



Respiratory Care Services

Respiratory Care is a vital part of the whole body (holistic) approach to health care, both for patients in the hospital and in the outpatient areas. Often a patient's medical treatment involves some aspect of respiratory care.

Nashoba Valley Medical Center recognizes the importance of complete respiratory care, and employs specialized Respiratory Care Practitioners.

RESPIRATORY CARE PRACTITIONERS (RCPs)

Respiratory Care Practitioners (RCPs) are licensed healthcare practitioners that evaluate, treat and care for patients under the direction of a licensed physician. RCPs form part of the core healthcare team, working closely with physicians and nurses to provide patient care to all age groups from newborn to geriatric.

RCPs provide complex therapies that may be therapeutic or diagnostic in nature and these therapies are most often provided to assess or relieve airway obstruction.

Disorders where special respiratory care may be needed:

- asthma
- bronchitis
- bronchiolitis
- chronic obstructive pulmonary disease (COPD)
- pneumonia

With such disorders, the lungs — particularly the airways themselves — do not function properly, and the RCP will administer aerosolized medications to relieve inflammation and airway constriction. This, in turn, allows the lungs to perform more efficiently. These treatments are most often administered via a nebulizer, metered-dose inhaler (MDI), or dry-powder inhaler (DPI).

RCPs can be found in almost any healthcare arena from the hospital to the homecare setting and are essential to providing optimum patient care, particularly to patients that suffer from cardiopulmonary disorders.

PULSE OXIMETRY

Pulse oximetry is a noninvasive method to detect the oxygen level in the blood. It involves

the placement of a probe on a finger, toe, or earlobe, and the transmission of infrared light through a capillary bed. The amount of light that is absorbed on different wavelengths by the hemoglobin in the red blood cells allows the RCP to detect the patient's oxygen saturation within the blood. When further analysis is necessary, the RCP will perform a blood draw from an artery, usually in the wrist, and this sample will be analyzed for oxygen and carbon dioxide levels within the blood as well as the pH level, the blood's acidity or alkalinity level.

BRONCHIAL HYGIENE THERAPIES

Bronchial hygiene therapies are aimed at reducing the amount of mucus and enhancing its clearance from the lungs. These therapies may include incentive spirometry, positive expiratory pressure (PEP) therapy, and deep breathing and coughing exercises.

VENTILATOR MANAGEMENT

Ventilator management is one of the hallmarks of the respiratory care profession. The RCP assists the physician in managing the ventilator, or breathing machine, for those patients who develop respiratory failure and must be placed on life support. Ventilator management is a complex arena that involves both critical thinking skills and sound judgment. RCPs are most commonly found in the intensive care setting performing this and other tasks, including airway management.

PULMONARY FUNCTION TESTING (PFT)

Pulmonary Function Testing (PFT) involves several types of tests to determine the overall function and capacity of the lungs. Spirometry is the measurement of both the flow rate and the volume of air that a patient can inspire and expire. The two values are plotted against each other on a graph to obtain the "flow-volume loop" which measures these values at different intervals within inspiration and expiration.

DIFFUSION CAPACITY TESTING

Diffusion Capacity testing measures the ability of the lungs to diffuse inspired gas across the membrane that separates the alveoli, or "air sacs" from the capillaries, tiny blood vessels that surround the air sacs that exchange the





oxygen and carbon dioxide between the blood and the lungs.

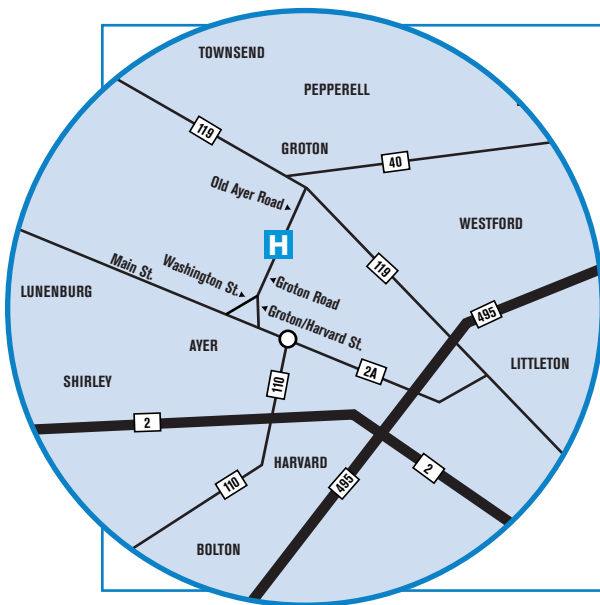
LUNG VOLUME STUDIES

Lung Volume studies may involve washing out of the gases normally found within the lungs or the use of a body plethysmograph (body-box) to determine the various volumes, or capacities, of gas within the lungs.

METHACHOLINE CHALLENGE TESTING

Methacholine Challenge testing involves the inhalation of a drug that provokes the lungs to react with symptoms similar to an asthma attack. This type of testing is used to assist with the diagnosis of asthma or other types of reactive airway diseases.

The Respiratory Care Department at NVMC is a full-service department that operates 24-hours, 7-days a week, providing quality care to our patients. The RCP staff assumes primary responsibility for all respiratory care procedures, both therapeutic and diagnostic. The RCP staff provides education to patients in disease management, smoking cessation, and health promotion. The Pulmonary Function Lab located within the department offers comprehensive diagnostic testing including spirometry, diffusion capacity, lung volume studies, methacholine challenge, arterial blood analysis, and pulse oximetry. The Lab is open Monday-Friday, 7:30 a.m. to 5 p.m. for both inpatient and outpatient testing.



DIRECTIONS

FROM THE NORTH:

South on Route 495 to Littleton Common/Groton Exit 31, Route 119. Head west toward Groton on Route 119. Left on Old Ayer Road, just before coming in to Groton. Old Ayer Road becomes Groton Road. Distance from start of Old Ayer Road is 2.0 miles. Hospital is on the right.

FROM THE SOUTH:

North on Route 495 to Route 2 West. Follow Route 2 West to Ayer/Harvard Route 110 Exit 37. Follow Route 110 to Ayer rotary, turning right off the rotary on to Main Street, immediately beyond McDonald's. Follow Main Street .3 miles to the first right, Groton/Harvard Road (Blue "H" sign). Take a right on Groton/Harvard Road. Go straight through two stop signs. At the second stop sign, take a right onto Groton Road. Hospital is on the left - 1.5 miles from start of Groton/Harvard Road.

FROM THE WEST:

Follow Route 2 East to Ayer/Harvard/Route 110 Exit 38B. Continue as above.

FROM THE EAST:

Follow Route 2 West Ayer/Harvard/Route 110 Exit 38B. Continue as above.

FROM ALL POINTS:

Blue "H" hospital signs are reliable indicators of direction.

Nashoba Valley Medical Center is a community hospital serving communities in North Central Massachusetts. Located in Ayer, the hospital boasts a highly qualified medical staff offering community based primary care and a wide range of specialty services.

Our services include:

Emergency | Acute Care | Cardiovascular | Diagnostic Imaging | Joslin Diabetes Center
Occupational Medicine | Orthopedics | Surgery | Outpatient Rehabilitation



Nashoba Valley Medical Center

Where Excellence is Essential

200 Groton Road
Ayer, MA 01432
(978) 784-9000

www.nashobamed.com

Important Telephone Numbers

24- Hour Emergency Department	978-784-9250
Main Number	978-784-9000
Physician Referral	978-784-9257