



## Allied Health Workforce Projections, 2016-2030: Pharmacists

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

**Pharmacists** are licensed health care providers, with new entrants prepared at the doctoral level by the earning of a Doctor of Pharmacy (PharmD) degree from an accredited program.<sup>2</sup> All states require a license to practice pharmacy. Pharmacists manage the dispensing of medications to patients and provide patient education to ensure their safe use. In many states, pharmacists are also able to provide routine immunizations. In a few states, further training and certification allow additional advanced practice roles for clinical pharmacists such as conducting health and wellness screenings and counseling patients on healthy lifestyles.<sup>3</sup> In some states, advanced practice pharmacists can provide drug therapy management services under the direction or supervision of licensed physicians.<sup>4</sup>

### 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 pharmacists), 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 pharmacists 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,<sup>5</sup> 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).

<sup>1</sup> 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>

<sup>2</sup> American Association of Colleges of Pharmacy. Pharmacy School Admission Requirements [online]. 2018. Accessed at: <https://www.aacp.org/resource/pharmacy-school-admission-requirements>.

<sup>3</sup> Composite descriptions of health occupations examined in this report are sourced from: Bureau of Labor Statistics. Occupational Outlook Handbook, Pharmacists [online]. 2018. Accessed at: <https://www.bls.gov/ooh/healthcare/pharmacists.htm>.

<sup>4</sup> Standards of Practice for Clinical Pharmacists. 2014. American College of Clinical Pharmacy. Accessed at: <https://www.accp.com/docs/positions/guidelines/standardsofpractice.pdf>

<sup>5</sup> 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.

Under **Scenario One**, the model assumes that 2016 health care use and delivery patterns for pharmacist services remain the same over the forecast period, and accounts for changes in population demographics and the commensurate shifts in pharmacist 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 pharmacist 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.<sup>6</sup> 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 300,000 pharmacists were active in the U.S. workforce in 2016. By 2030, the supply of pharmacists is expected to increase 36 percent to 410,490 FTEs (*Exhibit 1*).

Under **Scenario One**, demand for pharmacists is expected to increase by 19 percent to 359,770 FTEs by 2030. Under **Scenario Two**, demand for pharmacists is projected to grow 29 percent to 391,850 FTEs in 2030. These estimates suggest the U.S. will have a sufficient supply of pharmacists 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 Pharmacists in the United States, 2016-2030**

	Scenario One (Status quo)	Scenario Two (Evolving care delivery)
<b>Supply</b>		
Estimated supply, 2016	302,600	302,600
Projected supply, 2030	410,490	410,490
New entrants, 2016-2030	205,310	205,310
Attrition <sup>a</sup> , 2016-2030	-97,420	-97,420
Total growth (%), 2016-2030	107,890 (36%)	107,890 (36%)
<b>Demand</b>		
Estimated demand, 2016	302,600	302,600
Projected demand <sup>b</sup> , 2030	359,770	391,850
Changing demographics, 2016-2030	57,170	57,170
Achieving population health goals	NA	13,550
Increased managed care	NA	14,000
Value based insurance design	NA	9,850
Avoidable hospitalization and ED use	NA	-5,320
Total growth (%), 2016-2030	57,170 (19%)	89,250 (29%)

<sup>6</sup> 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>.

	<b>Scenario One (Status quo)</b>	<b>Scenario Two (Evolving care delivery)</b>
<b><i>Projected Supply (minus) Demand, 2030</i></b>	<b>50,720</b>	<b>18,640</b>

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".

<sup>a</sup> Includes retirements and mortality.

<sup>b</sup> Demand growth for status quo scenario reflects changing demographics only.