

Connecticut Valley Hospital

Physical Therapy Services

Re: Physical Therapy Respiratory Treatments

Date: September 14, 2008

The Physical Therapy Services at Connecticut Valley Hospital has provided numerous types of Respiratory Treatments to patients in need of these services. All Physical Therapists are trained and demonstrate competence in the usage of these techniques on an annual basis. There are a number of treatments that the physical therapy services at CVH does not provide, included in those are suctioning and bagging. Additionally, we do not perform diagnostic testing such as stress tests, respiratory function tests, and sweat chloride testing.

As with all Physical Therapy Treatments, the Physician writes an order in the Physician's Order Sheet, and a Physical Therapy Evaluation is completed. Specific areas that are addressed in a Respiratory Evaluation include: history of respiratory problems, smoking history, work history, position of comfort, position of increased distress, normal level of activity, posture, height, weight, circulation especially of fingers and toes, respiratory rate, blood pressure, heart rate, percent oxygen saturation, palpation of chest wall mobility and bony abnormality, auscultation, cough strength and effectiveness, generalized ROM and strength, respiratory ratio (usage of intercostal muscles to diaphragm, which is desirably 2:2), usage of auxiliary muscles in breathing, breathing pattern (abdominal, stomach or thoracic breather) and diaphragmatic movement.

The treatments that we do provide include, but are not limited to, the following (most of which are addressed fully in the Physical Therapy Policies and Procedures Manual):

1. Postural Drainage which is a means of clearing the airways of secretions by placing the patient in positions so gravity will assist in the flow of mucus. The positions are based upon the anatomy

of the tracheobronchial tree, and are designed to drain specific areas of the lungs to larger bronchi, and the trachea where it can be coughed out. Lung segments to be treated are determined following auscultation.

2. Percussion, which is performed in association with Postural Drainage, requires the “cupping” of the hands. Then the hands are “clapped” over the lung segments to be treated based on the patient’s positioning. This may last from 3 to 5 minutes for each area to be treated. Usually, the patient is left in the desired position for a few minutes and allowed to “drain” and encouraged to cough.
3. Vibration, which may also be performed with postural drainage, is the very high frequency movement of the hands or a vibration machine over the effected lung segment. This procedure is most effective for very small bronchiole congestion, such as in an acute illness.
4. Coughing Techniques are methods of assisting the patient in more effectively removing secretions from his or her lungs and airways. These include Splinted Cough Technique, Assisted Cough Technique, Diaphragm Assisted Cough Technique, and Huffing Technique.
5. Patient mobilization is vitally important to preventing respiratory problems and for helping to reduce the exacerbation of chronic exercise programs, and patient self-monitoring programs are included in this area. Despite the fact that respiratory function decreases with age and smoking history, this can be counteracted with endurance training and aerobic exercise.
6. Breathing exercises are the most commonly used Physical Therapy procedure used in the treatment of respiratory conditions. Breathing and posture exercises are an integral part of most physical therapy programs. The thoracic spine, ribs, and sternum positioning all play a very important part in lung mobility. Additionally, muscles primarily utilized for inspiration (diaphragm and external intercostals) are involved in some conditions, while the muscles primarily utilized for expiration (internal intercostals) are involved in other conditions. Exercises that focus on inspiration are more commonly used with patients who have thoracic kyphosis and scoliosis, paralysis, post –operatively and cystic fibrosis. Exercises that focus on expiration are more commonly used with patients who have COPD, emphysema,

chronic bronchitis and asthma. These conditions tend to leave large residual volumes, which can increase an individual susceptibility to pneumonia and other bacterial and viral conditions. Incentive spirometers are small hand held pieces of equipment that assists the patient in visualizing how many cubic centimeters of air they have inhaled. Likewise, a peak flow meter is a similar piece of equipment that assists the patient is visualizing how many cubic centimeters of air they have exhaled. Other types of breathing exercises include: segmental breathing, blowing exercises, chest and shoulder mobility exercises, diaphragmatic breathing exercises, posture exercises, deep inspiratory exercises to use the auxiliary muscles (sternocleidomastoid and scaleni), forced expiratory exercises to use alternate auxiliary muscles (transverse and oblique abdominals, quadratus lumborum, and occasionally the long spinal extensors), and generalized mobility exercises.

7. Patient Education includes many areas involved in Physical Therapy respiratory treatments. Positioning for comfort and decreasing symptoms is a vital part of the long term care of chronic respiratory conditions. Teaching the patient how to monitor for signs and symptoms of distress and adverse side effects of exercise is also vital. Teaching the patient and their respective care givers exercises, usage of adaptive equipment (portable oxygen, incentive spirometers, etc.), monitoring of exercises programs, and proper cough techniques are important in the follow through of individual programs. Because respiratory conditions affect all aspects of a patient's life, having the patient and staff educated is paramount to successful control of the individuals respiratory problems.

At Connecticut Valley Hospital, respiratory evaluations are documented on the Cardiorespiratory Evaluation Form (CVH-488) and daily treatments on the Physical Therapy Treatment Report Form (CVH-511). Daily Vital Signs are kept on an internal department documentation form.