Performance Measure for Improvement in Functional Capacity at Completion of Pulmonary Rehabilitation (PR)

MEASURE DESCRIPTION:
The percentage of patients with COPD or Interstitial Lung Disease (ILD) who are found to increase their functional capacity by 30 meters. According to the recent American Thoracic Society / European Respiratory Society (ATS/ERS) field test statement, the minimal important difference (MID) for the 6MWT in adults with chronic respiratory disease is between 25 and 33 meters with a median value across trials of 30 meters (98.43 feet), as measured by a standardized 6 minute walk test (6MWT) after participating in pulmonary rehabilitation (PR).

DEFINITIONS:
Assessment of functional capacity during PR using the 6MWT.
- Assessments of 6MWT are to be performed within one week of PR program entry and again within one week of PR program completion.
- Follow the procedures described in the ATS/ERS field test statement (1,2).
- To perform the 6MWT the patient is instructed to walk as far as possible in 6 minutes. They are allowed to stop and rest during the test, and resume walking as soon as able. All variables are held constant during the test consistent with the ATS / ERS statement (1,2). The total distance covered in 6 minutes is measured (in meters or feet). All patients who increase the distance walked by at least 30 meters (98.43 feet), as measured by the 6MWT performed at PR entry and again at PR completion, should be included in the numerator.
- Additional information is available in the AACVPR PR Outcomes Resource Guide/Toolkit (2014; update in 2016 planned)

NUMERATOR:
Number of patients who are found to increase their functional capacity by at least 30 meters (98.43 feet), as measured by 6MWT distance at PR program entry and completion.

DENOMINATOR:
All patients with clinician diagnosed COPD or ILD at PR program entry who completed PR during the measurement period and who completed at least 10 PR sessions within 3 months of PR program entry. However, the PR program can run longer than 3 months.

Denominator Exclusions
- Patients for whom a 6MWT would be contraindicated due to acute or unstable medical conditions (see detailed list in reference 3 for a complete list).
- Patients who are unable to perform a 6MWT due to orthopedic, neurological, cognitive or psychiatric impairments and/or safety reasons.
- Patients who have not completed at least 10 PR sessions within 3 months of program entry
- Patients with diagnosed pulmonary vascular disease (i.e., pulmonary hypertension) or other primary lung disease process (i.e., lung cancer).
PERIOD OF ASSESSMENT:
Up to twelve months

ATTRIBUTION:
PR program staff

SOURCES OF DATA:
Medical record or other database (e.g., administrative, clinical, registry)

RATIONALE:
The 6 minute walk test (6MWT) is a low-cost, reliable, accurate method to assess exercise capacity and response to treatment in persons with chronic lung disease. The test measures the distance walked on a 30 meter (98.43 feet) corridor or track in 6 minutes (6MWTD). The test is valid in chronic lung disease, including COPD and ILD (1,2). It functional capacity in chronic lung disease.

Patients are asked to walk as far as possible in 6 minutes along a flat corridor (2). Dyspnea and subjective fatigue are measured before and after the 6MWT using validated measurement scales, such as the Borg C-R dyspnea scale. The distance walked is inversely related to risk of hospitalization in chronic respiratory disease.

The GOLD Guidelines recommend that pulmonary rehabilitation be a part of the treatment plan for patients with moderate to severe COPD (4). Pulmonary rehabilitation improves several patient-centered outcomes, including quality of life, dyspnea, and functional capacity. In the updated Cochrane systematic review, improvement in functional capacity following pulmonary rehabilitation, as measured by increased six minute walk distance (6MWTD) of 48 meters; 95% CI: 32 to 65; n = 16 trials was reported (11). Cochrane Systematic Reviews also support PR in ILD and non-malignant dust-related lung diseases for improving patient-centered outcomes including quality of life, dyspnea, and functional capacity (12, 13). In 2002, the American Thoracic Society published guidelines for conducting 6 minute walk testing (4). Enright and Sherrill (1998) first reported reference equations for prediction of total distance walked in 6 minutes by healthy adults, providing predictive reference for the 6MWT (14). A recent review by Singh et al. (15) reported the 6MWT is reliable (intra-class correlation coefficients ranged from 0.82 to 0.99 in seven studies). They also report that the 6MWT has stronger correlations with peak work capacity ($r = 0.59-0.93$) and physical activity ($r = 0.40-0.85$) compared to respiratory function ($r = 0.10-0.59$). They also reported that responsiveness was moderate to high for the 6MWTD, with greater responsiveness to interventions that included exercise training. This review demonstrates the strength of the 6MWT as a test of functional capacity in persons with chronic lung disease (15). This performance measure allows pulmonary rehabilitation programs to assess the impact of interventions on a clinically meaningful assessment of functional capacity.

REFERENCES:

Initial version: 10/1/15
Previous versions: (V2 01/30/16; V3 6/27/16; V4 10/17/16; V5 10/24/16
Current version: V6 03/28/17