HRSA Health Workforce

Allied Health Workforce Projections, 2016-2030:
Medical and Clinical Laboratory Technologists

This factsheet presents national-level supply and demand projections for medical and clinical laboratory technologists from 2016 through 2030 using HRSA's Health Workforce Simulation Model (HWSM).[1]

Medical and clinical laboratory technologists collect biological samples and perform tests to analyze body fluids, tissues, and other substances. The sample collections, tests, and procedures conducted by technologists are ordered by physicians, surgeons or other healthcare personnel. Entry-level technologist positions usually require a bachelor's degree with a concentration in medical technology or in one of the life sciences. Technologists are required to obtain national certification through one of many state certification boards, and twelve states require licensure for technologists.[2,3] These projections do not include medical and clinical laboratory technicians who perform similar but less complex tasks and who typically complete fewer education requirements than technologists.

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 technologists), demographic and geographic characteristics of the existing workforce, and workforce participation decisions (e.g., patterns in retirement and hours worked). However, due to low barriers to entry and exit for this occupation, current data on the technologist workforce does not support future supply projections, and, thus, this factsheet does not include supply projections for medical and clinical technologists. Improvements in data sources and modeling methodologies may support supply projections for these technologists in the future.

[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, Medical and Clinical Laboratory Technologists and Technicians [online]. 2018. Accessed at: https://www.bls.gov/ooh/healthcare/medical-and-clinical-laboratory-technologists-and-technicians.htm.

[3] The American Society for Clinical Laboratory Science. Personnel Licensure [online]. 2018. Accessed at: http://www.ascls.org/advocacy-issues/licensure.

For demand modeling, the HWSM assumes that demand equals supply in 2016,[4] 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 technologists' services remain the same over the forecast period, and accounts for changes in population demographics and the commensurate shifts in technologist 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 technologist 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.[5] 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.

[4] 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.

[5] 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.

FINDINGS

Nationally, approximately 166,730 medical and clinical laboratory technologists were active in the U.S. workforce in 2016 (*Exhibit 1*). Under **Scenario One,** demand for medical and clinical laboratory technologists is expected to increase 19 percent to 198,440 FTEs by 2030. Under **Scenario Two**, demand for technologists is projected to also increase 19 percent to 198,910 FTEs by 2030. Thus, in order to meet demand in 2030 under both the status quo and evolving care delivery scenarios, the medical and clinical laboratory technologist workforce needs to increase by approximately 32,000 FTEs.

Exhibit 1. Projected Supply and Demand for Medical and Clinical Laboratory Technologists in the United States, 2016-2030

	Scenario One (Status quo)	Scenario Two (Evolving care delivery)
Supply		
Estimated supply, 2016	166,730	166,730
Demand		
Estimated demand, 2016	166,730	166,730
Projected demand[a], 2030	198,440	198,910
Changing demographics, 2016-2030	31,710	31,710
Achieving population health goals	NA	6,590
Increased managed care	NA	3,820
Avoidable hospitalization and ED use	NA	-5,280
Clinical decision support system	NA	-4,660
Total growth (%), 2016-2030	31,710 (19%)	32,180 (19%)

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

[a] Demand growth for status quo scenario reflects changing demographics only.