

Allied Health Workforce Projections, 2016-2030: Respiratory Therapists

This factsheet presents national-level supply and demand projections for respiratory therapists from 2016 through 2030 using HRSA's Health Workforce Simulation Model (HWSM).¹

Respiratory therapists care for patients with breathing problems, often related to chronic respiratory diseases such as asthma and emphysema, or acute diseases like pneumonia.² They also provide emergency care to patients suffering from heart attacks, drowning, or shock. Respiratory therapists conduct a variety of patient evaluation and education activities. Those working in home care settings teach patients and their families to use ventilators and other life-support systems. In hospital settings, they perform a myriad of duties, including managing ventilators and artificial airway devices, testing patients' breathing capacity, and providing supplemental oxygen and breathing treatments. An associate's degree is the minimum educational requirement, with employers often preferring applicants who possess a bachelor's or master's degree. All states except Alaska require respiratory therapists have a license to practice.

About the National Center for Health Workforce Analysis

The National Center for Health Workforce Analysis informs public and private sector decision-makers on health workforce issues by expanding and improving health workforce data, disseminating workforce data to the public, and improving and updating projections of the supply and demand for health workers. Visit the website: <https://bhw.hrsa.gov/national-center-health-workforce-analysis>

METHODS

While the nuances of modeling workforce supply and demand differ for individual health occupations, the basic HWSM framework remains the same across all occupations. For supply modeling, the HWSM's major components include common labor-market factors like unemployment and new entrants to the workforce (e.g., newly trained respiratory therapists), demographic and geographic characteristics of the existing workforce, and workforce participation decisions (e.g., patterns in retirement and hours worked). The model assumes that current supply patterns for respiratory therapists remain the same throughout the forecast period and projects forward in one-year increments. Each annual supply estimate becomes the starting point for the subsequent year, with the process repeated through 2030.

For demand modeling, the HWSM assumes that demand equals supply in 2016,³ and applies health care utilization patterns across future population demographics. The model provides demand projections under two scenarios: a "status quo" scenario (Scenario One) and an "evolving care delivery" scenario (Scenario Two).

Under **Scenario One**, the model assumes that 2016 health care use and delivery patterns for respiratory therapist services remain the same over the forecast period, and accounts for changes in population

¹ This model uses a micro-simulation approach where supply is projected based on the simulation of career choices of individual health workers. Demand for health care services is simulated for a representative sample of the current and future U.S. population based on each person's demographic and socioeconomic characteristics, health behavior, and health risk factors that affect their health care utilization patterns. For more information on data and methods, please see: <https://bhw.hrsa.gov/sites/default/files/bhw/nchwa/projections/hwsm-technical-report-to-dea.pdf>

² Composite descriptions of health occupations examined in this report are sourced from: Bureau of Labor Statistics. Occupational Outlook Handbook, Respiratory Therapists [online]. 2018. Accessed at: <https://www.bls.gov/ooh/healthcare/respiratory-therapists.htm>.

³ The assumption that supply equals demand at baseline is a standard approach in workforce projection modelling. Please refer to: Ono T, Lafortune G, Schoenstein M. "Health workforce planning in OECD countries: a review of 26 projection models from 18 countries." *OECD Health Working Papers*, No. 62. France: OECD Publishing; 2013: 8-11.

demographics and the commensurate shifts in respiratory therapist usage. This status quo scenario does not reflect potential changes in care utilization patterns in future years resulting from advancements in medicine and technology or shifts in health care delivery and payment models (e.g., team-based care, telemedicine).

Scenario Two builds upon Scenario One by incorporating the potential impact of evolving health care system trends and goals on respiratory therapist services. This includes assumptions related to improvement in population health (e.g. improved control of diabetes, modest reduction in excess body weight) and implementation of team-based care and continuum of care. Detailed information on the modeling of the evolving care delivery scenario can be found in an accompanying technical documentation report.⁴ Both supply and demand are reported as full-time equivalents (FTEs). FTE estimates may differ from actual counts of persons who are employed or providing care.

These estimates do not capture changes in health care delivery patterns or disparities between supply and demand at localized geographic levels. Quantifying changes to demand due to innovations in health care delivery models, payment reform, team-based care, health-seeking behaviors, and other health system-level factors presents many challenges. HRSA will continue incorporating such factors into its future workforce projections as the evidence-base evolves and reliable data sources become available.

FINDINGS

Nationally, approximately 111,210 respiratory therapists were active in the U.S. workforce in 2016. By 2030, the supply of respiratory therapists is expected to increase 50 percent to 166,930 FTEs (*Exhibit 1*).

Under **Scenario One**, demand for respiratory therapists is expected to increase 30 percent to 144,100 FTEs by 2030. Under **Scenario Two**, demand for respiratory therapists is projected to grow 35 percent to 149,920 FTEs by 2030. These estimates suggest the U.S. will have a sufficient supply of respiratory therapists to meet projected growth in demand for services in 2030 under both the status quo and the evolving care delivery scenarios.

Exhibit 1. Projected Supply and Demand for Respiratory Therapists in the United States, 2016-2030

| | Scenario One (Status quo) | Scenario Two (Evolving care delivery) |
|--|------------------------------|--|
| Supply | | |
| Estimated supply, 2016 | 111,210 | 111,210 |
| Projected supply, 2030 | 166,930 | 166,930 |
| New entrants, 2016-2030 | 98,830 | 98,830 |
| Attrition ^a , 2016-2030 | -43,650 | -43,650 |
| Total growth (%), 2016-2030 | 55,720 (50%) | 55,720 (50%) |
| Demand | | |
| Estimated demand, 2016 | 111,210 | 111,210 |
| Projected demand ^b , 2030 | 144,100 | 149,920 |
| Changing demographics, 2016-2030 | 32,890 | 32,890 |
| Achieving population health goals | NA | 7,210 |
| Increased managed care ^c | NA | 5,210 |
| Avoidable hospitalization and ED use | NA | -6,600 |
| Total growth (%), 2016-2030 | 32,890 (30%) | 38,710 (35%) |
| Projected Supply (minus) Demand, 2030 | 22,830 | 16,470 |

⁴ U.S. Department of Health and Human Services, Health Resources and Services Administration, National Center for Health Workforce Analysis. Technical Documentation for HRSA's Health Workforce Simulation Model. Rockville, MD: U.S. Department of Health and Human Services, 2018. Available from: <https://bhw.hrsa.gov/sites/default/files/bhw/nchwa/projections/hwsm-technical-report-to-dea.pdf>.

Notes: All numbers reflect full time equivalents (FTEs). Numbers may not sum to totals due to rounding. NA denotes "not applicable".
ED denotes "emergency department".

^a Includes retirement and mortality

^b Demand growth for status quo scenario reflects changing demographics only.

^c Patients in managed care plans tend to use more respiratory therapist service