OPTN website
- Diagnosis-specific definitions of exacerbations:
  - Chronic obstructive pulmonary disease
  - Interstitial lung disease
  - Cystic fibrosis
- Six minute walk: Total exertional distance on a flat surface

Add Serial Data Collection

- Allow data entry on multiple dates for:
  - Actual Forced Vital Capacity
  - Pre Bronchodilator Actual FEV1
  - Diffusing Capacity of the Lungs for Carbon Monoxide

Assign Values for ECMO, HFNC

- Candidates with supplemental O_2 over 26.33 L/min will receive maximum score of 26.33 L/min
- Candidates on ECMO will receive maximum score for Supplemental O_2
- Candidates will receive most beneficial score between L/min and % values entered for HFNC

Member Actions

- Lung transplant programs will need to learn changes to data collection
- Revised data fields used to calculate the lung CAS are required
- New data collection is not required but is recommended

What do you think?

- Are the proposed data changes and data definitions clear?
- What clinical parameters would you add to the diagnosis-specific data definitions of exacerbations?
- Is it clear how data should be submitted related to assisted ventilation and supplemental oxygen, and how values will be incorporated into the CAS?
- Are there any other clinical criteria that should be added to better estimate a candidate's waiting list survival or post-transplant outcomes?