HRSA Health Workforce

Health Workforce Projections: Critical Care Physicians and Nurse Practitioners

National Center for Health Workforce Analysis

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This fact sheet presents the national supply of and demand for critical care physicians and critical care nurse practitioners for 2013 through 2025 using HRSA's Health Workforce Simulation Model (HWSM).[1] While the nuances of modeling supply and demand differ for individual health professions, the basic framework remains the same. The HWSM assumes that demand equals supply in the base year. For supply modeling, the major components (beyond common labor-market factors like unemployment) include characteristics of the existing workforce in a given occupation, new entrants to the workforce (e.g., newly trained workers), and workforce decisions (e.g., retirement and hours worked patterns). For demand modeling, the major components include population demographics, health care use patterns (including the influence of increased insurance coverage), and demand for health care services (translated into requirements for full-time equivalents). Over the period studied, the model assumes that current national patterns of labor supply and service demand remain unchanged within each demographic group.[2] These projections do not account for the geographical distribution of providers which may impact access to care in certain communities.

BACKGROUND

This report identifies critical care physicians as individuals who are certified in critical care and primarily deliver services to patients in intensive care unit settings. Critical care physicians, also known as "intensivists," treat some of the most critically ill patients in the hospital, such as those requiring organ support and invasive monitoring procedures. Although there are different routes of subspecialty training available to become a critical care physician, all practitioners are required to have at least 2 to 3 years of fellowship training in critical care medicine before being eligible to take the board certification exam (jointly) administered by the American Board of Internal Medicine, the American Board of Surgery, the American Board of Pediatrics, and the American Board of Anesthesiology.[3]

Nurse practitioners with a subspecialty in critical care are graduates of Adult-Gerontology – Acute Care Nurse Practitioner (AG-ACNP) programs. AG-ACNPs with a subspecialty focus in critical care provide care to

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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-related behavior, and health risk factors that affect their health care utilization patterns. For more information on data and methods, please see http://bhw.hrsa.gov/healthworkforce/supplydemand/simulationmodeldocumentation.pdf.

2 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.

3 American College of Physicians. Available at https://www.acponline.org/about-acp/about-internal-medicine/internal-medicine-subspecialties/additional-training-options/critical-care-medicine

adults with critical life-threatening illnesses in a variety of intensive care settings. Upon graduation from a masters or doctor of nursing practice program, the nurse practitioner is able to take board certification and credentialing exams offered by the American Nurses Credentialing Center and the American Association of Critical-Care Nurses.

FINDINGS

Between 2013 and 2025, the supply of critical care physicians is estimated to grow by 57 percent and by 73 percent for critical care nurse practitioners (Exhibit 1). The demand for both critical care physicians and nurse practitioners is projected to grow by 16 percent. Thus, the projected growth in supply exceeds the projected growth in demand for critical care physicians and nurse practitioners, which suggests that the United States should have a more than sufficient supply of critical care providers to meet the projected growth in demand for services by 2025.

Exhibit 1. Estimated Supply and Demand for Critical Care Physicians and Nurse Practitioners in the United States, 2013 – 2025

	Critical Care Physicians (FTE)	Critical Care Nurse Practitioners (FTE)
Supply		
Estimated supply, 2013	3,570	2,880
Total supply growth, 2013-2025:	2050 (57%)	2,100 (73%)
New entrants	*2,990*	*3,090*
Attrition (e.g., retirements, mortality)[a]	*(40)*	*(30)*
Changing work patterns (e.g., part time to full time hours)[b]	*(900)*	*(960)*
Projected supply, 2025	5,620	4,980
Demand		
Estimated demand, 2013	3,570	2,880
Total demand growth, 2013-2025:	570 (16%)	460 (16%)
Changing demographics impact	*570*	*460*
Insurance coverage impact[c]	*0*	*0*
Projected demand, 2025	4,140	3,340
Projected Supply (minus) demand	1,480	1,640

The HWSM's demand projections indicate that all of the demand growth is associated with changes in demographics (the aging of the population and longer life expectancies) and improved disease detection. Together, they suggest that many Americans will be living longer and may potentially require more critical care often provided in intensive care units (ICU). As a result, these projections are reporting a growth in

demand for critical care physicians and nurse practitioners. While there is currently an adequate supply of critical care physicians and nurse practitioners to meet this demand growth, the model does not capture the likely shift in care delivery patterns that may occur.

About the National Center for Health Workforce Analysis

The National Center for Health Workforce Analysis informs public and private-sector decision-making related to the health workforce 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. For more information about the National Center for Health Workforce Analysis please visit our website at http://bhw.hrsa.gov/healthworkforce/index.html.