

# WWAMI CENTER FOR HEALTH WORKFORCE STUDIES

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## Project Summary

February 2004

### Washington State's Radiographer Workforce through 2020: Influential Factors and Available Data

**Background:** Washington State is experiencing a shortage of radiographers. We attempted to identify important factors affecting this workforce and data on supply and demand. Using the best available data, we developed two scenarios projecting the radiographer workforce (including radiation therapy technologists, nuclear medicine technologists, and radiologic technologists) through the end of the next decade.

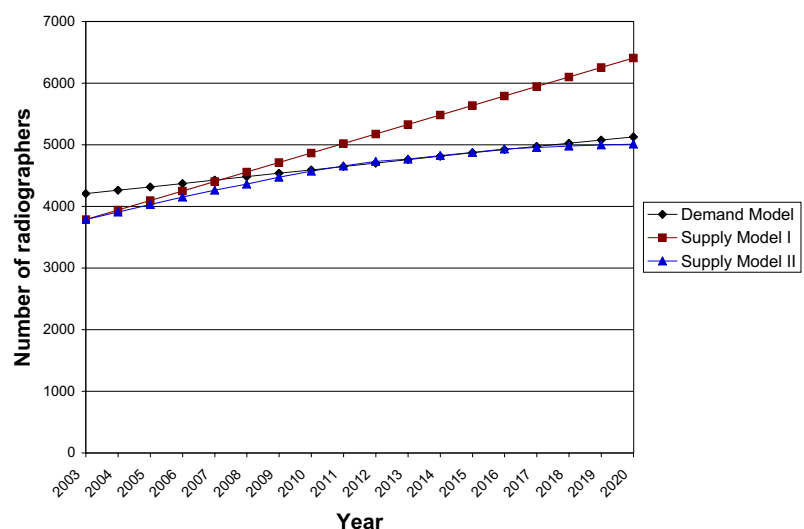
**Methods and Data Limitations:** There are few data sources available for radiographer workforce projections in Washington, which limits the precision of our models. We used four principal data sources: (1) 1998-1999 state licensing data and a supplementary licensing survey (no longer available) from the Washington State Department of Health, Office of Health Professions Quality Assurance, (2) a 2002 study of staffing in nonfederal acute care hospitals by the University of Washington Center for Health Workforce Studies and the Washington State Hospital Association, (3) data on radiographer educational program completions in the state from 1996 to 2003, and (4) U.S. Census Bureau state population data. Supply Model I uses recent trends in state licensing to estimate future supply, while Supply Model II projects educational output and retirement trends. Our Demand Model projects total radiographer employment and vacancies by extrapolating from hospital sector data and state population growth data.

**Results:** By comparing each supply model with the demand model, we derived two projection scenarios (Figure 1). Both scenarios assume that demand for services (adjusted for population growth) and rates of increase in supply of providers will continue at current levels. Beginning with a 10

percent total vacancy rate extrapolated from the 2003 hospital survey, both scenarios suggest that the current Washington State radiographer workforce shortage is likely to continue until at least 2007. But the two scenarios show divergent trends. One scenario, based on Supply Model I, projects a steady increase in supply, producing a 25 percent surplus by 2020. The other scenario, based on Supply Model II, projects a sustained equilibrium for several years after 2010. Approaching 2020, the vacancy rate begins to climb slightly.

**Challenges in Projecting Radiographer Supply and Demand:** The questions on the next page address important factors that affect radiographer supply and demand. The more we are able to quantify influences on this workforce, the more accurate and useful future supply and demand analyses will be.

**Figure 1. Radiographers in Washington State 2003-2020:  
A Demand Model and Two Alternative Supply Models**



- ✘ Recent increases in educational capacity will increase supply. Will Washington’s educational institutions continue to produce radiographers at this higher rate?
- ✘ How will more stringent accreditation standards affect staffing of radiographer education programs? Will new staffing requirements limit expansion of educational program capacity?
- ✘ Do more radiographers migrate into or out of the state?
- ✘ Will a new type of position, radiologic assistant, increase productivity, thereby increasing the supply of services?
- ✘ Will the decreasing supply of radiologists and nuclear medicine physicians—under whose supervision radiographers must practice—reduce radiographer supply?
- ✘ Women have traditionally made up the bulk of the radiographer workforce. Will new career opportunities draw women away from radiography?
- ✘ Will potential productivity gains through new filmless technology be offset by increased demand for new types of diagnostic and therapeutic applications?
- ✘ A growing population will increase demand. How will other changing population demographics, such as aging, affect demand in Washington?
- ✘ How equitably are radiographers distributed to meet demand throughout the state?

***Policy Implications:*** Our projections of the radiographer workforce are hampered by numerous critical information gaps, such as lack of data on job turnover, provider migration, and exits from the profession. We are also unable to predict or quantify future changes in the state’s health services delivery system and health policy. More resources are needed to collect high-quality data on a regular basis for continued monitoring and for workforce projections in the future.

*This study is more fully described in WWAMI Center for Health Workforce Studies Working Paper #89: Patterson DG, Skillman SM, Hart LG, Washington State’s Radiographer Workforce through 2020: Influential Factors and Available Data, February 2004. This working paper, and others projecting the state’s pharmacist and dental hygienist workforces, are available on the Web at <http://www.fammed.washington.edu/CHWS/>.*