
Respiratory Therapists

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Significant Points

- Job opportunities should be very good.
- An associate degree is the minimum educational requirement, but a bachelor's or master's degree may be important for advancement.
- All States, except Alaska and Hawaii, require respiratory therapists to be licensed.
- Hospitals will account for the vast majority of job openings, but a growing number of openings will arise in other settings.

Nature of the Work

Respiratory therapists and *respiratory therapy technicians*—also known as respiratory care practitioners—evaluate, treat, and care for patients with breathing or other cardiopulmonary disorders. Practicing under the direction of a physician, respiratory therapists assume primary responsibility for all respiratory care therapeutic treatments and diagnostic procedures, including the supervision of respiratory therapy technicians. Respiratory therapy technicians follow specific, well-defined respiratory care procedures under the direction of respiratory therapists and physicians.

In clinical practice, many of the daily duties of therapists and technicians overlap. However, therapists generally have greater responsibility than technicians. For example, respiratory therapists consult with physicians and other health care staff to help develop and modify patient care plans. Respiratory therapists also are more likely to provide complex therapy requiring considerable independent judgment, such as caring for patients on life support in intensive-care units of hospitals. In this *Handbook* statement, the term *respiratory therapist* includes both respiratory therapists and respiratory therapy technicians.

Respiratory therapists evaluate and treat all types of patients, ranging from premature infants whose lungs are not fully developed to elderly people whose lungs are diseased. Respiratory therapists provide temporary relief to patients with chronic asthma or emphysema, and they give emergency care to patients who are victims of a heart attack, stroke, drowning, or shock.

To evaluate patients, respiratory therapists interview them, perform limited physical examinations, and conduct diagnostic tests. For example, respiratory therapists test a patient's breathing capacity and determine the concentration of oxygen and other gases in a patient's blood. They also measure a patient's pH, which indicates the acidity or alkalinity of the blood. To evaluate a patient's lung capacity, respiratory therapists have the patient breathe into an instrument that measures the volume and flow of oxygen during inhalation and exhalation. By comparing the reading with the norm for the patient's age, height, weight, and sex, respiratory therapists can provide information that helps determine whether the patient has any lung deficiencies. To analyze oxygen, carbon dioxide, and blood pH levels,

therapists draw an arterial blood sample, place it in a blood gas analyzer, and relay the results to a physician, who then makes treatment decisions.

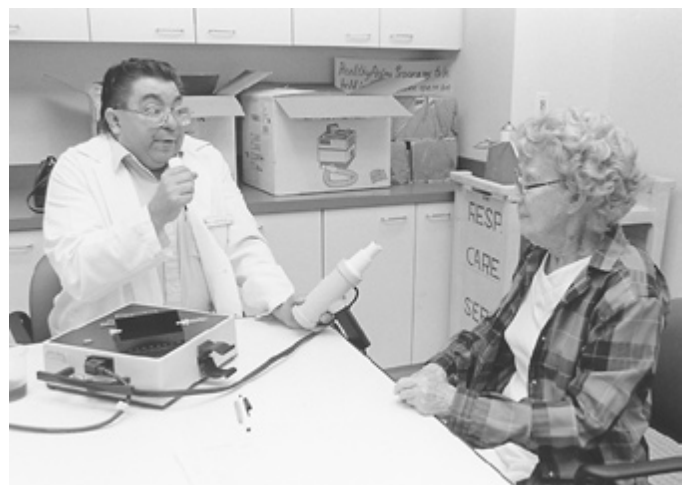
To treat patients, respiratory therapists use oxygen or oxygen mixtures, chest physiotherapy, and aerosol medications—liquid medications suspended in a gas that forms a mist which is inhaled. They teach patients how to inhale the aerosol properly to ensure its effectiveness. When a patient has difficulty getting enough oxygen into his or her blood, therapists increase the patient's concentration of oxygen by placing an oxygen mask or nasal cannula on the patient and setting the oxygen flow at the level prescribed by a physician. Therapists also connect patients who cannot breathe on their own to ventilators that deliver pressurized oxygen into the lungs. The therapists insert a tube into the patient's trachea, or windpipe; connect the tube to the ventilator; and set the rate, volume, and oxygen concentration of the oxygen mixture entering the patient's lungs.

Therapists perform regular assessments of patients and equipment. If a patient appears to be having difficulty breathing or if the oxygen, carbon dioxide, or pH level of the blood is abnormal, therapists change the ventilator setting according to the doctor's orders or check the equipment for mechanical problems.

Respiratory therapists perform chest physiotherapy on patients to remove mucus from their lungs and make it easier for them to breathe. Therapists place patients in positions that help drain mucus, and then vibrate the patients' rib cages, often by tapping on the chest, and tell the patients to cough. Chest physiotherapy may be needed after surgery, for example, because anesthesia depresses respiration. As a result, physiotherapy may be prescribed to help get the patient's lungs back to normal and to prevent congestion. Chest physiotherapy also helps patients suffering from lung diseases, such as cystic fibrosis, that cause mucus to collect in the lungs.

Therapists who work in home care teach patients and their families to use ventilators and other life-support systems. In addition, these therapists visit patients in their homes to inspect and clean equipment, evaluate the home environment, and ensure that patients have sufficient knowledge of their diseases and the proper use of their medications and equipment. Therapists also make emergency visits if equipment problems arise.

In some hospitals, therapists perform tasks that fall outside their traditional role. Therapists are becoming involved in areas



Respiratory therapists sometimes conduct diagnostic tests to evaluate patients.

such as pulmonary rehabilitation, smoking cessation counseling, disease prevention, case management, and polysomnography—the diagnosis of breathing disorders during sleep, such as apnea. Respiratory therapists also increasingly treat critical care patients, either as part of surface and air transport teams or as part of rapid-response teams in hospitals.

Work environment. Respiratory therapists generally work between 35 and 40 hours a week. Because hospitals operate around the clock, therapists may work evenings, nights, or weekends. They spend long periods standing and walking between patients' rooms. In an emergency, therapists work under the stress of the situation. Respiratory therapists employed in home health care must travel frequently to patients' homes.

Respiratory therapists are trained to work with gases stored under pressure. Adherence to safety precautions and regular maintenance and testing of equipment minimize the risk of injury. As in many other health occupations, respiratory therapists are exposed to infectious diseases, but by carefully following proper procedures they can minimize the risks.

Training, Other Qualifications, and Advancement

An associate degree is the minimum educational requirement, but a bachelor's or master's degree may be important for advancement. All States, except Alaska and Hawaii, require respiratory therapists to be licensed.

Education and training. An associate degree is required to become a respiratory therapist. Training is offered at the post-secondary level by colleges and universities, medical schools, vocational-technical institutes, and the Armed Forces. Most programs award associate or bachelor's degree and prepare graduates for jobs as advanced respiratory therapists. A limited number of associate degree programs lead to jobs as entry-level respiratory therapists. According to the Commission on Accreditation of Allied Health Education Programs (CAAHEP), 45 entry-level and 334 advanced respiratory therapy programs were accredited in the United States in 2006.

Among the areas of study in respiratory therapy programs are human anatomy and physiology, pathophysiology, chemistry, physics, microbiology, pharmacology, and mathematics. Other courses deal with therapeutic and diagnostic procedures and tests, equipment, patient assessment, cardiopulmonary resuscitation, the application of clinical practice guidelines, patient care outside of hospitals, cardiac and pulmonary rehabilitation, respiratory health promotion and disease prevention, and medical recordkeeping and reimbursement.

High school students interested in applying to respiratory therapy programs should take courses in health, biology, mathematics, chemistry, and physics. Respiratory care involves

basic mathematical problem solving and an understanding of chemical and physical principles. For example, respiratory care workers must be able to compute dosages of medication and calculate gas concentrations.

Licensure and certification. A license is required to practice as a respiratory therapist, except in Alaska and Hawaii. Also, most employers require respiratory therapists to maintain a cardiopulmonary resuscitation (CPR) certification.

Licensure is usually based, in large part, on meeting the requirements for certification from the National Board for Respiratory Care (NBRC). The board offers the Certified Respiratory Therapist (CRT) credential to those who graduate from entry-level or advanced programs accredited by CAAHEP or the Committee on Accreditation for Respiratory Care (Co-ARC) and who also pass an exam.

The board also awards the Registered Respiratory Therapist (RRT) to CRTs who have graduated from advanced programs and pass two separate examinations. Supervisory positions and intensive-care specialties usually require the RRT.

Other qualifications. Therapists should be sensitive to a patient's physical and psychological needs. Respiratory care practitioners must pay attention to detail, follow instructions, and work as part of a team. In addition, operating advanced equipment requires proficiency with computers.

Advancement. Respiratory therapists advance in clinical practice by moving from general care to the care of critically ill patients who have significant problems in other organ systems, such as the heart or kidneys. Respiratory therapists, especially those with a bachelor's or master's degree, also may advance to supervisory or managerial positions in a respiratory therapy department. Respiratory therapists in home health care and equipment rental firms may become branch managers. Some respiratory therapists advance by moving into teaching positions. Some others use the knowledge gained as a respiratory therapist to work in another industry, such as developing, marketing, or selling pharmaceuticals and medical devices.

Employment

Respiratory therapists held about 122,000 jobs in 2006. About 79 percent of jobs were in hospitals, mainly in departments of respiratory care, anesthesiology, or pulmonary medicine. Most of the remaining jobs were in offices of physicians or other health practitioners, consumer-goods rental firms that supply respiratory equipment for home use, nursing care facilities, and home health care services. Holding a second job is relatively common for respiratory therapists. About 12 percent held another job, compared with 5 percent of workers in all occupations.

Projections data from the National Employment Matrix

Occupational Title	SOC Code	Employment, 2006	Projected employment, 2016	Change, 2006-2016	
				Number	Percent
Respiratory therapists.....	—	122,000	145,000	23,000	19
Respiratory therapists.....	29-1126	102,000	126,000	23,000	23
Respiratory therapy technicians.....	29-2054	19,000	19,000	200	1

NOTE: Data in this table are rounded. See the discussion of the employment projections table in the *Handbook* introductory chapter on *Occupational Information Included in the Handbook*.

Job Outlook

Faster-than-average employment growth is projected for respiratory therapists. Job opportunities should be very good, especially for respiratory therapists with cardiopulmonary care skills or experience working with infants.

Employment change. Employment of respiratory therapists is expected to grow 19 percent from 2006 to 2016, faster than the average for all occupations. The increasing demand will come from substantial growth in the middle-aged and elderly population—a development that will heighten the incidence of cardiopulmonary disease. Growth in demand also will result from the expanding role of respiratory therapists in case management, disease prevention, emergency care, and the early detection of pulmonary disorders.

Older Americans suffer most from respiratory ailments and cardiopulmonary diseases such as pneumonia, chronic bronchitis, emphysema, and heart disease. As their numbers increase, the need for respiratory therapists is expected to increase as well. In addition, advances in inhalable medications and in the treatment of lung transplant patients, heart attack and accident victims, and premature infants (many of whom are dependent on a ventilator during part of their treatment) will increase the demand for the services of respiratory care practitioners.

Job prospects. Job opportunities are expected to be very good. The vast majority of job openings will continue to be in hospitals. However, a growing number of openings are expected to be outside of hospitals, especially in home health care services, offices of physicians or other health practitioners, consumer-goods rental firms, or in the employment services industry as a temporary worker in various settings.

Earnings

Median annual earnings of wage-and-salary respiratory therapists were \$47,420 in May 2006. The middle 50 percent earned between \$40,840 and \$56,160. The lowest 10 percent earned less than \$35,200, and the highest 10 percent earned more than \$64,190.

Median annual earnings of wage-and-salary respiratory therapy technicians were \$39,120 in May 2006. The middle 50 percent earned between \$32,050 and \$46,930. The lowest 10 percent earned less than \$25,940, and the highest 10 percent earned more than \$56,220.

Related Occupations

Under the supervision of a physician, respiratory therapists administer respiratory care and life support to patients with heart and lung difficulties. Other workers who care for, treat, or train people to improve their physical condition include registered nurses, occupational therapists, physical therapists, radiation therapists, and athletic trainers. Respiratory care practitioners work with advanced medical technology, as do other health care technicians including cardiovascular technologists and technicians, nuclear medicine technologists, radiologic technologists and technicians, and diagnostic medical sonographers.

Sources of Additional Information

Information concerning a career in respiratory care is available from:

► American Association for Respiratory Care, 9425 N. MacArthur Blvd., Suite 100, Irving, TX 75063.

Internet: <http://www.aarc.org>

For a list of accredited educational programs for respiratory care practitioners, contact either of the following organizations:

► Commission on Accreditation for Allied Health Education Programs, 1361 Park St., Clearwater, FL 33756.

Internet: <http://www.caahep.org>

► Committee on Accreditation for Respiratory Care, 1248 Harwood Rd., Bedford, TX 76021.

Information on gaining credentials in respiratory care and a list of State licensing agencies can be obtained from:

► National Board for Respiratory Care, Inc., 18000 W. 105th St., Olathe, KS 66061. Internet: <http://www.nbrc.org>