HOME SPIROMETRY
DME101.040

COVERAGE:

Home monitoring of pulmonary function utilizing a spirometer is not eligible for coverage as it is considered investigational.

DESCRIPTION:

Home Spirometry permits regular daily measurements of pulmonary function or lung volumes. Forced vital capacity (FVC) is the maximum volume of air that can be exhaled (expired/breathing out) forcefully along with expiratory flow rates such as forced expiratory volume in one second (FEV-1). FEV-1 is the volume of air forcefully exhaled during the first second after a full breath and normally accounts for greater than 75% of the vital capacity. The monitoring device has been primarily investigated among lung or heart-lung transplant recipients as a technique to provide early diagnosis of infection and rejection. While spirometry alone may not identify a specific diagnosis, it can differentiate between obstructive and restrictive disorders and home based spirometry use has been investigated for the ongoing estimation of the severity in conditions, such as:

- Asthma,
- Chronic Obstructive Pulmonary Disease (COPD),
- Bronchitis,
- Emphysema, and
- Cystic Fibrosis (CF).

Home Spirometry, also known as ambulatory spirometry or patient-administered sequential spirometry (PASS), utilizes several types of portable devices capable of accurately measuring lung volumes. These include:

- Basic handheld, pocket-sized, battery operated turbine spirometer with a digital readout for the patient to manually record the data, otherwise known as a Microspirometer; and

- Electronic portable spirometers with a transducer, microprocessor, speaker and data storage capabilities, with the capability of sending data for provider interpretation via the telephone or internet using a computer modem device. Examples are the:
  ♦ Spirophone,
  ♦ Electronic Diary Card Spirometer (EDC),
  ♦ Satellite Spirometer,
  ♦ Simplicity Spirometer,
  ♦ MicroLoop Spirometer, or
  ♦ MicroDiary Spirometer.
The diary card type of spirometer measures FVC, FEV-1, and peak expiratory flow rate (PEFR). PEFR is the maximum flow at the onset of forced expiration, which is reduced in proportion to the severity of the airway obstruction (as in asthma). In addition, the diary card type of spirometer has a computer chip which stores times and dates of measurements, an alarm that reminds the patient to make an entry of measurements, and, it also, downloads measurements to a personal computer, which produces a weekly report.

A spirometer should not be confused with a peak flow meter. A peak flow meter measures the greatest amount of air exhaled, over one minute, the FEV-1; whereas, the home spirometer measures FVC and FEV-1, and in some home spirometry models the PEFR.

RATIONALE:

Postoperatively, lung transplant recipients must be carefully monitored immediately for the development of either rejection episodes or infection complications. Techniques include complete pulmonary function testing (PFT), serial chest x-rays, bronchoalveolar lavage, and transbronchial biopsy (TBB). TBB is thought to be the only objective method of distinguishing between these two common complications. TBB is typically performed on a routine schedule, with additional biopsies performed if the patient becomes symptomatic. Home spirometry has been investigated as a technique to provide daily monitoring to promptly identify presymptomatic patients who may benefit from a diagnostic TBB. However, published data are minimal. The published clinical data does not permit scientific conclusions regarding the clinical use of home monitoring of FEV-1 and FVC. Specifically, there are inadequate data to determine how reductions in FEV-1 and FVC relate to clinical symptoms, and how this information can be used to determine the necessity of TBB.

In regards to the asthma patient, the peak flow meters is an essential device used for monitoring lung function, predicting exacerbations and decision making regarding treatment care and medication usage. The use of peak flow meters has been recommended as the preferred device by the National Institutes of Health, National Heart, Lung, and Blood Institute. Whereas, spirometry is recommended at the time of the initial assessment of asthma, after treatment has been initiated and stabilized, and at least every one to two years.

Home spirometry is under investigation for additional conditions, such as cystic fibrosis, COPD, and emphysema.

DISCLAIMER

State and federal law, as well as contract language, including definitions and specific inclusions/exclusions, takes precedence over Medical Policy and must be considered first in determining coverage. The member’s contract benefits in effect on the date that services are rendered must be used. Any benefits are subject to the payment of premiums for the date on which services are rendered. Medical technology is constantly evolving, and we reserve the right to review and update Medical Policy periodically. HMO Blue Texas physicians who are contracted/affiliated with a capitated IPA/medical group must contact the IPA/medical group for information regarding HMO claims/reimbursement information and other general polices and procedures.
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