Health Care Personnel Shortage Task Force

Annual Progress Report - 2011

December 2011

Workforce Training and Education Coordinating Board
128 10th Avenue SW, PO Box 43105, Olympia, 98504-3105
360-753-5662, Fax 360-586-5862
www.wtb.wa.gov

Table of Contents

1. **2011 Annual Report -- Priorities for 2011-12**
   -- Background
   -- Key Policies and Programs
   -- Current Supply Gaps and Completions
   -- Key Issues

2. **Primary Care Workforce Data Brief……..…….. Attachment A**

3. **American Recovery and Reinvestment Act Summary…….. Attachment B**

4. **Health Professions Education – Completion Statistics……. Attachment C**

5. **Health Profession Gap and Oversupply Projections …… Attachment D**

Health Care Personnel Shortage Task Force

The goal of the Health Care Personnel Shortage Task Force is to address the severe current and projected shortages of health care personnel in Washington. The Task Force has 20 members, representing business, labor, education, and government and provides regular updates and progress reports.

Health Care Personnel Shortage Task Force

2011 Annual Report

Priorities for 2011-12

The state's Health Care Personnel Shortage Task Force (Task Force) has identified key priorities for consideration by the Governor, Legislature and other health care and higher education leaders:

- While health care organizations may not currently have significant vacancies, this reprieve is due to current economic conditions. The underlying demographic issues that caused previous shortages (the aging health care workforce and the increasing health care needs of baby boomers, as well as the 2014 health care reforms) have not changed. Personnel shortages will return. Now is the time to examine demographic and workforce data so that the best decisions can be made about care delivery models and optimization of a diverse, well-educated staff. Being ahead of the curve when workforce shortages return will ensure that Washingtonians continue to receive the quality of care and patient protection essential to the working of the state.

- All stakeholders need to find ways to enroll and graduate students in high demand health care programs so that they practice, particularly in medically underserved communities.

- Health care educators must innovate and use evidenced-based approaches to expand capacity and increase efficiencies. Strategies such as competence-based learning, online and hybrid classes, must become commonplace or demand for health care workers at all levels will outpace educational capacity.

- With the implementation of health care personnel online licensing renewal, the Task Force recommends a health care workforce supply survey be attached to the online process as a way of minimizing costs, and analysis of the data be planned for when funds become available.

- While outside the scope of the Task Force, three key objectives need to be addressed by relevant government entities, professional Boards and Commissions, and higher education leaders:
    - Increase capacity for Graduate Medical Education to ensure graduating medical students can find residencies (preferably in the highest demand occupations, and in underserved rural and urban areas).
    - Create incentives and remove disincentives to work in primary care, such as addressing reimbursement rates.
    - Ensure higher education participates in the creation and development of new models of care that are being developed in response to health care reform.

Background

As Washington continues to grapple with a shortage of health care workers and an aging population demanding more services, the Health Care Personnel Shortage Task Force and its partners continue to focus attention on the importance of investing wisely in the state's health care workforce development pipeline.

In 2010, Congress passed health care reform legislation. The Patient Protection, Affordable Care and Accountability Act will expand the number of individuals eligible for Medicaid in Washington by an estimated 400,000 people starting January 1, 2014. Will Washington have an adequate workforce to serve the expanded number of patients? Even prior to the passage of this Act, the state and nation suffered from health care personnel shortages. Alleviated by the current recession, shortages will reappear unless there are increases in the supply of health care personnel.

In the world of the workforce system, the goal is to provide health care employers with the skilled workers they need, and workers with preparation for jobs that are in demand with good opportunities for advancement. In the world of health care, the issues are more commonly framed in terms of "appropriate access to care." Regardless of the perspective, all those involved must work together to address common objectives.

The Health Care Personnel Shortage Task Force

Since forming in 2003, the Task Force has brought attention to current and looming health care shortages. The main role of the Task Force is to develop a strategic plan, track progress on implementation, and bring together stakeholders to advocate for and develop sustainable

solutions. Each year the Task Force identifies priorities to bring to the Governor, Legislature and other policymakers and stakeholders.[1]

The Task Force is made up of leaders from education and training institutions; health care, migrant and community health services; labor and professional associations, and employer representatives. The Task Force is led by a Chair and Vice Chair who head educational institutions. [2]

This work is showing results, most notably in expanded capacity in health care programs at our institutions of higher education. For example, Task Force data shows that student completions in Associate Degree Nurse and Bachelors of Science in Nursing programs increased by 68 percent between 2003 and 2010, significantly increasing the supply of nurses throughout Washington. Continued strong demand, however, means that even with this increase, the state still falls somewhat short of the number of nursing graduates needed, as can be seen in the Workforce Board's latest skill gap analysis. (See below.)

Key Policies and Programs

High Demand Programs of Study Target Funding - Between 2003 and 2008, about 70 percent of funds directed by the Legislature to high demand Programs of Study were targeted at health care education and training programs. The State Board for Community and Technical Colleges (SBCTC) distributed funds through competitive requests for proposals ensuring that high-demand programs are more likely to secure matching funds and leverage additional private and other federal fund sources.

For the current biennium the Legislature has not earmarked funds for high demand Programs of Study. The Legislature has, however, directed the community and technical colleges to, "at least maintain, and endeavor to increase, enrollment opportunities and degree and certificate production in high employer-demand fields of study at their academic year 2008-09 levels." The four-year colleges and universities received no such directive.

Health Care Industry Skill Panels Deliver Strategic Solutions to Local Level - Seed funding from the federal Workforce Investment Act (WIA) and the state operating budget, in addition to state legislation, helped establish partnerships called Industry Skill Panels, many

[1] State statute directs the Workforce Training and Education Coordinating Board to staff the Task Force.
[2] See more about the Task Force, the strategic plan and past annual reports at: http://www.wtb.wa.gov/HCTFAbout.asp

with a focus on the health care workforce. Although WIA and state funds are no longer directed to these panels, some local areas have maintained them.

These Skill Panels have used the state's Health Care Personnel Shortage Task Force plan as a template to develop their own local plans and implement solutions. This work has meant that these local areas have been poised to take advantage of grant funding or private funding opportunities that become available because the relationships, the discussions, the barriers and the solutions have already been identified. Skill Panels have implemented a variety of programs, including:

- Mentorships for new health care workers.
- Local financial aid.
- "Teach the Teacher" programs to help math and science teachers impart the relevance of math and science in a health care setting.
- Health care exploration and preparation for youth.
- Incumbent worker training grants, recruitment of men into nursing, recruitment of diverse populations in health care fields.
- Career pathways for disadvantaged youth from certified nurse to licensed practical nurse to preparation for further education.

The first two Skill Panels were established in 2000. By 2003, all 12 Workforce Development Areas had a health care industry Skill Panel. Today, five health care Skill Panels are active. Contact information for Health Care Industry Skill Panels available at: www.wtb.wa.gov/HCTFSkillPanels.asp .

HEET-ing up Workplace Support with Pilots. The Legislature has provided funds, even through difficult budget times, to support the expansion of the Hospital Employee Education and Training (HEET) pilots. The Health Workforce Institute, affiliated with the Washington Hospital Association, SEIU Healthcare 1199 and the union's multi-employer training fund, and the State Board for Community and Technical Colleges (SBCTC) have worked together to enable entry level health care personnel in hospitals to access education and training. HEET is friendly to working adults, providing support from their workplace, to help them skill up and fill high demand health care positions. This helps low-income and ethnically diverse adults who otherwise might not go back to school, as well as providing employers with the skilled workforce they need to meet patient demand. The funding is allocated by competitive requests for proposals managed by the SBCTC. (www.sbctc.edu/college/_e-wkforcehospitalemployee.aspx). During 2011-12, four projects are funded at Bellingham Technical College, Everett and North Seattle Community Colleges, and the Seattle Community College District for a total of $1.6 million.

Combining Basic Skills Training with Occupational Training. While the Integrated Basic Education and Skills Training Program (I-BEST) was not developed just for health care education and training, health care programs have been a major focus for the expansion of this nationally recognized innovation, which combines occupational skills training with adult basic skills education.

Adult Basic Education programs alone have not successfully increased the employment and earnings, or college education of participants, according to analyses by the Workforce Board and SBCTC. However, when these programs are integrated with occupational skills training, students realized a very significant improvement in earning and employment outcomes. Also, a Community College Research Center evaluation in 2010 found significant improvements for I-BEST students in educational outcomes, when compared to similar students who took only Adult Basic Education. The Workforce Board's 2011 net impact evaluation of I-BEST found that I-BEST students' employment rate is 4 percentage points higher, and their annual earnings are $2,104 higher than similar individuals who did not enroll in education or training.

SBCTC – I-BEST contact information:
www.sbctc.edu/college/e_integratedbasiceducationandskillstraining.aspx
Community College Research Center evaluation regarding educational outcomes:
ccrc.tc.columbia.edu/Publication.asp?UID=692

The Allied Health Center of Excellence at Yakima Valley Community College. This Center serves as a hub to support health care education and training at the community and technical college level, to share best practices, and discuss methods for expansion and improvement of health care education. www2.yvcc.edu/coe

Online Health Career Recruitment and Outreach site. Washington's Health Opportunities for Today and Tomorrow website provides information on a variety of education and training programs (at all levels) available in the state. The web service, sponsored by the Allied Health Center of Excellence, provides an interactive way for students to explore health care careers and determine what it takes to get ready for postsecondary work in a health care program. www.wahott.com

Delivering Nurse Education to the State's Farthest Reaches. The Rural Outreach Nurse Education (RONE) program was developed by stakeholders from across the state and Lower Columbia College in Longview to provide distance learning associate degree nursing

education directly into rural communities scattered throughout the state in partnership with local health facilities. Students who enrolled in this program typically worked as certified nurses or licensed practical nurses. This program is allowing communities to "grow their own" health care workforce.
www.wtb.wa.gov/Documents/RONEnursingfrombestpracticebooklet.pdf

In 2009, RONE won a Governor's Best Practice Award in workforce development.
www.wtb.wa.gov/GovernorsBestPracticesAwards2009.asp

Recovery Act and Health Care Reform Grant Funds Boost Washington
For a more complete listing of Recovery Act Health grants received in Washington, see Attachment B.

In 2010, the U.S. Department of Labor awarded the Workforce Board a $5 million American Recovery and Reinvestment Act grant to train low-wage Washington health care workers, helping move them into higher-paying, high-demand health care professions with established career pathways. There are three areas of emphasis:

1. **Advancing entry-level workers along the nursing pathway,** beginning with Certified Nursing Assistants and Medical Assistants through Licensed Practical Nurses and, ultimately, reaching Registered Nurses.
2. **Providing jobs in long-term care and creating career transitions to acute care** by recruiting and training job seekers in the advanced home care aide apprenticeship, and providing a seamless pathway to acute, hospital health care. This is the first Home Care Aide apprenticeship in the country.
3. **Expanding the state's healthcare educational capacity** through workplace learning opportunities, online classes and recruiting more clinical instructors—including covering the cost of a cohort of Master prepared nurses in becoming Certified Nurse Educators.

The grant targets low-wage hospital workers who have an interest in health care; long-term care workers who previously have had no pathway to enter higher level health care and hospital work; and workers who have yet to be hired, but will fill slots as current workers are trained and reach higher levels on the health care career ladder.

This grant is being administered by the Workforce Board in conjunction with SEIU Healthcare 1199NW Multi-Employer Training and Education Fund, SEIU Healthcare NW Training Partnership, and the Health Work Force Institute. The labor/management education

partnership overseeing the grant money is called the Washington Health Care Worker Training Coalition. Other partners include community and technical colleges across the state, and six Workforce Development Councils. (See www.wtb.wa.gov/HealthTrainingCoalition.asp for more information on the Recovery Act grant.)

Latest Health Care Personnel Shortage Gaps

Attachment D shows the annual new supply of individuals prepared for health care occupations and the number of expected job openings during 2014-2019.[3] The figure below shows the 10 occupations with the largest gaps between in-state supply and demand.

Health Care Occupations with the Largest Gaps Between Supply and Demand

Occupation	2010 New Supply	2014-19 Projected Annual Net Job Openings	Annual Gap Between Supply & Demand
Physicians and Surgeons	165	529	364
Medical and Clinical Lab Techs.	76	309	233
Registered Nurses	2,677	2,867	190
Physical Therapists	33	203	170
Occupational Health and Safety Techs.	11	130	119
Radiation Techs.	133	204	71
Chiropractors	---	64	64
Physician Assistants	68	127	59
Dentists	55	112	57

The size of the gap for registered nurses is significantly lower than in previous reports. This is in part due to increased capacity in college nursing programs—more students and more

[3] Supply is based on the number of individuals completing health care programs discounted by the labor force participation rate. This adjustment is made to take into account that not all graduates enter the labor force. For registered nurses, the adjustment includes the percentage of graduates who do not pass the licensing exam.

graduates and the recent recession reducing demand. In addition, it should be noted that the demand estimate does not fully take into account increased demand due to the aging of the population, or increased access under the Affordable Health Care Act.

Latest on Health Care Completions

Registered nursing is not the only health care field with large increases in capacity and the number of completers. Attachment C shows the number of students completing health care programs in Washington between 2003 and 2010 for 35 health care fields. The next table shows some of the programs with the most notable increases.

Health Care Programs with Substantial Increases in the Number of Completers

Programs of Study	Percentage Increase in the Number of Completers from 2003 to 2010
Physical Therapy Assistant	439%
Nursing Assistant/Aide	231%
Medical Imaging	139%
Surgical Technology	108%
Advanced Registered Nurse Practitioner	76%
Registered Nurse (ADN and BSN)	68%
Dental Hygiene	33%
Physician Assistant	23%
Pharmacy	17%

Key Issues

Budget Cuts May Limit Enrollments in Health Care

Declining funding for higher education means fewer higher cost program enrollments unless college and university leaders maintain a specific, concerted effort to maintain enrollments in these programs. During the past two biennia, the state has reduced state funding for community and technical colleges by $330 million. According to the SBCTC, these cuts are reducing enrollments during the current biennium, especially in basic skills and high cost workforce programs. According to the Council of Presidents, state funding for Washington's public baccalaureate institutions has been cut by $785 million. Large tuition increases at both the two- and four-year institutions have made up for much of the reductions in state funding, but overall funding is still down.

The Loss of the Health Scholarship and Loan Repayment Program

The state Health Scholarship and Loan Repayment Program was a key tool that encouraged students to work in medically underserved rural and urban areas upon completion of their health care education program. In 2010, the program's funding was suspended due to ongoing state budget woes.

Ongoing Need for Data

As part of assessing the impact of health care reform, the state and stakeholders will need to better understand the composition of the state's health care workforce. While some personnel shortage gaps are known, lack of information about health care personnel hampers the ability to develop targeted solutions in local areas. Important information includes: What kind of personnel exists, whether they work in direct care, their specialties, and what new workforce needs are emerging. Beginning in 2008, due to budget cuts, the Department of Health decided to suspend the health workforce survey that was directed in 2006 legislation, SB 6193. This puts Washington into a deficit position in terms of solid supply data.

Physicians and Graduate Medical Education

In response to national projections of physician shortages, the American Association of Medical Colleges has advocated that all medical schools increase enrollments by 30 percent. The Workforce Board's gap analysis shows that physician and surgeon shortages are projected to be 364 per year. This analysis is likely to underestimate shortages in Washington due to two reasons: 1) it does not take into account the number of years needed for graduate medical education, and 2) it does not take into account that the University of Washington Medical School serves a five-state region.

Another concern is the issue of residency capacity. While enrollment capacity in medical school has been increasing, graduate medical education has not been increasing at the same rate. Funds that support graduate medical education through the Center for Medicare and Medicaid Services (CMS) are capped. The challenge of funding makes it difficult to expand graduate medical education at the same rate that medical school positions are expanding. In the next several years, graduate medical education positions are predicted to be fewer than the number of physicians graduating from medical school.

With the passage of health care reform there is an even greater focus on primary care. Since 2002, fewer and fewer medical school graduates have chosen primary care as an area of specialty, perhaps because of the difference in the rate of reimbursement compared to that of subspecialties. These issues are beyond the scope of the Health Care Personnel Shortage Task

Force but we recommend that incentives to work in primary care be developed by the relevant government entities, higher education leaders, and professional associations. In addition, educational programs will need to respond to new models of care, and professional associations and professional Boards and Commissions will need to review their educational statutes and rules.

Attachment A

The following brief was prepared by the Health Care Personnel Shortage Task Force staff of the Workforce Training and Education Coordinating Board in September 2010 for the Joint Legislative Committee on Health Care Reform. This brief is being presented as it was originally prepared. Please note that some of the data presented below has been updated. For instance, see Attachment D for a more current summary of health care profession supply and demand.

Primary Care Workforce Data Brief

Overview

This brief provides information on health workforce data in Washington, including:

1. Two definitions of primary care.
2. Workforce data on select primary care occupations and a few policy implications. Professions included are:
   - Physicians
   - Physician Assistants
   - Advanced Registered Nurse Practitioners
   - Dentists
   - Dental Hygienists
3. Labor market analysis on supply and demand in selected health care occupations.
4. Background and status of the state's discontinued Health Workforce Survey and ideas for a future survey.

1. How Do We Define Primary Care?

The occupations that should be included as "primary care" occupations continues to be a question open for debate. Section 5501 of the Patient Accountability and Affordable Care Act of 2010 defines a primary care practitioner as an individual who:

- Is a physician with a primary specialty designation of family medicine, internal medicine, geriatric medicine, or pediatric medicine or
- Is a nurse practitioner, clinical nurse specialist, or physician assistant, and
- For whom primary care services are at least 60 percent of the allowed charges in a prior period determined appropriate by the Secretary.[4]

[4] Sec 5501 of the Affordable Care Act also refers to definitions in the Social Security Act 1861 (aa) (5): (A) The term "physician assistant" and the term "nurse practitioner" mean, for purposes of this title, a physician assistant or nurse practitioner who performs such services as such individual is legally authorized to perform (in the State in which the individual performs such services) in accordance with State law (or the State regulatory mechanism provided by State law), and who meets such training, education, and experience requirements (or any combination thereof) as the Secretary may prescribe in regulations. (B) The term "clinical nurse specialist" means, for purposes of this title, an individual who— (i) is a registered nurse and is licensed to practice nursing in the State in which the clinical nurse specialist services are performed; and (ii) holds a master's degree in a defined clinical area of nursing from an accredited educational institution.

The U.S. Health and Human Services Department has provided guidance in response to workforce planning grants issued under the Affordable Care Act to use the Institute of Medicine definition of primary care:
"Primary care is the provision of integrated, accessible health care services by clinicians who are accountable for addressing a large majority of personal health care needs, developing a sustained partnership with patients, and practicing in the context of family and community."[5]

While this brief focuses on five key primary care occupations, the advisory group may consider extending the focus to a wider group of occupations that support primary care and particularly those that are experiencing severe current and projected shortages. Expanding supply through increasing the numbers completing health care education is an important method for meeting our state's need. However, more will need be done. Policymakers and administrators will need to test new models of care delivery as another way to meet future health workforce needs. These changes in health care delivery will also require changes in education and training delivery.

2. Workforce Data on Primary Care Shortages Physicians

Washington faces a current and projected shortage of physicians. With the passage of the Affordable Care Act, an estimated additional 400,000 to 500,000 patients will be eligible for medical coverage in Washington creating an even greater need for primary care physicians. The trend for more than a decade is for fewer medical graduates to choose primary care as their area of specialty.

To provide an overall idea of the size of Washington's physician workforce, the Department of Health reported that as of July 31, 2010, there were 23,993 individuals licensed to work as physicians in Washington with unrestricted licenses. In addition there were 943 physicians with limited licenses (such as fellowships / teaching positions) and 13 physicians with temporary permits.[6] In July 2010, the Department of Health issued 228 licenses.

According to the Washington Office of Financial Management, Office of Strategic Health Planning, there were 19,904 licensed physicians in 2008 (18,295 Medical Doctors and 809 Doctors of Osteopathic Medicine) with residences in Washington.[7]

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[5] Excerpt from the Institute of Medicine, "Defining Primary Care: An Interim Report (1994)" available National Academies Press: www.nap.edu/openbook.php?record_id=9153&page=1
[6] Information obtained from Washington State Medical Quality Assurance Commission, Washington State Department of Health, August 2010.
[7] Office of Financial Management, *Strategic Health Planning: A Progress Report,* Forecasting Division, 2010, Chapter 6: Regional Availability and Future Demand for Health Care Workforce.

Table 1 shows the ratio of population to physicians and some selected specialties, provides breakdowns from Eastern Washington and Spokane County and provides comparisons to the U.S. average. While Washington is above the U.S. average in terms of the numbers of family medicine physicians per 10,000 population, the state is below average for pediatrics, internal medicine, general surgery and OB-GYN physicians.

Table 1: Ratio of Physicians* per 10,000 Population by Discipline

	Washington	Eastern Washington	Spokane County	United States
Family Medicine	4.33	4.47	4.66	2.94
General Internal Medicine	2.47	2.01	2.63	2.80
General Pediatrics	1.35	.93	1.04	1.49
OB-GYN	1.11	.93	1.11	1.21
General Surgery	.66	.61	0.83	.74
Other Specialties	11.29	8.78	13.81	11.03
Overall	**21.21**	**17.73**	**24.07**	**20.21**
Population	6,182,560	1,358,898	433,726	292,936,668

*MDs and DOs
Source: Mark Doescher, MD, MSPH, Center for Health Workforce Studies and WWAMI Rural Health Research Center, University of Washington School of Medicine, August 2010.

As with most health care personnel, a large proportion of physicians in Washington are reaching retirement age. The aging of the population is one of the main factors causing current and projected structural shortages. The aging population means both an increase in numbers of patients seeking services, coupled with a reduction in the number of health care personnel to serve them. When retirement age of physicians is analyzed by county, projected shortages for several rural and underserved areas are exacerbated.

Washington is a major importer of physicians with 85 percent of all physicians coming from outside the state (see Table 2). Nationally about 27 percent of students entering medical residencies were trained in other countries.[8]

[8] Testimony before the Committee on Health, Education, Labor, and Pensions (HELP) United States Senate by Ed Salsberg, Director, Association of American Medical Colleges.

Table 2: Percentage of Physicians from Outside Washington

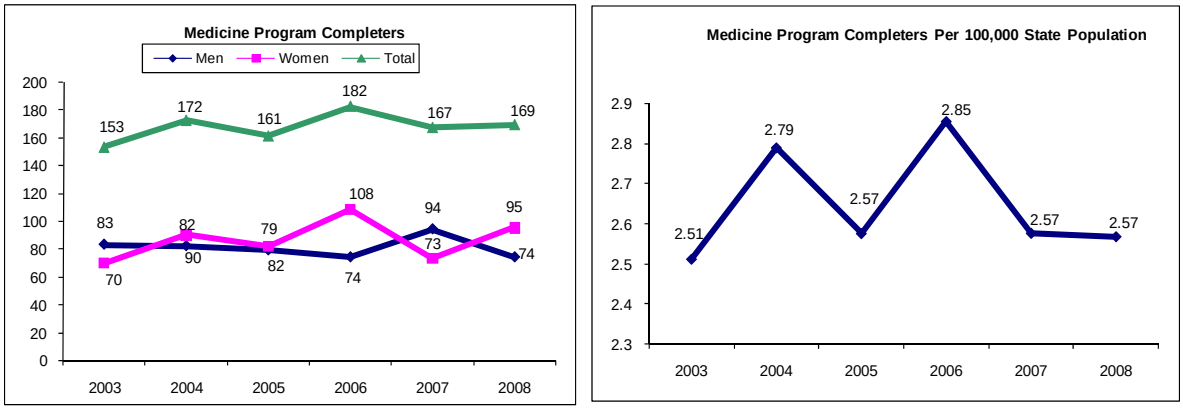
	All Physicians	Family Medicine	General Internal Medicine	General Pediatrics	Obstetrics-Gynecology	General Surgery	Other specialties
WA	85%	77%	82%	86%	85%	90%	86%

Source: Mark Doescher, MD, MSPH, Center for Health Workforce Studies and WWAMI Rural Health Research Center, University of Washington School of Medicine, Presentation to the Health Care Personnel Shortage Task Force, December 1, 2009.

The Workforce Training and Education Coordinating Board's (Workforce Board) supply/demand gap analysis compares the number of projected net job openings to the supply of new graduates from in-state health care education programs including medical programs. This analysis found that Washington will need at least an additional 340 physicians per year for each of the five years from 2012 to 2017. It should be noted that this analysis does not take into account the fact that medical graduates need three to seven years of specialty residency training after completing medical school. Primary care residencies usually take three years after completing medical school.

In order to track changes in health care education program completions, the Workforce Board documents completions of postsecondary health career educational programs throughout Washington. Data for this report come from the Integrated Postsecondary Education Data system (IPEDS) of the National Center for Education Statistics for 2003 through 2008. One university offered a program in Medicine in 2008, the same as in 2003 (the University of Washington).

Figure 1: Medical Program Completers by Gender and per 100,000 State Population 2003-2008



Source: Workforce Training and Education Coordinating Board, *Health Professions Education in Washington Completions 2003-2008*, 2009.

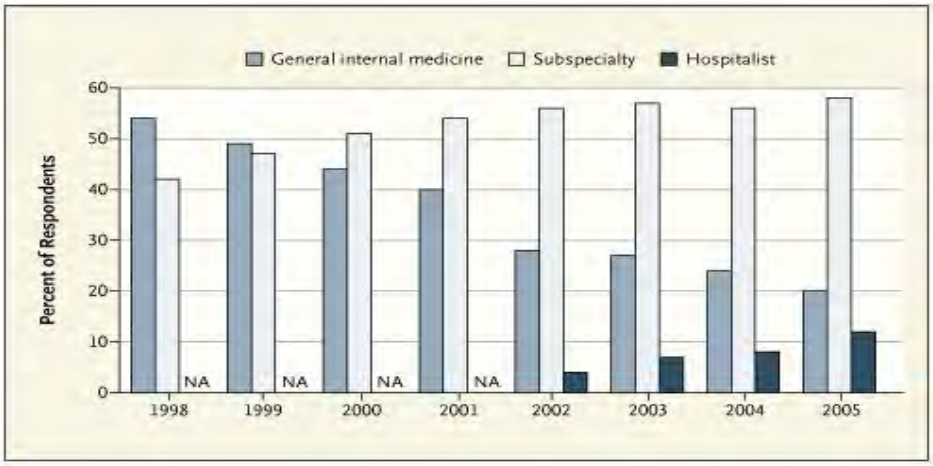
The University of Washington medical school serves a five-state region: Washington, Wyoming, Alaska, Montana and Idaho. Compared to other states, these states produce many

fewer physicians per 100,000 population. As shown in the Figure 1, medical program completions rose from 153 to 169 between 2003 and 2008 which is an increase of 10.5 percent. Completions per 100,000 population increased by 2.3 percent from 2003 to 2008. About 56 percent of program completers were female in 2008 compared to 45.8 percent in 2003, a 23 percent increase.

In 2005, a private non-profit school, the Pacific Northwest University of Health Sciences, opened. The school enrolled 75 osteopathic medical school students. In 2009-2010 enrollments in osteopathic medicine grew to 150.[9]

A major trend in recent years is the number of medical graduates who are choosing *not* to enter primary care. Figure 2 shows that between 1998 and 2005 those graduates choosing general internal medicine fell dramatically by over 30 percent, while those choosing subspecialties rose nearly 20 percent. Research suggests that payment methods for general internists have contributed to the creation and rise of hospitalists (Physicians who specialize in the practice of hospital medicine) and the reduction of students choosing primary care as a specialty.[10] After completing a primary care residency, residents may then choose to do a subspecialty but would then be considered a specialist rather than a primary care provider.[11]

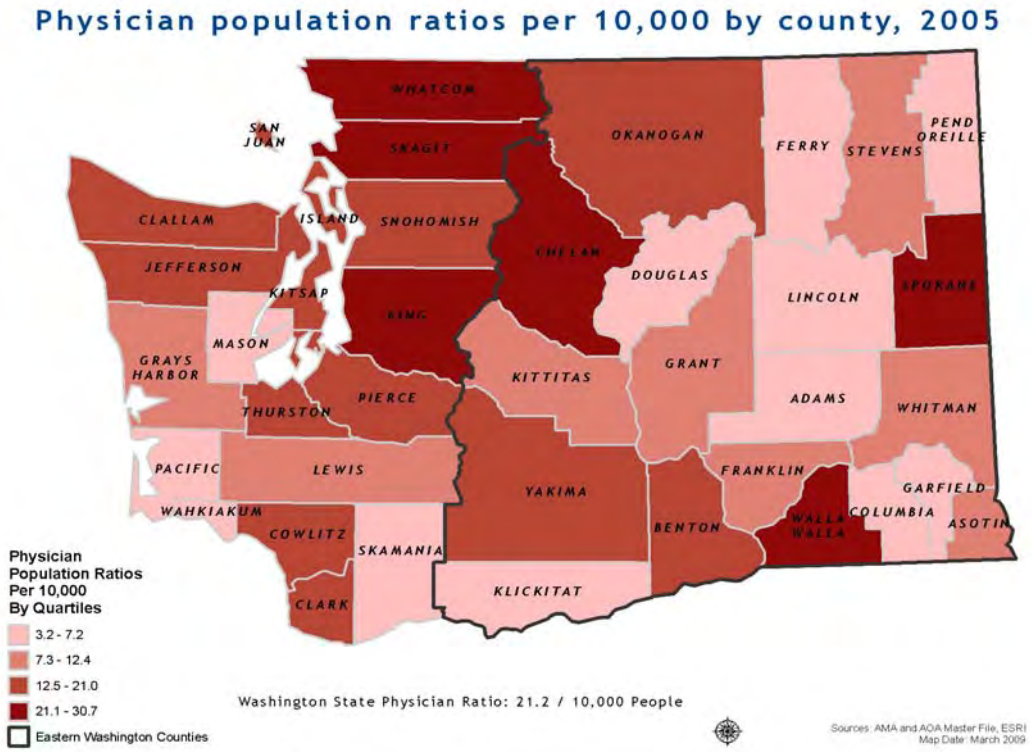
Figure 2: Proportions of 3rd-Year Internal Medical Residents Choosing Careers as Generalists, Subspecialists, and Hospitalists



Source: Mark Doescher, MD, MSPH, Center for Health Workforce Studies and WWAMI Rural Health Research Center, University of Washington School of Medicine, Presentation to the Health Care Personnel Shortage Task Force, December 1, 2009.

[9] Graduates of osteopathic medical schools (DOs) represent about 11 percent of all physicians entering graduate training each year in the USA. Ibid 4.
[10] Ibid 4.
[11] Bruce Steinwalt, Director Health Care, GAO, *Testimony Before the Committee on Health Education, Labor, and Pensions, U.S. Senate,* February, 2008.

Figure 3. Rural and Underserved Areas

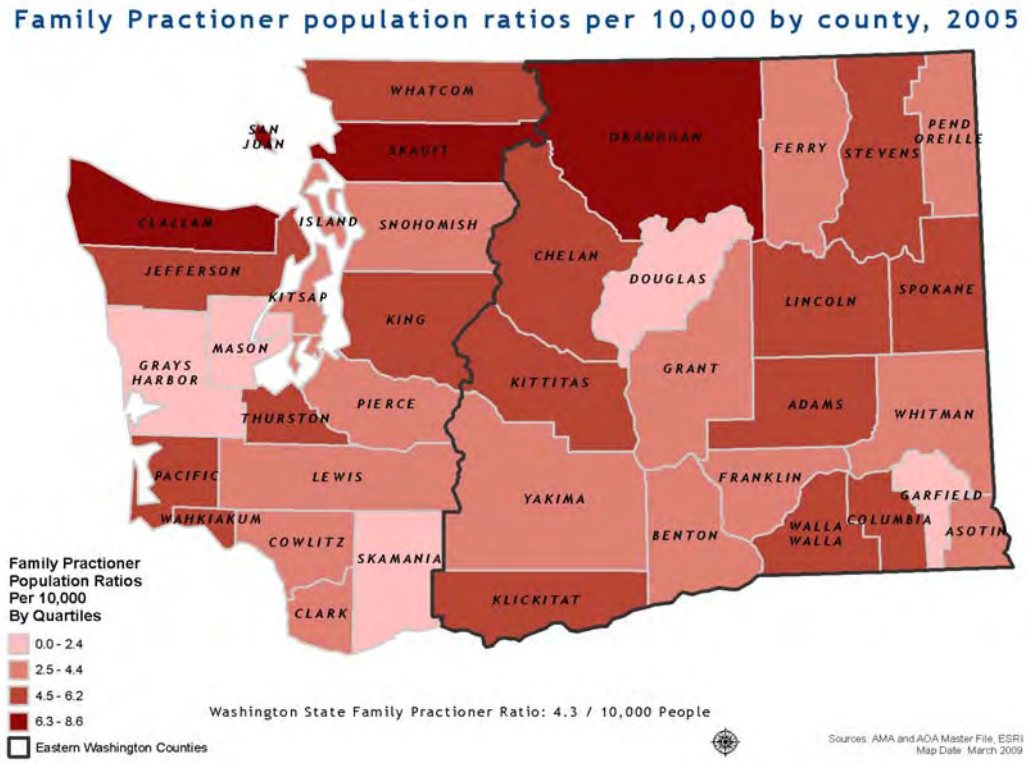


Source: Mark Doescher, MD, MSPH, Center for Health Workforce Studies and WWAMI Rural Health Research Center, University of Washington School of Medicine, Presentation to the Health Care Personnel Shortage Task Force, December 1, 2009.

The 14 percent of the state population that reside in rural areas[12] already faces daunting physician shortages. For example in 2009, nearly 1.4 million residents of Eastern Washington had a per capita physician supply that was only 87 percent the national average.[13] Also, the proportion of physicians in Eastern Washington facing retirement in the next decade is greater than the national average.[14] In 2010, using the Health Resource and Services Administration's (HRSA) designation criteria for Health Professional Shortage Area (HPSA) or a Medically Underserved Area or Population (MUA/P), the Washington State Department of Health's Office of Rural and Community Health indicates that almost all counties in the state meet the criteria: 37 of 39 counties have or submitted a request for a full or partial county *Primary Care HPSA* designation. There are a total of 54 full/partial county primary care designation—of which 29 are geographic and 25 are population.

[12] Skillman SM, Andrilla CHA, Alves-Dunkerson JA, Comenduley M, Yi J, Doescher MP. *Washington State's Oral Health Workforce.* Final Report #130. Seattle, WA: WWAMI Center for Health Workforce Studies, University of Washington; Nov 2009.
[13] Doescher MP, presentation to Eastern Washington Graduate Medical Education Expansion committee, June 30, 2009, Spokane, WA.
[14] Ibid #12.

Figure 4:



Source: Mark Doescher, MD, MSPH, Center for Health Workforce Studies and WWAMI Rural Health Research Center, University of Washington School of Medicine, Presentation to the Health Care Personnel Shortage Task Force, December 1, 2009.

Policy Implications for Physicians

Since Washington imports the majority of its physicians, and faces increased competition from other states and countries for these providers, in-state production of medical graduates and residency opportunities, particularly in primary care, will need to be expanded[15] To address the differences in supply by specialty and geographic area, any increase in class size in Washington should be coupled with obligations to serve in high need specialties and locations. As students are more likely to wish to return to where they have family ties and obligations, enrolling more students who are from high need locations can be an effective way to place new physicians in high need areas.

State Medicaid programs are not obligated to pay for graduate medical education. Some states use Medicaid revenues to pay a portion, such as subsidies to teaching hospitals and clinics, support of clinical education programs, and Medicaid reimbursement to hospitals for teaching costs. Expanding the medical education program together with a service obligation

[15] In 2008 the American Association of Medical Colleges has called for a 30 percent increase in medical school enrollment and a commensurate increase in graduate medical education (GME) training positions. See: AAMC, Policy Priorities, December, 2008. www.aamc.org/advocacy/obamatransition.pdf

is one option for reducing reliance on physicians trained outside of the University of Washington program.

In short:

- Expand class size in medical school
- Expand residency opportunities
- Create admission policies to meet targeted needs
- Provide primary care clinical experiences
- Provide financial support and policies to ease the debt burden
- Couple student financial support with service obligations for high-need specialties (especially primary care) and locations (rural and underserved).

Physician Assistants

A physician assistant (PA) practices medicine under the supervision of a physician and provides a broad range of health care services that were traditionally performed by a doctor. PAs may perform physical exams, diagnose illnesses, develop and carry out treatment plans, order and interpret lab tests, suture wounds, assist in surgery, and provide preventive health care counseling. As of July 31, 2010 Washington had 2,365 PAs.[16]
According to the Washington Academy of Physician Assistants, approximately 50 percent of PAs practice in primary care (family medicine, internal medicine, and pediatrics) and about 23 percent are in surgery or the surgical subspecialties.

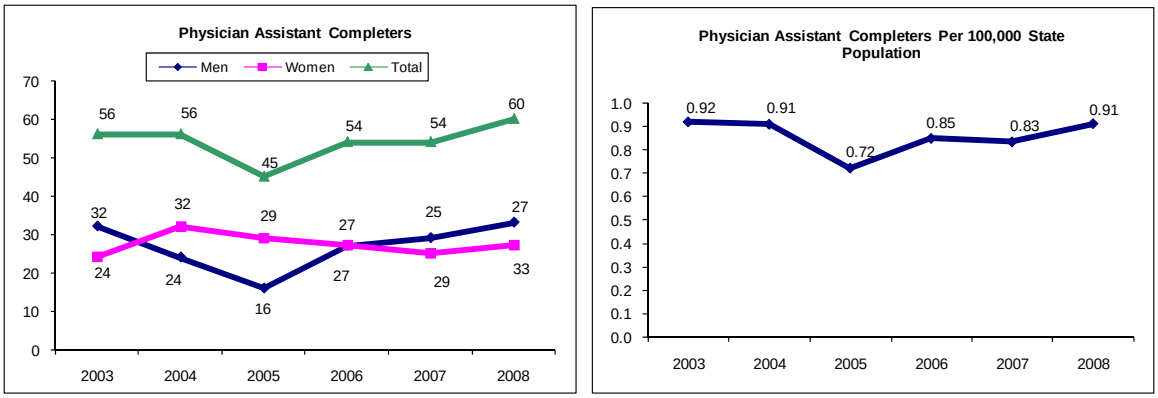
Most PA programs across the United States require applicants to have previous health care experience and some college education. Typical applicants to PA programs include nurses, EMTs, and paramedics who already have a bachelor's degree and more than four years of health care experience. An accredited PA program lasts 25 months on average. After graduation, PAs are required to take ongoing continuing medical education classes and be retested regularly.

Only one school in Washington offers a physician assistant program. MEDEX Northwest, the Physician Assistant Training Program at the University of Washington School of Medicine is a certificate program with either a bachelor's or a master's degree option that serves the five-state region, similar to the medical school. In 2010, 589 students applied and 108 were accepted to study in Seattle, Spokane, Yakima and Anchorage combined. Fifty-eight of these students (54 percent) are from Washington.

[16] Information obtained from Washington State Medical Quality Assurance Commission, Washington State Department of Health, August 2010.

The number of Washington students who have completed physician assistant programs has increased by 7.1 percent from 2003 to 2008 and 45 percent of program completers were female in 2008 compared to 42.9 percent in 2003. Completions per 100,000 population decreased by 0.8 percent from 2003 to 2008. These numbers are relatively small and might not be statistically significant. See Figure 5 for program completions in Washington.

Figure 5: Physician Assistant Program Completers by Gender and per 100,000 - 2003-2008



Source: Workforce Training and Education Coordinating Board, *Health Professions Education in Washington Completions 2003-2008*, 2009.

Rural and Underserved Areas: Physician Assistants

Several policy papers have recommended expanding the number of physician assistants in rural clinics or to provide independent primary care services where there is a lack of access to primary care. Recent graduates of PA programs indicate they are less likely to locate in rural communities than their predecessors.[17]

Policy Implications: Physician Assistants

PAs, working together in a team with a primary care physician and a nurse practitioner, can help to double the number of patients served (from 1,500 for a physician working alone to 3,000). Policies and incentives to expand these types of partnerships should be explored. This would likely require a more in-depth study of where physician assistants are working and an expansion in the number of students enrolling and completing physician assistant programs. It would also require that policymakers incentivize this kind of practice and team work. Financial aid support could include service obligations similar to those outlined above for physicians where appropriate.

As physician assistant programs last 25 months on average, Washington students might benefit from the expansion of program options beyond the University of Washington.

[17] Thomas C. Ricketts, PhD, MPH, Workforce Issues in Rural Areas: A Focus on Policy Equity American Journal of Public Health, 2005. http://www.ncbi.nlm.nih.gov/pmc/articles/PMC1449848.

Advanced Registered Nurse Practitioners

Advanced registered nurse practitioners (ARNPs) include nurse anesthetists, nurse midwives, and nurse practitioners. According to the Washington Nursing Quality Assurance Commission, there were 4,659 ARNPs licensed to practice in Washington in June 2010.[18] This compares to 4,512 in the Spring of 2008 representing an increase of 3.3 percent. In 2008, 72.3 percent of ARNPs licensed in Washington, practiced in Washington.

The total number of ARNPs in the state increased slightly from 68.5 per 100,000 population (based on OFM state population figures) in 2008 to 69.2 in 2010. As a result of the Health Workforce Survey that was directed in 2006 legislation (SB 6193), advanced registered nurse practitioners were among the select group of licensed professionals included in the health workforce survey. Due to budget reductions, the Department of Health elected to discontinue the survey in December 2008.

The Washington Center for Nursing contracted with the UW Center for Health Workforce Studies to conduct an analysis of the raw data collected. The major findings among practicing ARNPs in Washington in 2008 were[19]:

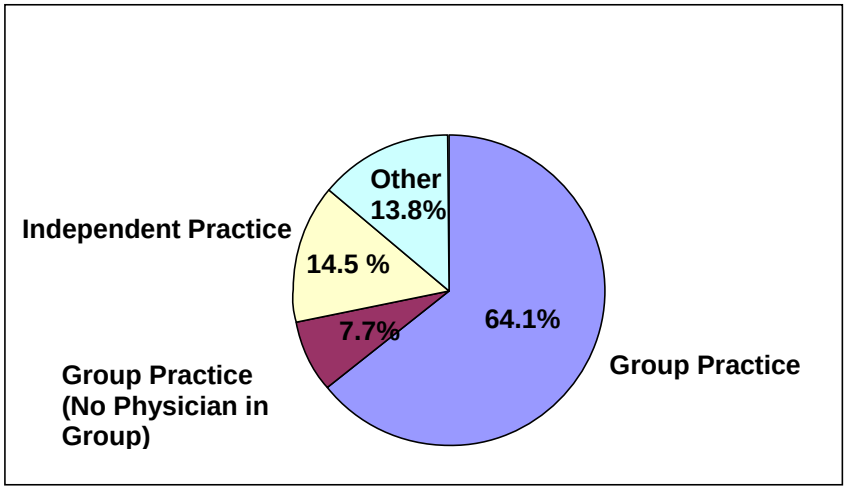
- The average age was nearly 50.
- 65 percent worked full time.
- More than half (55 percent) of the ARNPs were in primary care practice areas:
  - 29 percent family practice
  - 14 percent adult practice
  - 11 percent psychiatry/mental health
  - 10 percent women's health
  - 6 percent pediatric
- Nurse midwives were 7 percent of the ARNP workforce.
- Nurse anesthetists were 9 percent of the ARNP workforce.
- Two-thirds worked in ambulatory/outpatient settings.
- Fewer than 10 percent were non-white or Hispanic.
- Nearly 13 percent were male (about 46 percent of nurse anesthetists were male).
- Nearly a quarter of Washington ARNPs worked in independent practice or in a group practice that did not include a physician.

[18] Analysis conducted by Sue Skillman, Deputy Director, UW Center for Health Workforce Studies. ARNP license files contain name, age, mailing address, age and gender.

[19] Susan M. Skillman, MS, C. Holly A. Andrilla, MS, Louise Kaplan, PhD, ARNP, Marie-Annette Brown, PhD, ARNP, FAAN, *Demographic, Education, and Practice Characteristics of Advanced Registered Nurse Practitioners in Washington State: Results of a 2008 Survey,* Report #124, UW Center for Health Workforce Studies, April 2009.

In terms of practice arrangements, most ARNPs work in a group practice (71.8 percent). Of these 7.7 percent are in a practice that has no physician in the group. Another 14.5 percent of ARNPs have an independent practice.

Figure 6: Practice Arrangement of ARNPs in Washington.



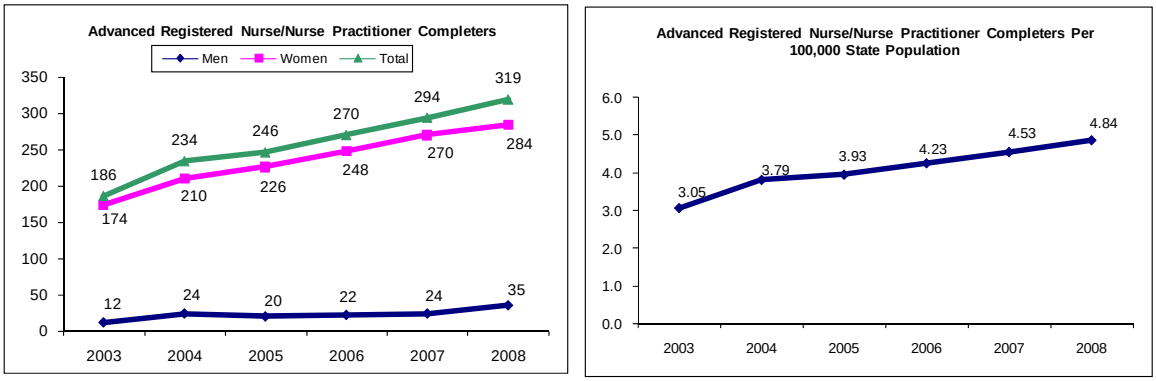
Source: Adapted from Skillman et al, *Demographic, Education, and Practice Characteristics of Advanced Registered Nurse Practitioners in Washington State: Results of a 2008 Survey,* Report #124, UW Center for Health Workforce Studies, April 2009.

According to the 2008 survey, the majority of ARNPs (67%) work in Ambulatory / Outpatients Clinics. The next largest portion of ARNPs(13.5%) work in hospital inpatient care. Other settings range from 2 to 3 percent including hospital emergency, institutional settings, education/research, long-term care, and health department.

According to the 2008 survey, 14.4 percent of respondents said they planned to retire in the next five years (by 2013) and another 24.8 percent said they planned to retire in the next six to 10 years.

ARNP educational program completions increased by 71.5 percent between 2003 (186 completers) and 2008 (319 completers) as tracked by the Workforce Board on behalf of the state Health Care Personnel Shortage Task Force. Completions per 100,000 population increased by 58.8 percent from 2003 to 2008. There was an increase in male ARNPs: 89 percent of program completers were female in 2008 compared to 93.5 percent in 2003.

Figure 7: ARNP Program Completers by Gender and per 100,000 - 2003-2008



Source: Workforce Training and Education Coordinating Board, *Health Professions Education in Washington Completions 2003-2008*, 2009.

There are three types of programs available: Master's, Doctoral and Post Master's (see below).

Table 3

Type of Program	Number of Program Completions					
	2003	**2004**	**2005**	**2006**	**2007**	**2008**
Master's	176	224	227	254	280	302
Doctoral	10	10	19	14	14	16
Post Master's	0	0	0	2	0	1

Source: Workforce Training and Education Coordinating Board, *Health Professions Education in Washington Completions 2003-2008*, 2009.

Policy Implications: ARNPs

The University of Washington Center for Health Workforce Study brief includes the following policy recommendation:

> "The relatively high percentage of ARNPs who practice independently or in groups with no physicians highlights how important Washington's autonomous practice laws are in expanding access to health care in the state. The state's overall population is growing and will need more health care services in the future. Because of the significant contribution that ARNPs supply to health care (especially primary care), the high likelihood that ARNP workforce shortages will continue into the future, and the finding that more than two-thirds of the state's ARNPs have spent their entire ARNP career in Washington, there is considerable incentive to support and expand the state's ARNP education programs."

Dentists and Dental Hygienists

The University of Washington Center for Health Workforce Studies did a comprehensive analysis of Washington's oral health workforce supported by funding from the Department of Health. The following are some of the major findings and recommendations from that report.

In 2007, of the 5,830 licensed dentists, 81 percent were practicing in Washington. In the same year, of the 4,796 licensed dental hygienists, 79 percent were practicing in Washington.

The vast majority of dentists (74 percent) work in an independent/solo practice, while 15 percent work in a group dental clinic, and the remainder work in education/research (2 percent), government facilities (6 percent), insurance claims/benefits (1 percent) and other (2 percent).[20] For dental hygienists, 96 percent practice in a private clinic or office.

The major workforce findings of the UW Health Workforce Center report:

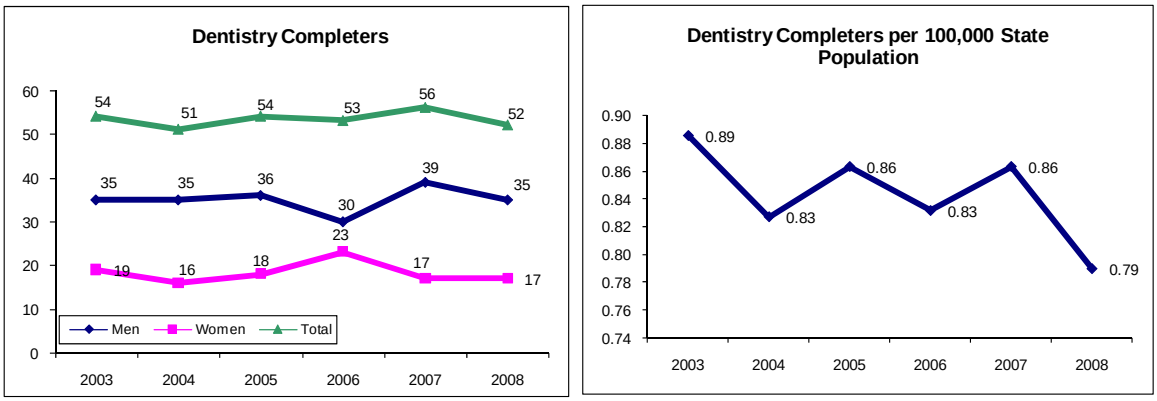
- In 2007, 81 percent of dentists and 79 percent of dental hygienists with Washington licenses were in practice 2007 and their average ages were 49 and 45 years, respectively. Among the practicing dentists, 77 percent were in general practice, 4 percent were in pediatric practice, and less than 2 percent specialized in public health.
- Three-quarters (74 percent) of Washington's dentists were in independent or solo practices.
- Most (96 percent) dental hygienists practicing in Washington were in private dental offices/clinics.
- In 2007, at least 42 percent of the state's dentists and 79 percent of dental hygienists reported they had received their initial professional education in Washington.
- The current workforce of dentists and dental hygienists is not as diverse as the state's population.
- There remains an uneven distribution of dental professionals across the state, with 35 out of 39 counties having all or part of the county designated as a dental Health Professional Shortage Area (HPSA).

Completions from dentistry programs decreased between 2003 and 2008 according to the Workforce Board analysis (see Figure 8). One state university, the University of Washington, offered a Dentistry program in 2008, the same as in 2003. Total annual program completions

[20] Susan M. Skillman, MS, C. Holly A. Andrilla, MS, Joseli A. Alves-Dunkerson, DDS, MPH, MBA, Wendy E. Mouradian, MD, MS, Melissa Comenduley, Jessica Y, Mark P. Doescher, MD, MSPH, Washington State's Oral Health Workforce, UW Center for Health Workforce Studies, April 2009.

decreased by 3.7 percent between 2003 and 2008. In 2008, 32.7 percent of program completers were female compared to 35.2 percent in 2003.

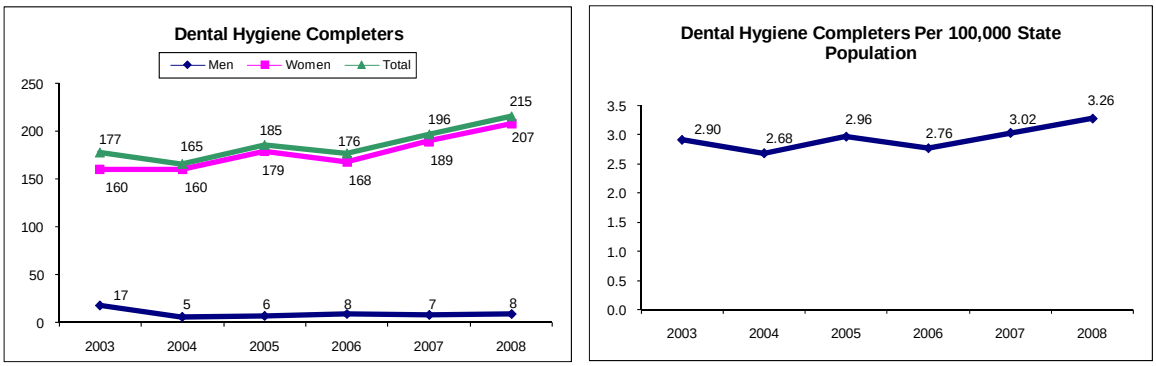
Figure 8. Dentistry Program Completers by Gender and per 100,000 - 2003-2008



Source: Workforce Training and Education Coordinating Board, *Health Professions Education in Washington Completions 2003-2008*, 2009.

Seven community and technical colleges and one university offered Dental Hygiene programs in 2008, the same as in 2003. The number of program completions increased by 21.5 percent between 2003 and 2008. Completions per 100,000 population increased by 12.4 percent from 2003 to 2008. In 2008, 96.3 percent of program completers were female compared to 90.4 percent in 2003.

Figure 9: Dental Hygiene Program Completers by Gender and per 100,000 - 2003-08



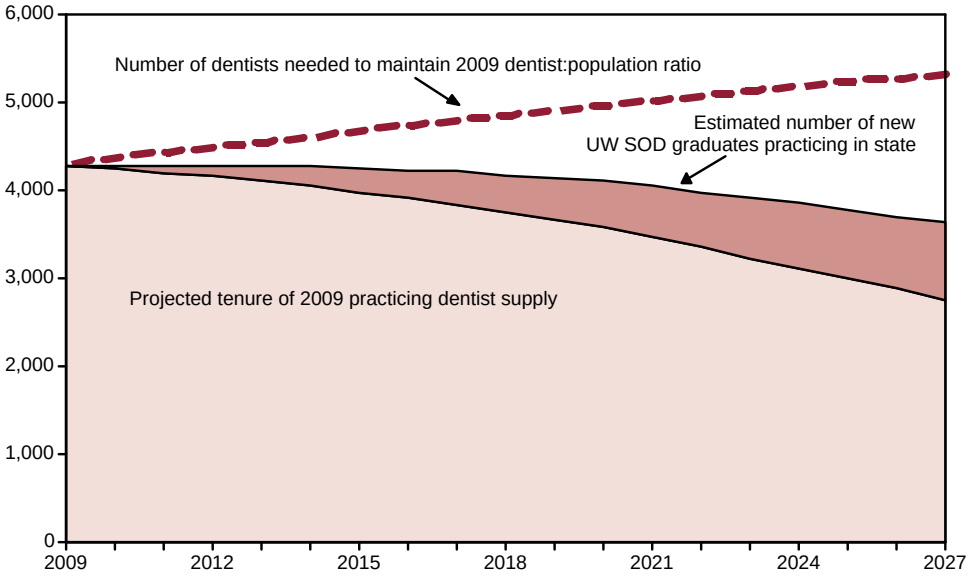
Source: Workforce Training and Education Coordinating Board, *Health Professions Education in Washington Completions 2003-2008*, 2009.

There are two types of Dental Hygiene programs in Washington: Associate and Baccalaureate. Master's and doctoral programs are also available in dental hygiene but not in Washington. For the number of program completions from 2003-2008, see Table 4.

Table 4

Type of Program	Number of Program Completions					
	2003	2004	2005	2006	2007	2008
Associate	141	119	128	126	139	149
Baccalaureate	36	46	57	50	58	66

Figure 10: Projections of Practicing Dentists Required to Maintain Supply Statewide: 2009 to 2027



Source: UW Center for Health Workforce Studies, Washington's Oral Health Workforce, 2009.

Rural and Underserved Areas

Thirty-three of 39 counties have full or partial county *Dental Care HPSA* designation. Ten are based on geography while 23 are passed on population. Numbers served by 100,000 population by county can be found in Figures 11 and 12.

Figure 11: Licensed Dentists per 100,000 Population and Number of Dentists per County in 2009

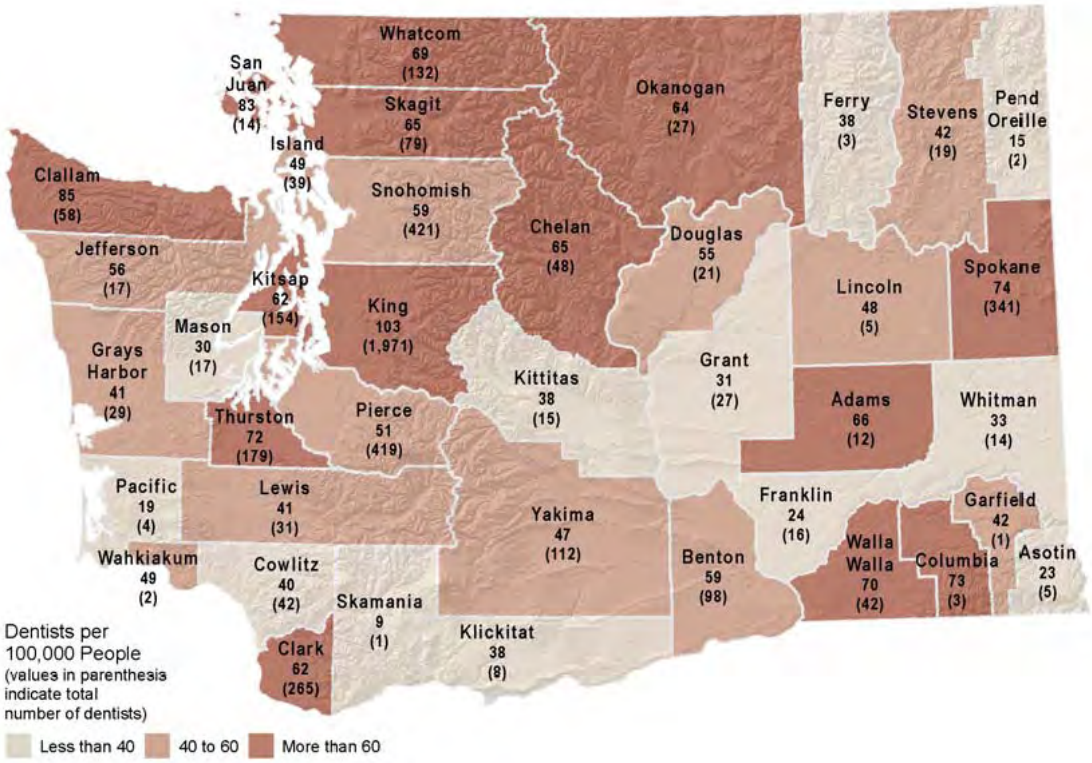
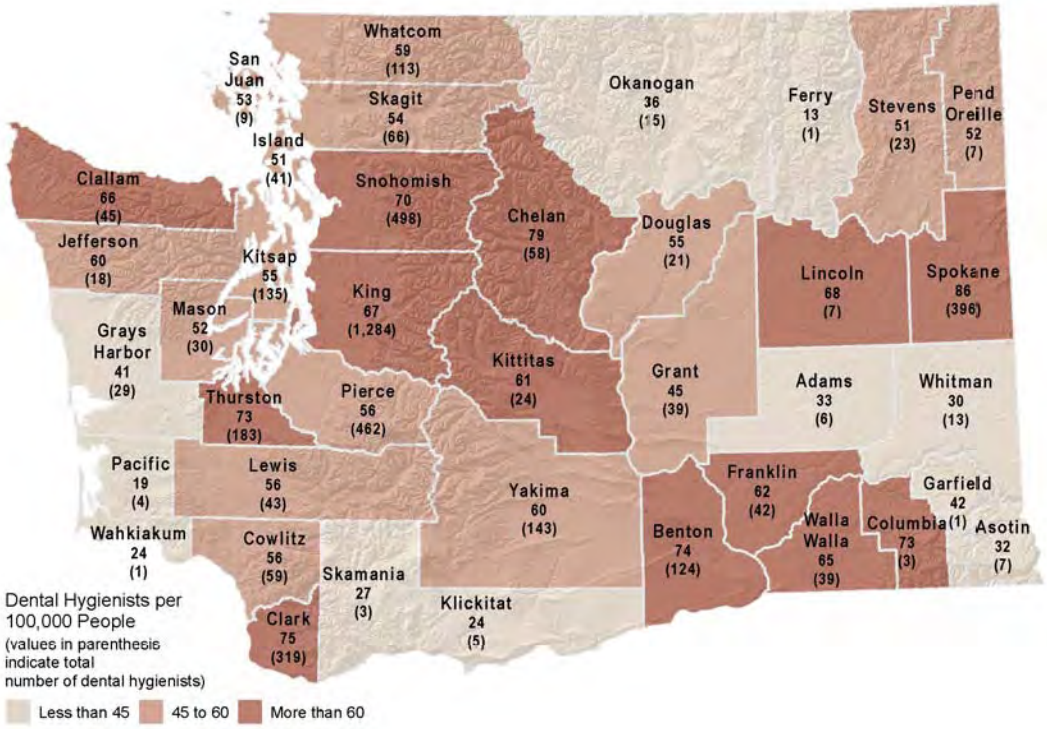


Figure 12: Licensed Dental Hygienists per 100,000 Population and Number of Dental Hygienists per Washington County in 2009



Policy Implications: Dentists and Dental Hygienists

The University of Washington Center for Health Workforce Studies outlined the following recommendations that relate to the adequacy of Washington's oral health workforce:

- *Promote interest in oral health professions* among young people, especially those from underrepresented populations.
- Support education programs that *improve the capacity of the workforce to care for underserved and special populations* through training of more professionals in general dentistry, pediatric dentistry, and in dental public health. In addition, support educational programs with service learning and clinical rotations in rural and underserved populations that can improve the capacity of the workforce to care for these populations.
- Continue and expand programs that *promote practice in primary care shortage areas*, such as loan repayment, scholarships, and programs that reduce barriers for volunteer and retired providers to donate services.
- *Support collaborative and inter-professional medical and oral health education and practice* in order to improve the effectiveness and efficiency of care through greater communication and coordination among providers.

- *Explore new ways to use allied health dental providers and alternative dental providers* to increase dental workforce capacity and efficiency.
- *Monitor trends* in the state's oral health workforce through commitment of resources for ongoing data collection and analysis.

4. Labor Market Analysis

On behalf of the state Health Care Personnel Shortage Task Force, researchers at the Workforce Board conduct an analysis of the gap between supply and demand for selected health care occupations. The analysis compares the projected job openings to supply from new entrants completing health care education programs and estimates a gap over time. The gap appears in the third column providing the number of additional trained people needed per year above current supply.

Table 5: Gap Between Supply & Demand Continued to Widen

Health Occupation (19 select occupations)	Supply Entrants* 2008	Annual Openings 2012-2017	Gap Per Year** 2012-2017
Registered Nurses	3,092	4,150	1,060
Physicians (including all specialties)	169	510	340
Physical Therapists	94	370	275
Mental Health Counselors	33	200	170
Occupational Therapists	76	200	125
Speech-Language Pathologists	84	200	120
Pharmacists	208	320	110
Medical & Clinical Lab Technicians	35	150	115
Medical & Clinical Lab Technologists	35	140	105
Dentists	78	130	60
Dieticians and Nutritionists	27	60	30
Diagnostic Medical Sonographers	59	80	20
Dental Hygienists	212	230	20
Occupational Therapist Assistants plus Aids	17	30	15
Surgical Technologists	98	110	10
Dietetic Technicians	7	20	10
Nuclear Medicine Technologists	6	20	10
Chiropractors	11	20	10
Total	4,360	6,993	2,630

Source: Workforce Board Gap Analysis November, 2009. This analysis is conducted every two years.

* Supply = Those completing educational programs in 2008.

In Table 5, the "Gap Per Year" column shows the average number of additional prepared individuals needed per year for each occupation, and rounded to the nearest five. Over this five year period, the total gap for each number in this column should be multiplied over those five years to determine the total gap, assuming no change in graduate production. For example, 5,300 additional trained nurses are projected to be needed through 2017, over and above the 3,092 prepared annually.

According to this analysis Washington is critically under producing in several of the primary care occupations: physicians and dentists. Further workforce data is needed to analyze other professions as labor market data collection and occupation definitions are not specific enough for the purposes of certain types of health workforce planning.

5. Health Workforce Survey Development in Washington

In 2006, the passage of House Bill 6193 requested the Department of Health, in consultation with the Workforce Board, to conduct a survey of all licensed health care professionals on a regular basis to collect pertinent data for the purposes of meeting our health workforce needs. The major data elements outlined were:

- Specialty
- Birth date and gender
- Race and ethnicity
- Hours in practice per week
- Practice statistics, including hours spent in direct patient care
- Zip codes of the practice location
- Education and training background, including location of education and type of training received

Occupations that were surveyed include:

- Registered Nurses
- ARNPs
- Licensed Practical Nurse
- Physicians
- Physician Assistants
- Naturopathic Physicians
- Dentists
- Dental hygienists
- Chiropractors
- Pharmacists

- Physical Therapists
- Physical Therapy Assistants
- Occupational Therapists
- Occupational Therapy Assistants
- Respiratory Care
- Orthotist/Prosthetist
- Mental Health Counselors
- Podiatrists
- Psychologists
- Social Workers
- Massage Therapists

Current Status of the Survey

In 2008, due to budget reductions, the Department of Health discontinued this survey. In 2010, supplemental budget funding directed the Department of Health to review the collection of health workforce information.

Ideas for Improving a Possible Future Survey

The Department of Health held a stakeholder meeting on July 24. The Department received feedback in these areas:

1. The state does not need to concentrate on what to collect but rather how to collect it. Work has already been done on what to collect and the main elements are outlined in the bill that passed in 2006 (SB 6193). In addition, the federal government agency, HRSA, is working on a minimum dataset this year, which the state can use as guidance.
2. The survey should be linked to licensing and licensing renewals to improve the response rate and therefore the validity of the data, particularly in smaller geographic areas, and for professions where there are smaller numbers.
3. To reduce the mailing costs that can be one of the major expenses in conducting surveys, the Department of Health should develop the online licensing renewal system with the workforce survey in mind.
4. The survey could be mandatory as other states have required, but should not allow for individuals to be identified.
5. The survey development should include a third-party analysis component to ensure the best analysis methods are applied. The variety of organizations that might wish to use the information do not all have the ability and skills to analyze and interpret raw data correctly.

Conclusions

Washington has shortages among primary care providers and these shortages are exacerbated in rural and underserved areas. With the passage of health care reform and expanded health care access, even greater pressure will be placed on the state's primary care workforce.

The state needs to continue to expand educational program enrollment and residencies. Policymakers could develop policies and add obligations to financial aid supports to encourage new entrants to work in primary care. In addition to education and training delivery expansion, and primary care residency expansion, policymakers should create incentives for the forming of teams of primary care providers (physician with PA and ARNP, dentists with hygienists and other dental support) as this enables service to a larger group of patients.

Policymakers should pursue options for online workforce data collection with licensing renewals. This additional data could identify the greatest areas of need and allocate resources correspondingly.

MDs + DOs per 10,000 Population in Washington, by County, 2005

County	Population	Family Medicine	Internal Medicine	General Surgery	OB-GYN	Pediatrics	Other Specialties	OVERALL
Adams	16622	4.81	.60	.60	.60	.60	.00	7.22
Asotin	20561	3.40	.49	.00	.97	.00	4.86	9.73
Benton	155644	3.02	1.73	.58	1.61	1.09	9.25	17.28
Chelan	67942	6.03	3.53	.74	1.62	1.03	16.93	29.88
Clallam	66960	6.72	1.94	.90	.60	1.34	7.02	18.52
Clark	384164	2.97	2.16	.34	1.20	1.17	6.33	14.16
Columbia	4135	4.84	.00	.00	.00	.00	.00	4.84
Cowlitz	95725	3.55	1.98	.84	.94	1.78	9.09	18.18
Douglas	34019	2.35	.59	.00	.00	.00	.29	3.23
Ferry	7296	2.74	.00	.00	.00	.00	2.74	5.48
Franklin	55200	2.90	1.45	.18	1.09	1.27	4.17	11.05
Garfield	2348	.00	.00	.00	.00	.00	4.26	4.26
Grant	79156	3.79	1.26	.51	.63	.63	2.27	9.10
Grays Harbor	69290	2.31	1.73	.72	.43	.72	4.47	10.39
Island	76268	4.33	1.57	.66	.66	1.31	6.16	14.69
Jefferson	26913	5.57	1.86	1.49	.74	1.11	7.43	18.21
King	1784619	4.94	3.87	.81	1.56	1.99	17.56	30.73
Kitsap	239770	4.09	1.63	.54	1.00	1.29	10.30	18.85
Kittitas	35498	5.35	.56	.85	.28	.85	1.97	9.86
Klickitat	19466	6.16	.00	.51	.00	.00	.51	7.19
Lewis	70884	3.95	1.55	.85	.56	.99	4.51	12.41
Lincoln	10074	5.96	.00	.00	.00	.00	.00	5.96
Mason	51394	1.75	.97	.39	.39	.39	2.53	6.42
Okanogan	39367	8.64	.76	.51	.25	.51	3.30	13.97
Pacific	20842	4.80	.00	.48	.00	.00	.48	5.76
Pend Oreille	12042	4.15	.00	.00	.83	.00	.00	4.98
Pierce	749451	3.55	2.13	.73	1.12	1.47	11.07	20.08
San Juan	14983	7.34	.67	.67	.00	.67	5.34	14.68
Skagit	108838	6.71	1.75	.92	.92	1.47	11.12	22.88
Skamania	10051	1.99	.00	.00	.00	.00	1.99	3.98
Snohomish	649856	3.62	1.69	.45	.63	.71	7.16	14.25
Spokane	433726	4.66	2.63	.83	1.11	1.04	13.81	24.07
Stevens	40842	5.63	1.22	.49	.00	.00	2.45	9.79
Thurston	221297	4.93	1.63	.45	1.31	1.22	11.48	21.01
Wahkiakum	3806	5.25	.00	.00	.00	.00	.00	5.25
Walla Walla	56654	5.12	4.59	.71	1.24	2.12	12.53	26.30
Whatcom	178551	4.98	2.07	.73	1.18	1.29	11.54	21.79
Whitman	41021	3.90	1.95	.49	.49	1.22	3.17	11.21
Yakima	227285	4.40	1.85	.57	.75	1.01	7.26	15.84
State Overall	6182560	4.33	2.47	0.66	1.11	1.35	11.29	21.21

Source: Email communication with Mark Doescher, UW Center for Health Workforce Studies, August 2010.

Grants to Expand Washington's Health Care Workforce

U. S. Department of Health and Human Services Grants

Grantee	City	Award
Expansion of Physician Assistant Training Program		
University of Washington	Seattle	$1,980,000
Primary Care Residency Expansion		
Providence St. Peter Hospital	Olympia	$960,000
Group Health Cooperative	Seattle	$960,000
Community Health of Central Washington	Yakima	$1,920,000
	Total:	**$5,820,000**
Health Profession Opportunity Grants to Serve TANF Recipients and Other Low-Income Individuals		
Workforce Development Council of Seattle-King County	Seattle	$2,263,435
Edmonds Community College	Lynnwood	$1,426,985
	Total:	**$3,690,420**

HHS awards $16.8 million to train public health workforce

Grants awarded to 27 Public Health Training Centers

U.S. Department of Health and Human Services Secretary Kathleen Sebelius today announced the award of $16.8 million to support 27 Public Health Training Centers (PHTC) at schools of public health and other public or non-profit institutions across the country. The PHTC Program helps improve the public health system by enhancing skills of the current and future public health workforce. Institutions accredited to provide graduate or specialized training in public health are eligible for funding. Most of the funding – $15.4 million – is made available by the Prevention and Public Health Fund included as part of the Affordable Care Act.

"Today's awards represent a dramatic increase in support for Public Health Training Centers," said Secretary Sebelius. "Investing in prevention and public health is the foundation for improving the health and well-being of all Americans."

Funded organizations (1) plan, develop, operate and evaluate projects that support goals established by the Secretary in preventive medicine, health promotion and disease prevention; or (2) improve access to and quality of health services in medically underserved communities. Other PHTC activities include assessing the learning needs of the public health workforce; providing accessible training; and working with organizations to meet strategic planning, education, and resource needs.

"Whether facing public health emergencies such as natural disasters, or chronic conditions like obesity, a well-trained public health workforce is critical to ensuring the nation's health and welfare," said Mary K. Wakefield, Ph.D., R.N., administrator of HHS' Health Resources and Services Administration (HRSA), which oversees the PHTC program.

Awards are listed below. For more information on HRSA's health professions programs, visit http://bhpr.hrsa.gov/.

UW was awarded $650,000 under this grant.

Washington Health Professional Grants: $3 Million

Grantee	City	Award
Advanced Education Nursing Grants		
University of Washington	Seattle	$370,897
University of Washington	Seattle	$215,493
University of Washington	Seattle	$302,644
University of Washington	Seattle	$214,274
University of Washington	Seattle	$231,697
Advanced Education Nursing Traineeship Grants		
Washington State University	Pullman	$46,642
Seattle University	Seattle	$49,729
University of Washington	Seattle	$131,505
Gonzaga University	Spokane	$62,374
Pacific Lutheran University	Tacoma	$35,105

Washington Health Professional Grants: $3 Million

Grantee	City	Award
Nurse Anesthetist Traineeship Grants		
Gonzaga University	Spokane	$10,226
Nurse Education, Practice, Quality and Retention Grants		
University of Washington	Seattle	$266,919
University of Washington	Seattle	$288,650
Nursing Workforce Diversity Grants		
Washington State University	Pullman	$299,715
Faculty Development: Integrated Technology into Nursing Education and Practice Initiative Grants		
University of Washington	Seattle	$299,635
Geriatric Education Centers Grants		
University of Washington	Seattle	$208,111

Recovery Act Scholarships for Disadvantaged Students, Fiscal Year 2010

Grantee	City	Study Area	Awards
Eastern Washington University	Cheney	Clinical Social Work – Graduate	$39,542
Eastern Washington University	Cheney	Occupational Therapy - Graduate	$9,505
Eastern Washington University	Cheney	Dental Hygiene - Baccalaureate	$3,042
Everett Community College	Everett	Nursing - Associate	$23,791
University Of Washington	Seattle	Allopathic Medicine	$72,998
University Of Washington	Seattle	Dentistry	$60,832
University Of Washington	Seattle	Pharmacy	$54,747
Walla Walla College	College Place	Nursing - Baccalaureate	$4,886
Washington State University	Pullman	Nursing - Graduate	$5,099

Recovery Act Nurse Faculty Loan Program, Fiscal Year 2010

Grantee	City	Award
University Of Washington	Seattle	$195,773
Health Careers Opportunities:		
Yakima Valley Farm Workers Clinic	Toppenish	$976,747

Health Professions Education In Washington: 2003 - 2010 Completion Statistics

December 2011

Table of Contents

Introduction 3
Data Sources 3
Limitations of the Data 4
Substance Abuse/Addiction Counseling Program Completers (CIP 51.1501) 5
Dental Laboratory Technology/Technician Program Completers (CIP 51.0603) 6
Emergency Medical Technology/Technician Program Completers (CIP 51.0904) 7
Health Unit Coordinator/Ward Clerk Program Completers (CIP 51.0703) 8
Medical/Clinical Assistant (CIP 51.0801) 9
Clinical Laboratory Science/Medical Technology/Technologist (CIP 51.1005) 10
Medical Imaging (Radiology) (CIPs 51.0905, 0907, 0910 and 0911) 11
Medical/Clinical Laboratory Assistant (CIP 51.0802 12
Medical Office Management Administration (CIP 51.0705) 13
Medical Records Technology/Technician CIP 51.0707 14
Medical Transcription (CIP 51.0708) 15
Occupational Therapy (CIP 51.2306) 16
Occupational Therapy Assistant (CIP 51.0803) 17
Optometric Technician Assistant (CIP 51.1802) 18
Orthotist/Prosthetist (CIP 51.2307) 19
Physical Therapy (CIP 51.2308) 20
Physical Therapy Assistant (CIP 51.0806) 21
Psychiatric/Mental Health Services Technician (CIP 51.1502) 22
Respiratory Care Therapy (CIP 51.0908) 23
Surgical Technology Program (CIP 51.0909) 24
Vocational Rehabilitation Counseling (CIP 51.2310) 25
Nursing Assistant/Aide (CIP 51.1614) (51.3902) 26
Dentistry (CIP 51.0401) 27
Dental Hygiene (CIP51.0602) 28
Dental Assistant (CIP 51.0601) 29
Advanced Registered Nurse Practitioner (CIP 51.1605 and 1601),(51.3805 and 3801) 30
Baccalaureate Registered Nurse (CIP 51.1601),(51.3801) 31
Associate Registered Nurse (CIP 51.1601),(51.3801) 32
Licensed Practical Nurse (CIP 51.1613),(51.3901) 33
Medicine (CIP 51.1201) 34
Naturopathic Medicine (CIP 51.3303) 35
Opticianry/Ophthalmic Dispensing Optician (CIP 51.1801) 36
Physician Assistant (CIP 51.0912) 37
Pharmacy (CIP 51.2001) 38
Pharmacy Technician/Assistant (CIP 51.0805) 39
Veterinary Medicine (CIP 51.2401) 40

INTRODUCTION

This report documents completions of postsecondary health career educational programs throughout Washington. Each page summarizes program completions for one of 35 selected health education programs. The term "completion" as used in this report encompasses graduation from degree programs as well as completion of a course of study leading to a non-degreed credential. This report covers the periods from 2002-03 through 2009-10. Trend data include absolute numbers of program completions by gender, population-adjusted completion rates, and completions by race/ethnicity. Throughout the report, each academic year, beginning in July and ending in June, is referred to by the calendar year in which the academic year ended.

DATA SOURCES

Data for this report come from the Integrated Postsecondary Education Data system (IPEDS) of the National Center for Education Statistics for 2003 through 2010. IPEDS is a systematic survey of educational organizations whose primary purpose is to provide postsecondary education. IPEDS does not collect data from organizations that are not primarily educational in nature, for example, hospitals that offer nursing diploma programs. For this reason, the numbers of health career program completers may be underestimated for some professions, such as nurse aides. More information about IPEDS can be found at http://nces.ed.gov/ipeds/.

Some educational organizations did not report or under-reported data to IPEDS in prior years. In instances where this was known, data was obtained from the Washington State Board for Community and Technical Colleges (SBCTC) to supplement completions in the affected programs.

State population data are from the Washington State Office of Financial Management Population Estimates for 2008 and the US Census Bureau for 2009 and 2010.

Gender: IPEDS provides complete counts by gender, imputing for missing data.

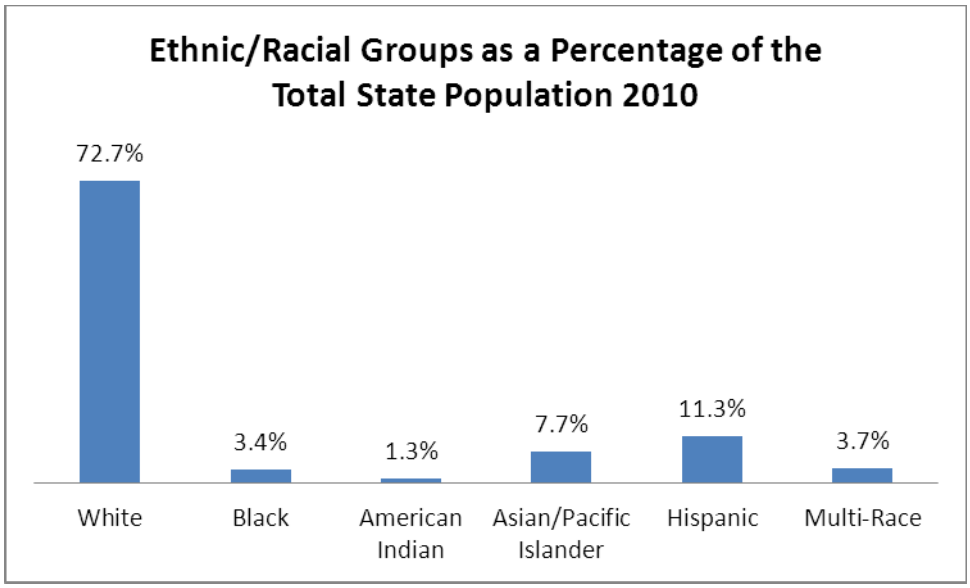
Race and Ethnicity: Completions reported by IPEDS categorize completers into one of the following racial/ethnic designations:

- White, non-Hispanic.
- Hispanic or Latino
- Black, non-Hispanic
- Asian or Pacific Islander.
- American Indian or Alaskan Native.
- Nonresident alien
- Unknown.

For the purpose of charting data the ethnic groups are designate as White, Black, Hispanic, Asian and American Indian. Some racial/ethnic data were missing from the data sets. Completions in this report by race and ethnicity are based on percentages for those completers in which race and ethnicity were known (excluding from the denominator those completers whose racial/ethnic data were missing or non-resident aliens).

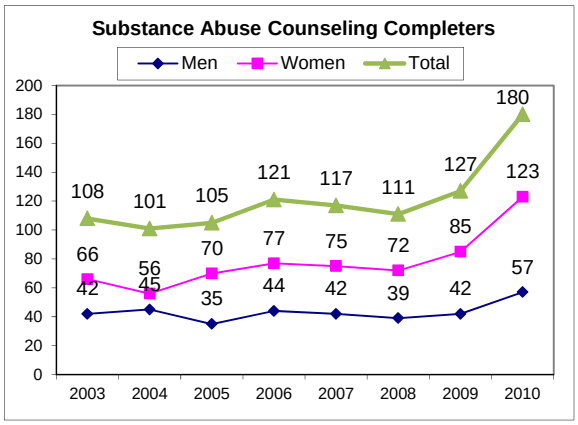
Limitations of the Data

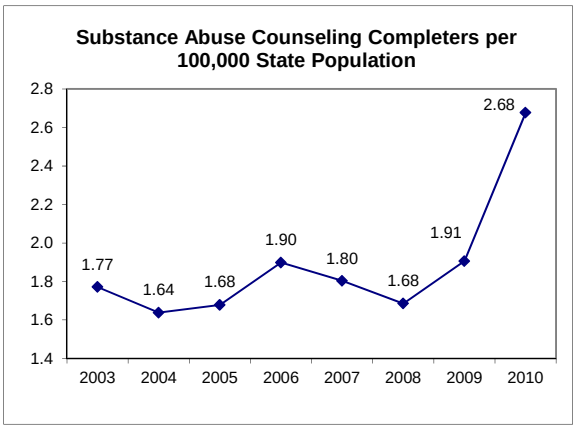
The data in this report are subject to the following conditions. IPEDS attempts to conduct a complete census of all postsecondary educational organizations. Coverage is thought to be high, with response rates above 90 percent. Yearly verification is performed using accreditation lists, but it is not known how many institutions are missing. Although IPEDS imputes for non-responses, the extent of the undercount for missing institutions, non-responses, and specific health occupations where training is available outside of education institutions is unknown.



US Census Bureau

Substance Abuse/Addiction Counseling Program Completers (CIP 51.1501)

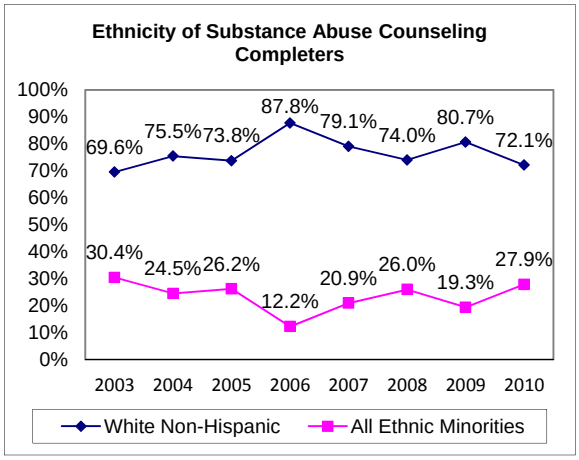


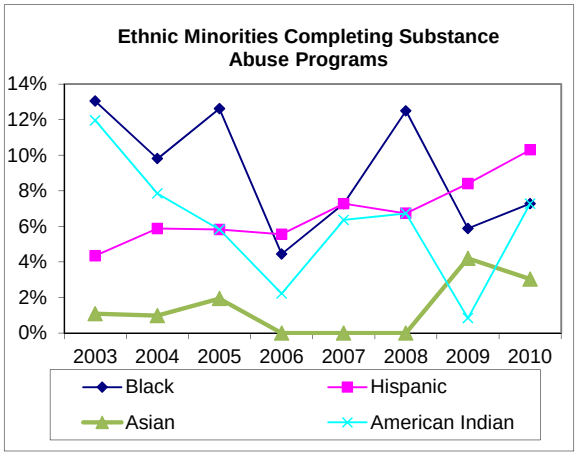


- Sixteen community and state colleges offered substance abuse/addiction counseling programs in 2010.
- There are two types of credentials for substance abuse/addiction counseling from programs in Washington. The number of program completions from 2003-2010 by type are as follows:

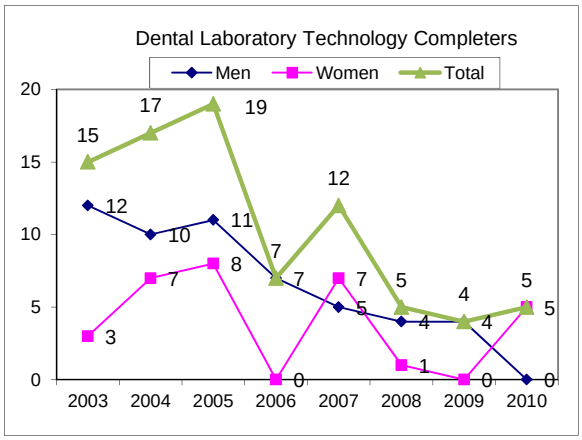
Type of Program	Number of Program Completions							
	2003	2004	2005	2006	2007	2008	2009	2010
Less than two years	55	50	50	63	68	54	68	92
Associate	51	51	55	58	49	57	59	88

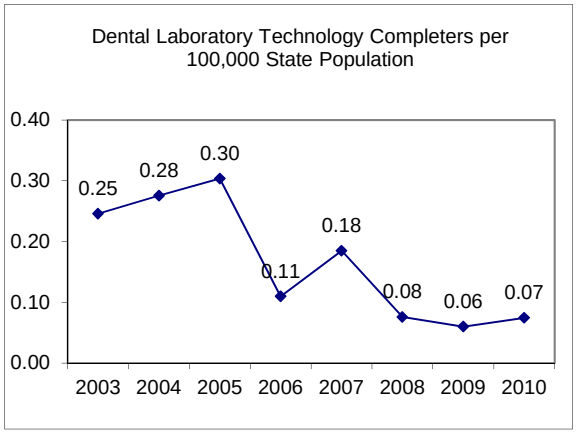
- Total annual program completions increased by 67% from 2003 to 2010.
- Completions per 100,000 population increased by 51% over the same time period.
- Sixty-eight percent of program completers were female in 2010 compared to 61% in 2003.





Dental Laboratory Technology/Technician Program Completers (CIP 51.0603)

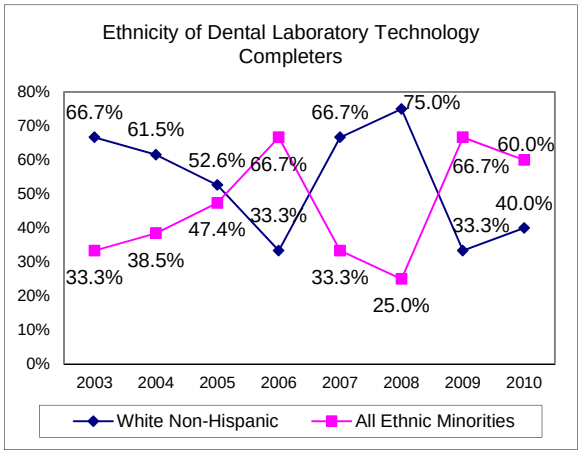


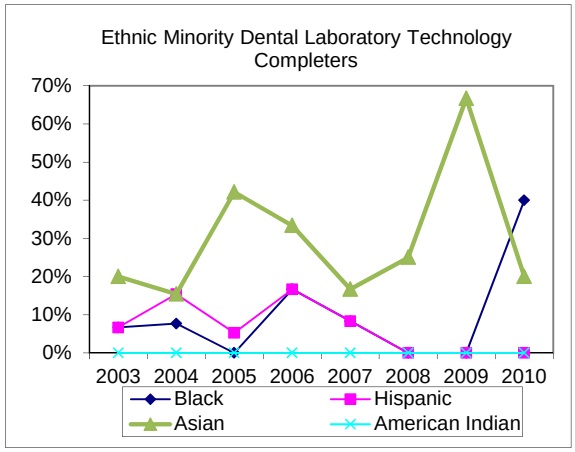


- One technical college offered a Dental Laboratory Technology/Technician program in 2010.
- The number of program completion credentials from 2003-2010 are as follows:

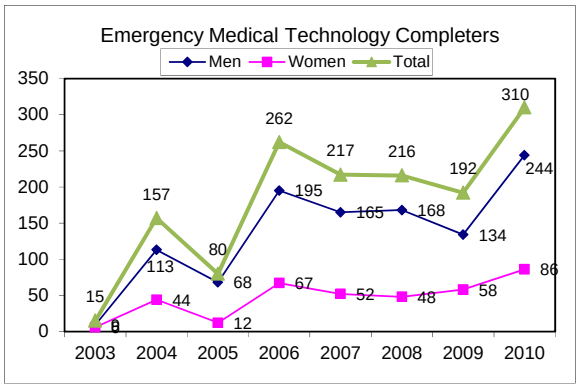
Type of Program	Number of Program Completions							
	2003	2004	2005	2006	2007	2008	2009	2010
Less than two years	2	5	4	1	3	1	1	2
Associate	3	2	6	3	3	3	3	3
2 to 4 years	10	10	9	3	6	1	0	0

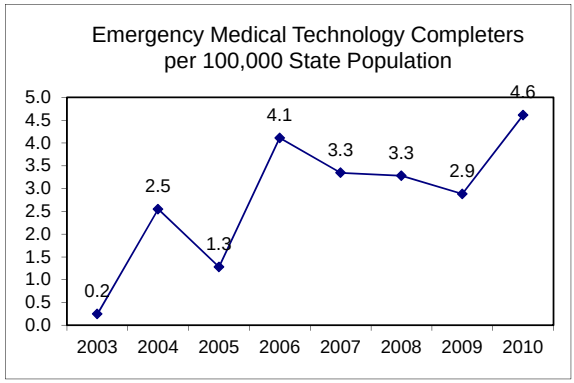
- Total annual program completions decreased by 67% from 2003 to 2010, however with the number of completions per year being low, a small variance in any one year can give a false impression of the significance of the percent of change.
- Completions per 100,000 population decreased by 70% from 2003 to 2010.
- 100% of program completers were female in 2010 compared to 20 % in 2003.





Emergency Medical Technology/Technician Program Completers (CIP51.0904)

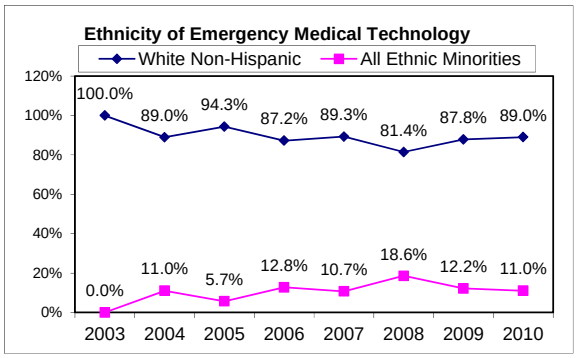


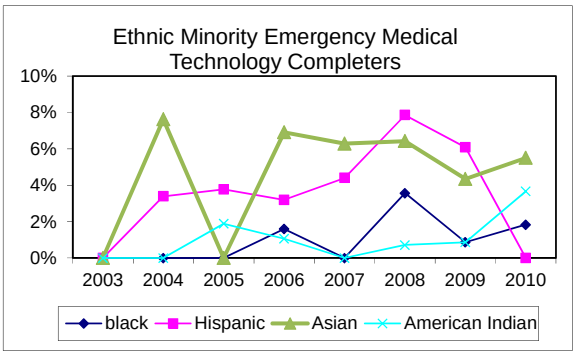


- Six community state and technical colleges offered Emergency Medical Technology programs in 2010 down from eight in 2008.
- There are several types of Emergency Medical Technology/Technician Program credentials in Washington. The number of program completions from 2003-2010 by type are as follows:

Type of Program	Number of Program Completions							
	2003*	2004	2005	2006	2007	2008	2009	2010**
Less than two years	0	140	63	246	194	197	172	123
Associate	8	7	9	10	9	8	7	6
Baccalaureate	7	10	8	6	14	11	13	10
Certificate of completion								171

- Total annual program completions increased by 97.5% from 2004 to 2010 and 159.3 % from 2008.
- Completions per 100,000 population increased by 40.6% from 2008.
- 27.7% of program completers were female in 2010 compared to 22.2% in 2008.

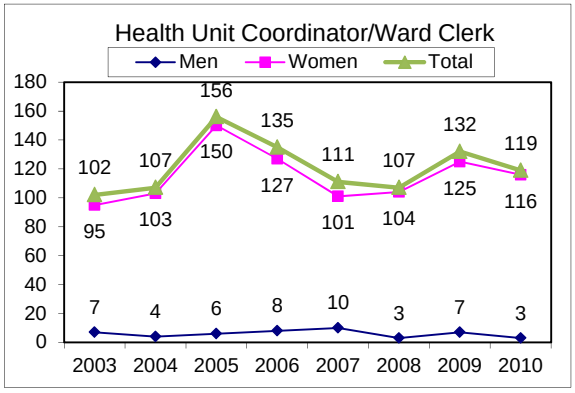


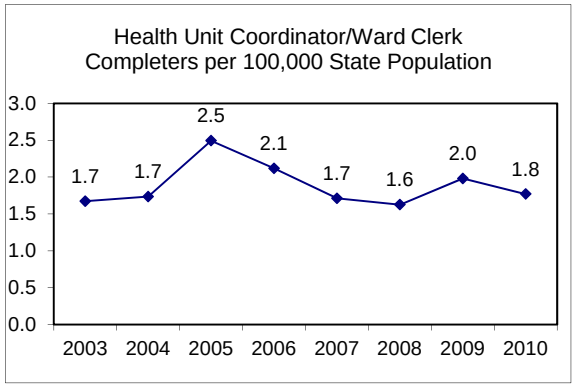


* 2003, 2004 and 2010, IPEDS completion data was supplemented with data from the State Board of Community and Technical Colleges (SBCTC).

**In 2010 SBCTC added a Certificate of Completion credential.

Health Unit Coordinator/Ward Clerk Program Completers (CIP 51.0703)

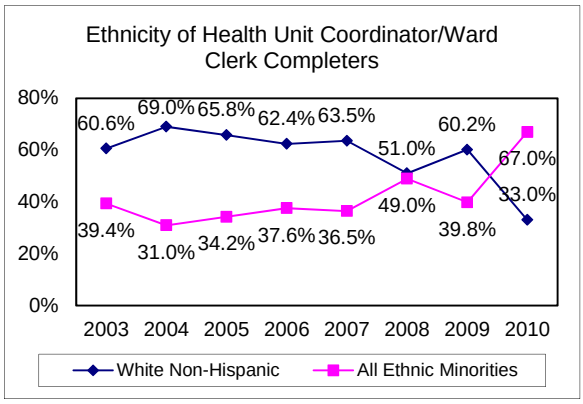


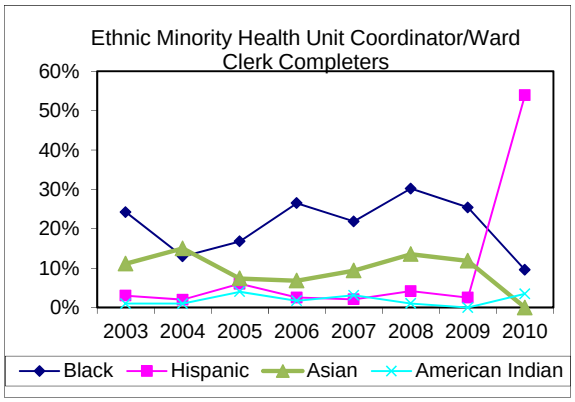


- Six community, state and technical colleges offered Health Unit Coordinator/Ward Clerk programs in 2010, up by one in 2008
- There are two types of Health Unit Coordinator/Ward Clerk Program credentials in Washington. The number of program completions from 2003-2010 by type are as follows:

Type of Program	Number of Program Completions							
	2003*	2004	2005	2006	2007	2008	2009	2010
Less than two years	101	101	148	135	110	106	129	114
Associate	1	6	8	0	1	1	3	5

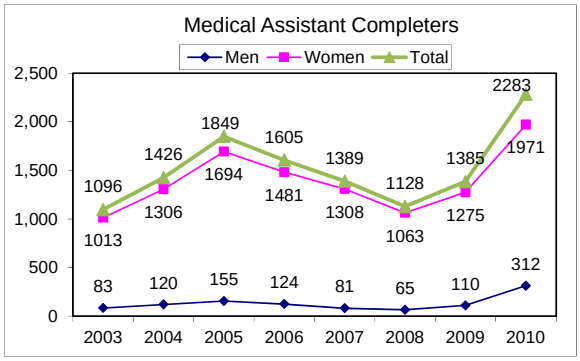
- Total annual program completions increased by 16.7% from 2003 to 2010 which is up from 4.9% between 2003 and 2008.
- Completions per 100,000 population increase by 5.8% over the same time period and increased by 9% from 2008.
- 97.5% of program completers were female in 2010 compared to 93.1% in 2003 and 97.2% in 2008.

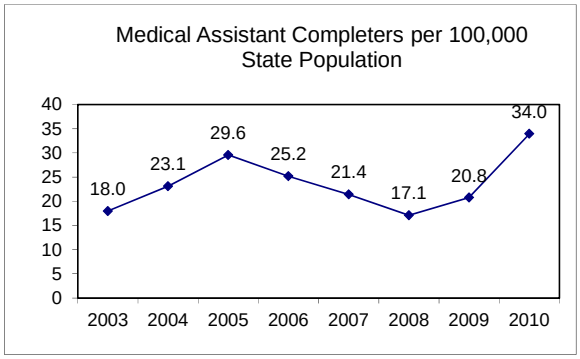




** 2003, IPEDS completion data was supplemented with data from the SBCTC.*

Medical/Clinical Assistant (CIP 51.0801)

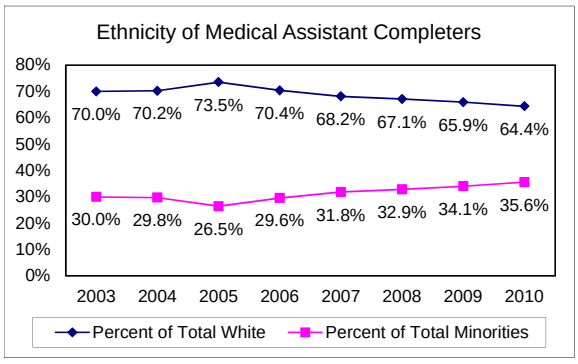


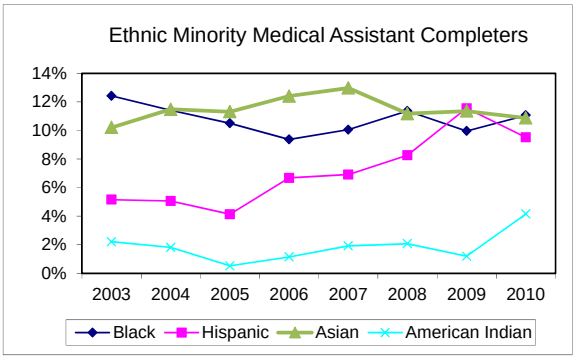


- Twenty-nine community, state and technical colleges and college offered Medical/Clinical Assistant programs in 2010 up from 27 in 2008.
- There have been three types of Medical/Clinical Assistant Program credentials in Washington but only two as of 2009. The number of program completions from 2003-2010 by type are as follows:

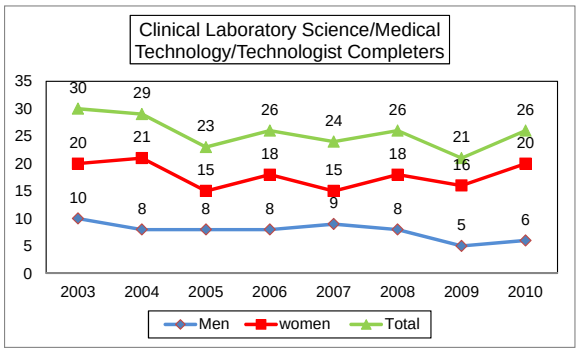
Type of Program	Number of Program Completions							
	2003	2004	2005	2006	2007	2008	2009	2010
Less than two years	984	1261	1690	1422	1228	968	1244	2076
Associate	95	164	155	174	149	157	141	207
2 to 4 years	17	1	4	9	12	3	0	0

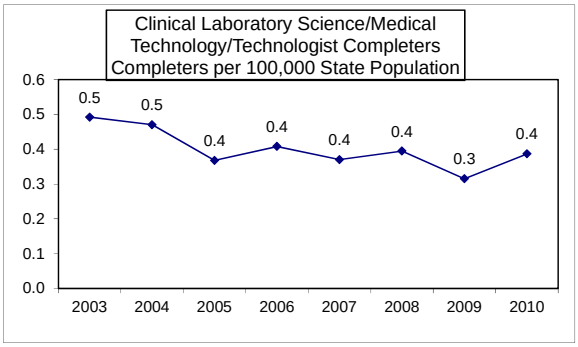
- Total annual program completions increased by 108.3% between 2003 and 2010, and by 102.4% from 2008.
- Completions per 100,000 population increased by 88.9% from 2003 and 2010.
- 86.3% of program completers were female in 2010 compared to 92.4% in 2003 and 94.2% in 2008.





Clinical Laboratory Science/Medical Technology/Technologist (CIP 51.1005)

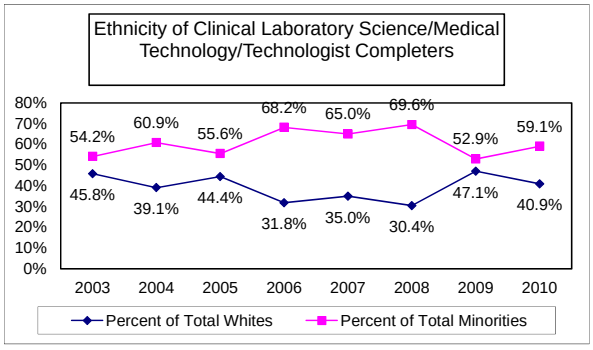


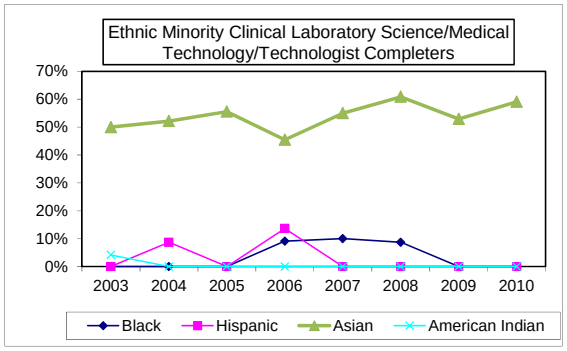


- Two state and private universities offered Clinical Laboratory Science/Medical Technology/Technologist programs in 2010 the same as in 2008
- There is one type of Clinical Laboratory Science/Medical Technology/Technologist program offered in Washington. The number of program completions from 2003-2010 are as follows:

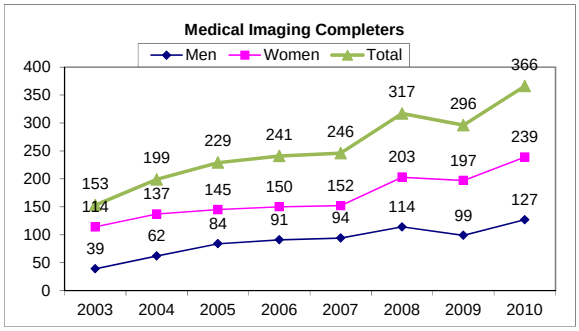
Type of Program	Number of Program Completions							
	2003	2004	2005	2006	2007	2008	2009	2010
Baccalaureate	30	29	23	26	24	26	21	26

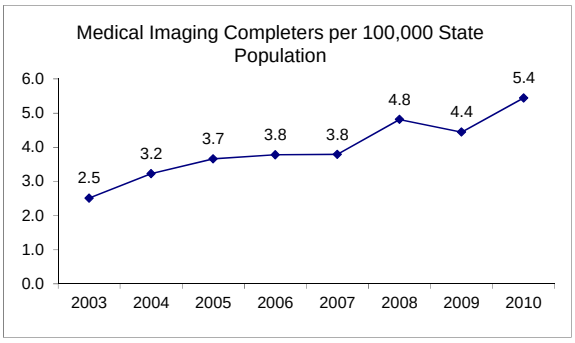
- Two state and private universities offered Clinical Laboratory Science/Medical Technology/Technologist programs in 2010 the same as in 2008.
- Total annual program completions decreased by 13 percent between 2003 and 2010 the same as in 2008. With the number of completions per year being low, a small variance in any one year can give a false impression of the significance of the percent of change.
- Completions per 100,000 population decreased by 21.4% from 2003 to 2010.
- 77 percent of program completers were female in 2010 compared to 67% in 2003.





Medical Imaging (Radiology) (CIPs 51.0905, 0907, 0910 and 0911)

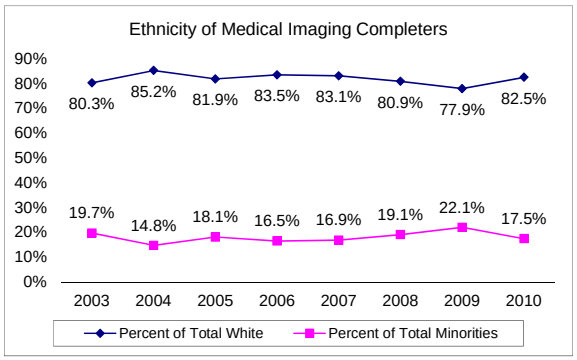


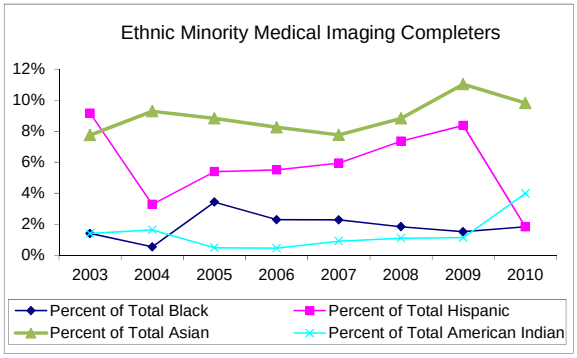


- Twelve community, state and technical colleges offered Medical Imaging (Radiology) programs in 2010, up from 11 in 2008. The programs include: Nuclear Medical Technology/Technologist; Medical Radiologic Technology/Science - Radiation Therapist; Diagnostic Medical Sonography/Sonographer & Ultrasound Technician; and Radiologic Technology/Science - Radiographer.
- The number of program completion credentials from 2003-2010 by type are as follows:

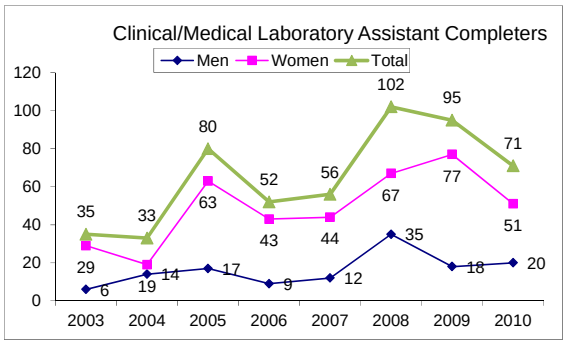
Type of Program	Number of Program Completions							
	2003	2004	2005	2006	2007	2008	2009	2010
Less than two years	10	13	8	14	13	12	11	45
Associate	123	167	206	209	207	285	265	305
Baccalaureate	20	19	15	18	23	20	20	16

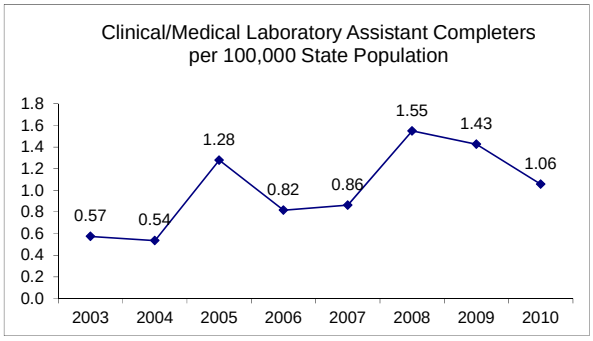
- Total annual program completions increased by 139.2% between 2003 and 2010, up from 107.2% in 2008.
- Completions per 100,000 population increased by 116.9 % over the same time period.
- 65.3% of program completers were female in 2010 compared to 74.5% in 2003.





Medical/Clinical Laboratory Assistant (CIP 51.0802)

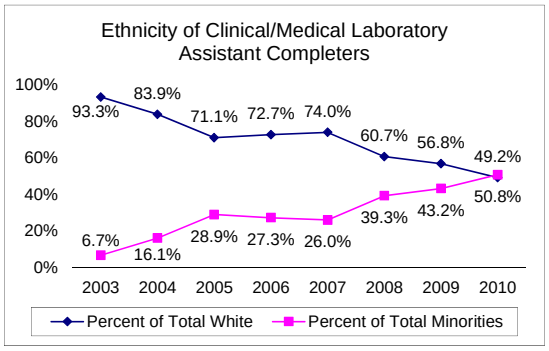


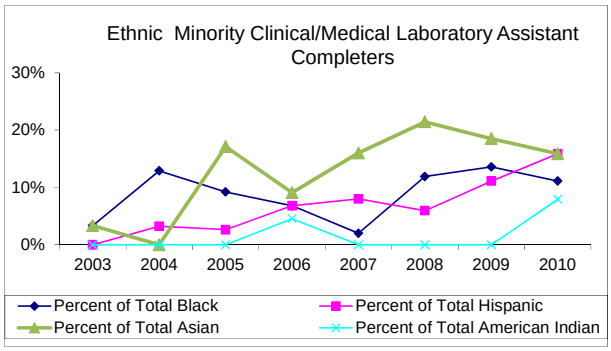


- Five community, state and technical colleges offered Clinical/Medical Laboratory assistant programs in 2010 down from 8 in 2008.
- There are two types of Medical/Clinical Laboratory Assistant Program credentials in Washington. The number of program completions from 2003-2010 by type are as follows:

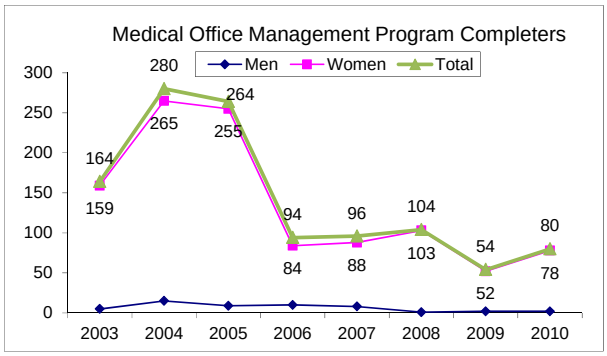
Type of Program	Number of Program Completions							
	2003	2004	2005	2006	2007	2008	2009	2010
Less than two years	11	3	37	16	17	50	56	39
Associate	0	0	24	30	43	36	39	32

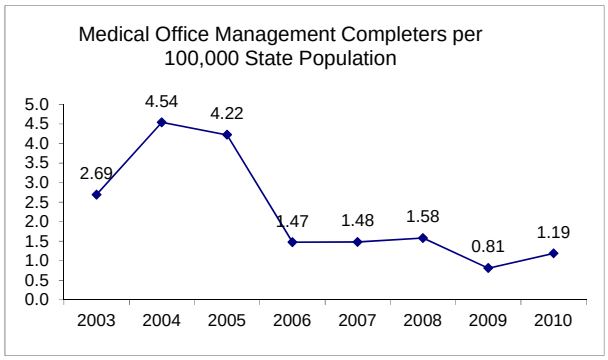
- Total annual program completions increased by 102.9% between 2003 and 2010 but decreased by 30.4% from 2008.
- Completions per 100,000 population increased by 84% over the same time period.
- 71.8% of program completers were female in 2010 compared to 45.3% in 2003.





Medical Office Management Administration (CIP 51.0705)

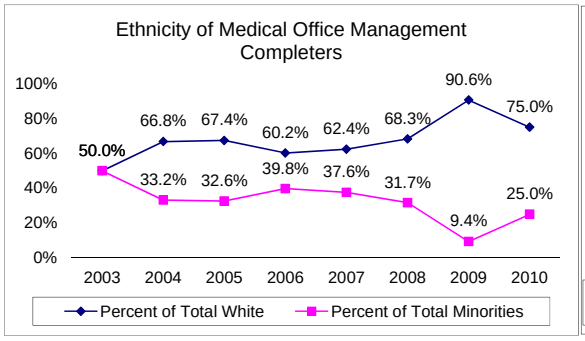


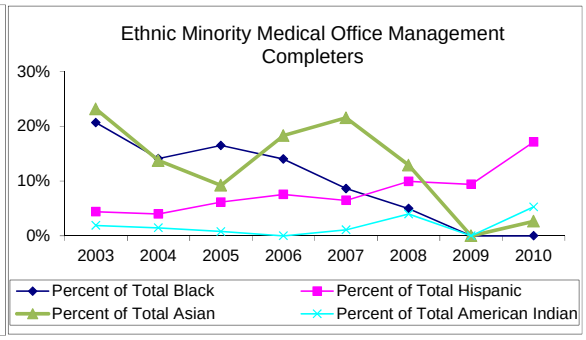


- Four community, state and technical colleges in offered Medical/Clinical Assistant programs in 2010, down from five in 2008.
- There are two types of Medical Office Management Administration Program credentials in Washington. The number of program completions from 2003-2010 by type are as follows:

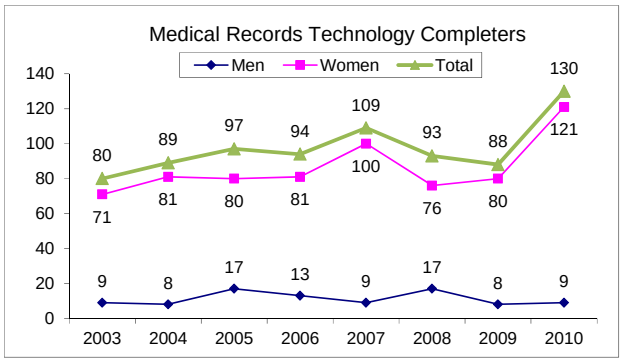
Type of Program	Number of Program Completions							
	2003	2004	2005	2006	2007	2008	2009	2010
Less than two years	161	276	259	93	95	98	52	71
Associate	3	4	5	1	1	6	2	9

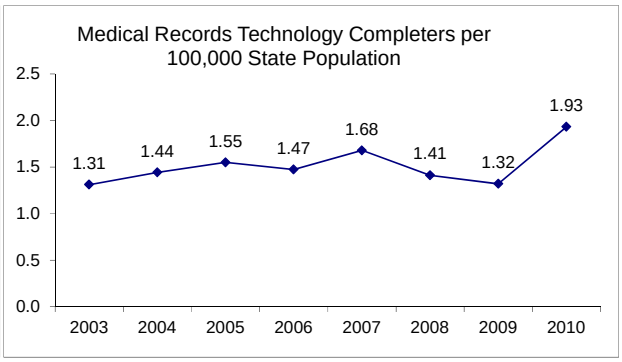
- Total annual program completions decreased by 35.4% between 2003 and 2010.
- Completions per 100,000 population decreased by 55.8% from 2003 to 2010.
- 97.5% of program completers were female in 2010 about the same as in 2003.





Medical Records Technology/Technician (CIP 51.0707)

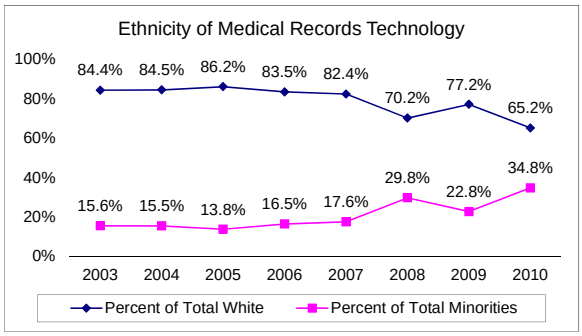


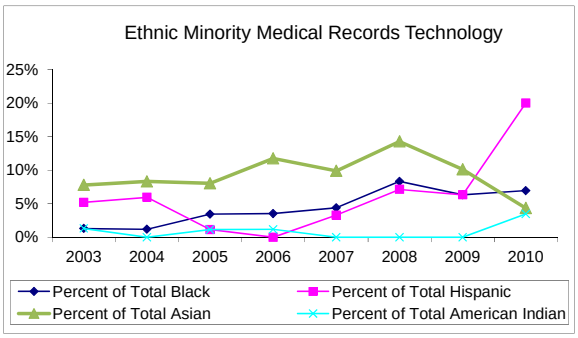


- Eleven community, state and technical colleges offered Medical Records Technology/Technician programs in 2010, one more than in 2008.
- There are two types of Medical Records Technology/Technician Program credentials in Washington. The number of program completions from 2003-2010 by type are as follows:

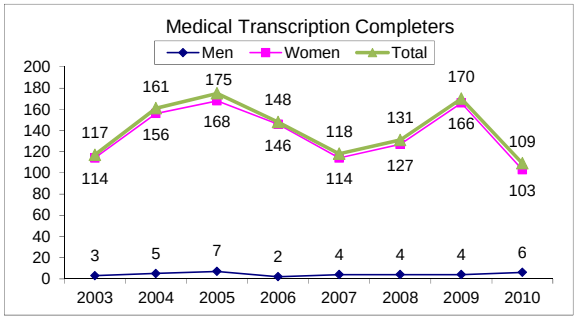
Type of Program	Number of Program Completions							
	2003	2004	2005	2006	2007	2008	2009	2010
Less than two years	48	37	44	47	55	40	47	81
Associate	32	52	53	47	54	53	41	49

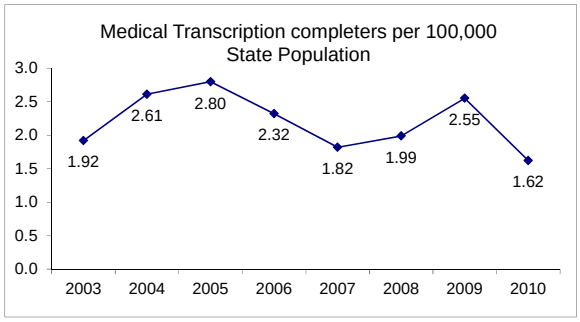
- Total annual program completions increased by 62.5% between 2003 and 2010.
- Completions per 100,000 population increased by 47.4% over the same time period.
- 93.1% of program completers were female in 2010 compared to 88.8% in 2003.





Medical Transcription (CIP 51.0708)

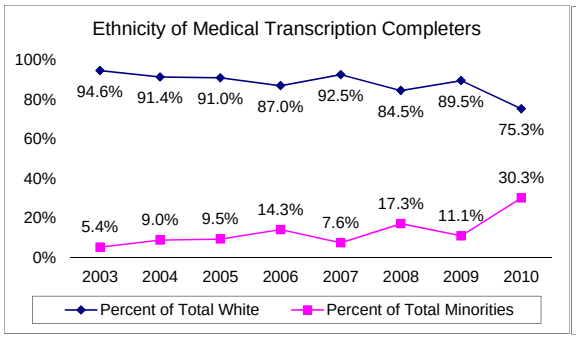


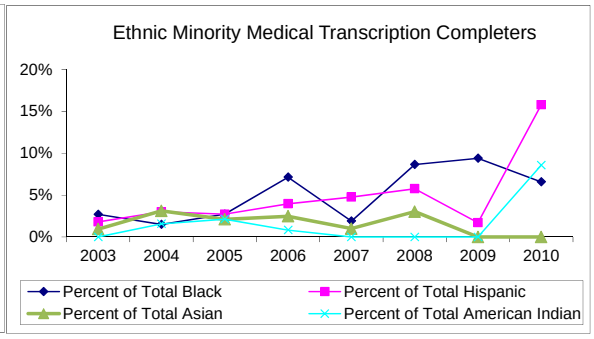


- Thirteen community, state and technical colleges offered Medical Transcription programs in 2010.
- There is one type* of Medical Transcription Program credential in Washington. The number of program completions from 2003-2010 are as follows:

	Number of Program Completions							
Type of Program	2003	2004	2005	2006	2007	2008	2009	2010
Less than two years	116	161	174	148	118	129	170	109

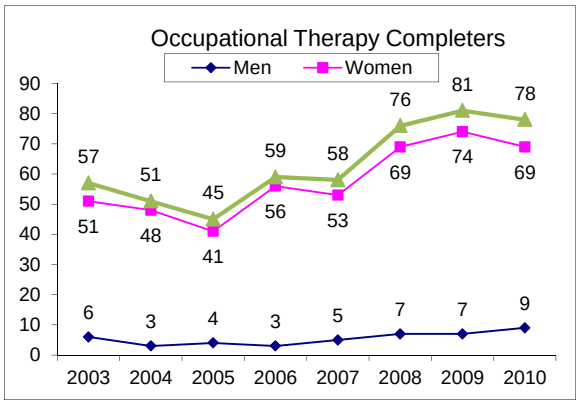
- Total annual program completions decreased by 6.8% between 2003 and 2010, and decreased by 16.8% from 2008.
- Completions per 100,000 population decreased by 15.5% from 2003, and by 18.5 percent in 2008.
- 94.5% of program completers were female in 2010 compared to 97.4% in 2003.

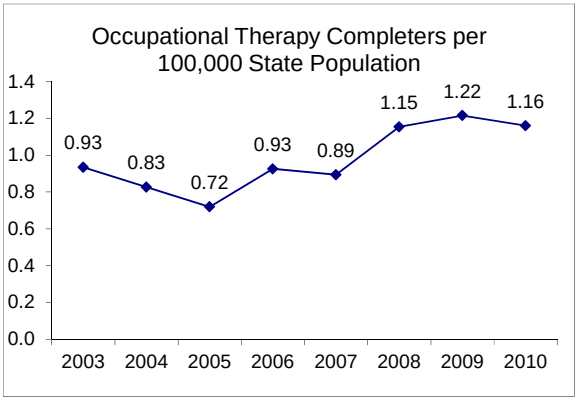




** SBCTC records indicate there were an additional 34 students who left the program in 2010 with 45 or more credits but no certificate or credential.*

Occupational Therapy (CIP 51.2306)

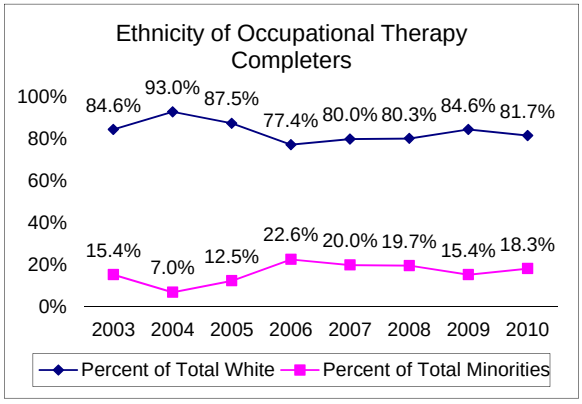


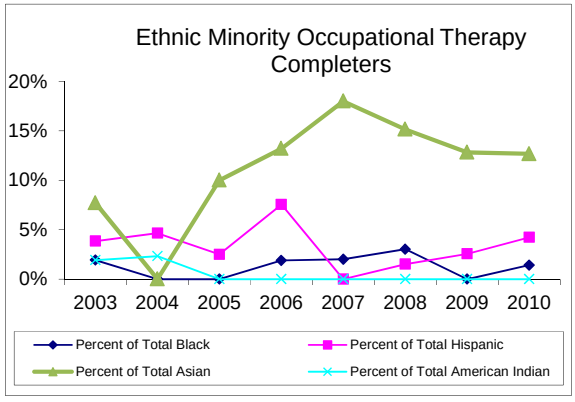


- Three universities offered Occupational Therapy programs in 2010.
- There are two types of Occupational Therapy Program credentials in Washington. The number of program completions from 2003-2010 by type are as follows:

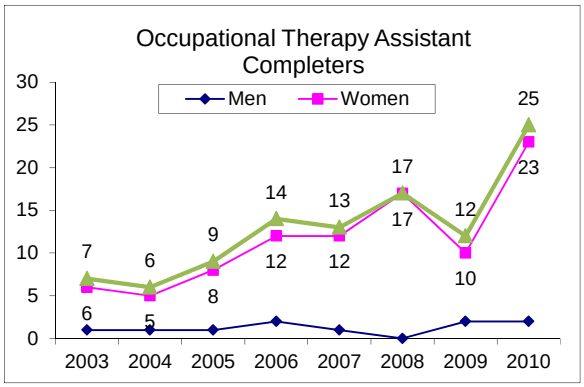
Type of Program	Number of Program Completions							
	2003	2004	2005	2006	2007	2008	2009	2010
Baccalaureate	23	21	14	16	15	1	0	0
Master's	34	30	31	43	43	75	81	78

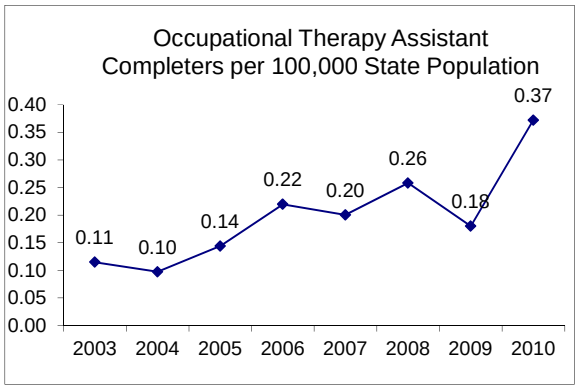
- Total annual program completions increased by 36.8% between 2003 and 2010.
- Completions per 100,000 population increases by 24.1% over the same time period.
- 88.5% of program completers were female in 2010 compared to 89.5% in 2003.





Occupational Therapy Assistant (CIP 51.0803)

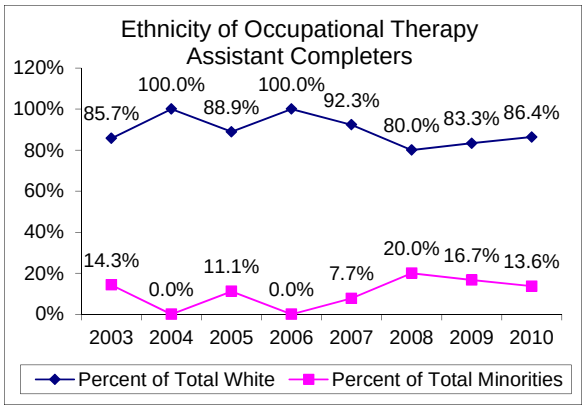


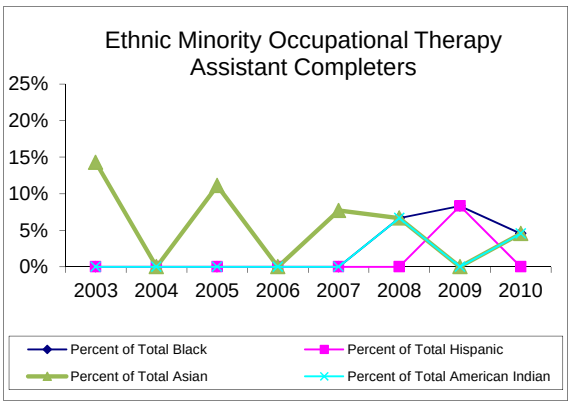


- One community college offered an Occupational Therapy Assistant program in 2010.
- There is one type of Occupational Therapy Assistant Program credential in Washington. The number of program completions from 2003-2010 by type are as follows:

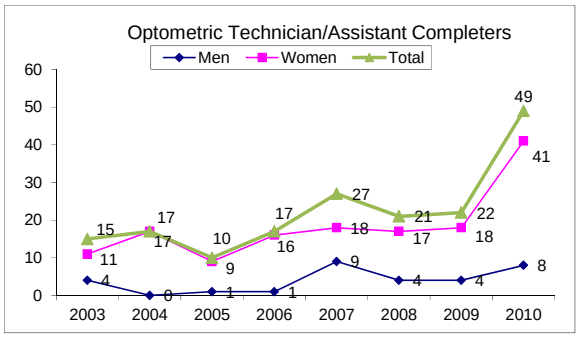
Type of Program	Number of Program Completions							
	2003	2004	2005	2006	2007	2008	2009	2010
Associate	7	6	9	14	13	17	12	25

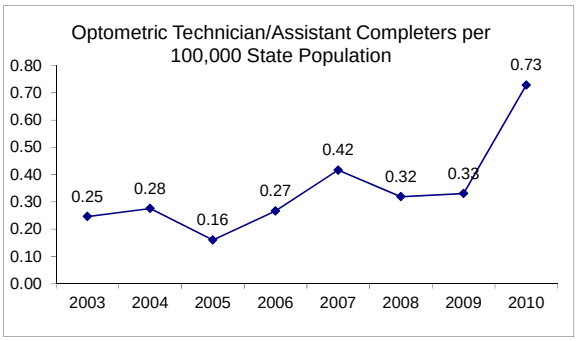
- Total annual program completions increased by 257% from 7 to 25 between 2003 and 2010. With the number of completions per year being low, a small variance in any one year can give a false impression of the significance of the percent of change.
- Completions per 100,000 population increased by 223.9% over the same time period.
- 92% of program completers were female in 2010 compared to 85.7% in 2003 and 100% in 2008.





Optometric Technician Assistant (CIP 51.1802)

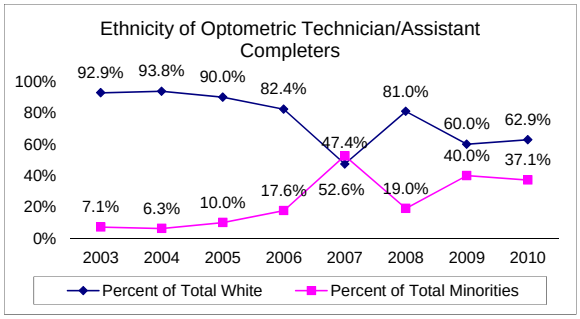


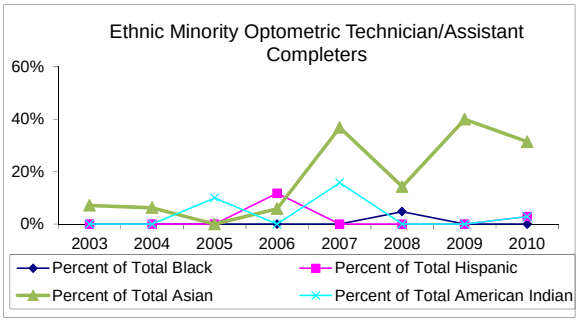


- Two community, state and technical colleges offered an Optometric Technician Assistant program in 2010.
- There are two types of Optometric Technician Program credentials in Washington. The number of program completions from 2003-2010 by type are as follows:

Type of Program	Number of Program Completions							
	2003*	2004	2005	2006	2007	2008	2009	2010
Less than two years	10	9	8	9	21	14	14	34
Associate	5	8	2	8	6	7	8	15

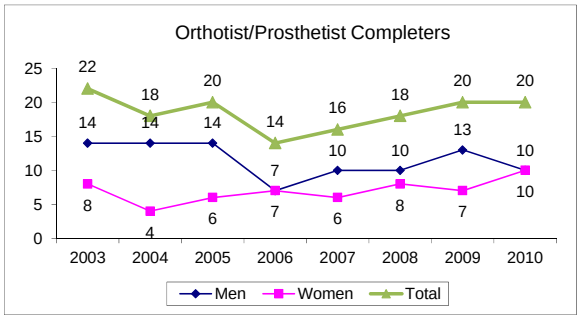
- Total annual program completions increased by 226% between 2003 and 2010.
- Completions per 100,000 population increased by 196.2% over the same time period.
- 83.7% of program completers were female in 2010 compared to 73.3% in 2003

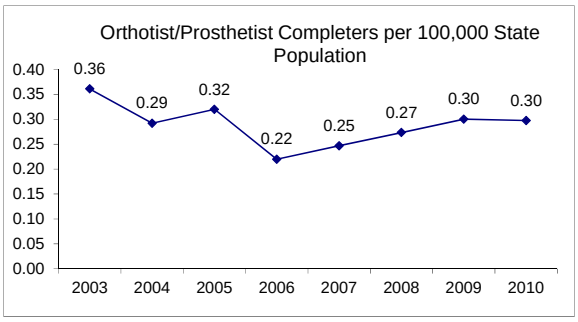




** 2003, 2008 and 2010, IPEDS completion data was supplemented with data from SBCTC.*

Orthotist/Prosthetist (CIP 51.2307)

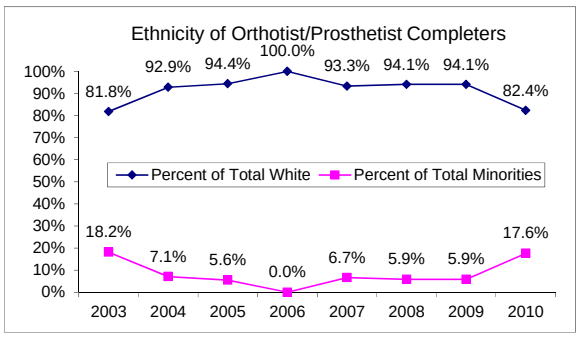


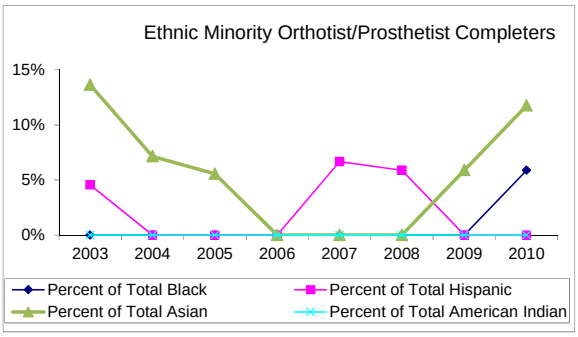


- One community college and one state university offered an Orthotist/Prosthetist program in 2010.
- There are three types of Orthotist/Prosthetist Program credentials in Washington. The number of program completions from 2003-2010 by type are as follows:

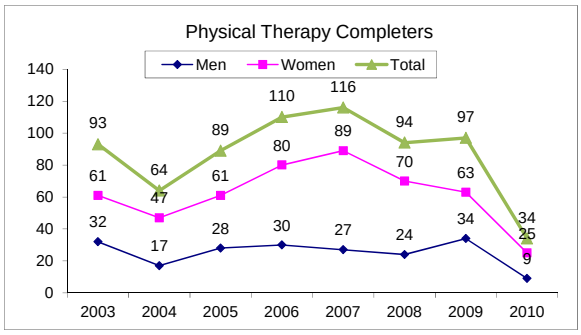
Type of Program	Number of Program Completions							
	2003	2004	2005	2006	2007	2008	2009	2010
Less than two years	2	1	0	0	0	1	2	2
Associate	7	8	8	5	6	6	8	6
Baccalaureate	13	9	12	9	10	11	10	12

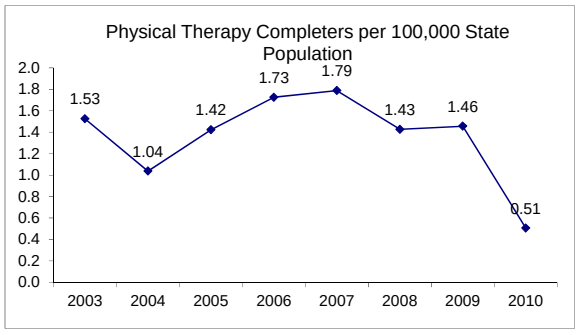
- Although total annual program completions decreased by 9.1% between 2003 and 2010 the number of completers is small (22 in 2003 and 20 in 2010) which can misrepresent the significance of the percent of change.
- Completions per 100,000 population decreased by 17.6% from 2003 to 2010.
- 50% of program completers were female in 2010 compared to 36.4% in 2003.





Physical Therapy (CIP 51.2308)

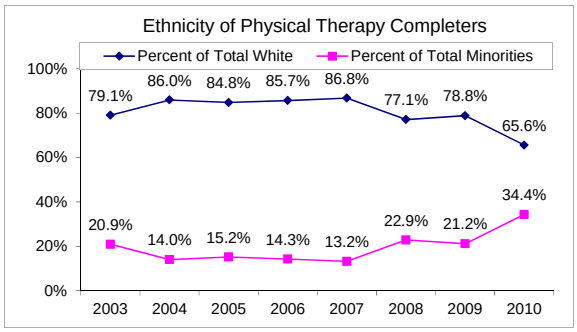


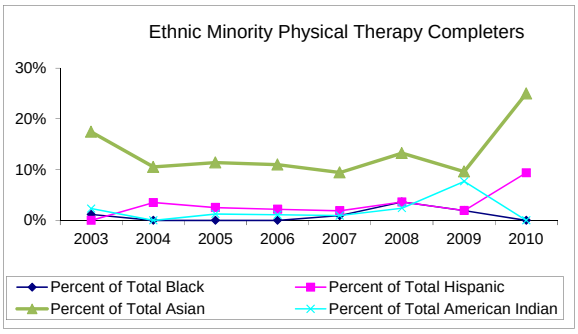


- One university offered a Physical Therapy program in 2010 which is down from three in 2008
- There have been two types of Physical Therapy Program credentials in Washington, but since 2008 only doctoral programs have had graduates.
- The number of program completions from 2003-2010 by type are as follows:

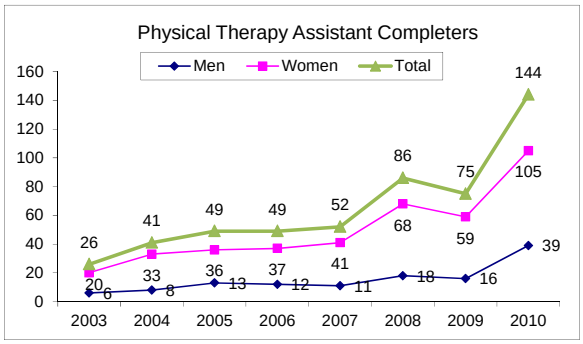
Type of Program	Number of Program Completions							
	2003	2004	2005	2006	2007	2008	2009	2010
Master's	93	64	42	46	53	0	0	0
Doctoral	0	0	47	64	63	94	97	34

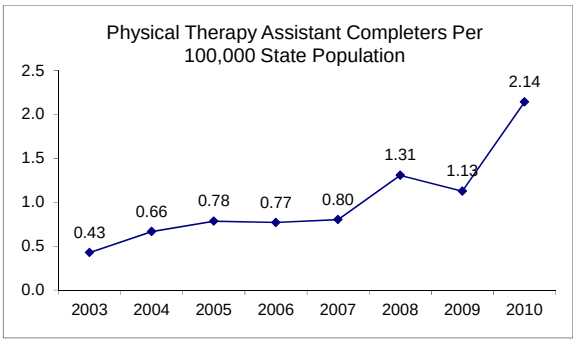
- The total annual program completions decreased by 63.4% between 2003 and 2010.
- Completions per 100,000 population decreased by 66.8% from 2003 to 2010.
- 73.5% of program completers were female in 2010 compared to 65.6% in 2003.





Physical Therapy Assistant (CIP 51.0806)

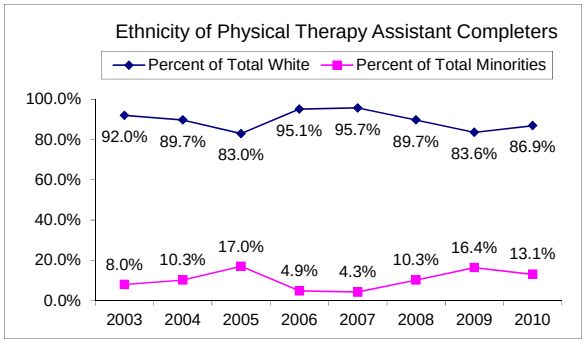


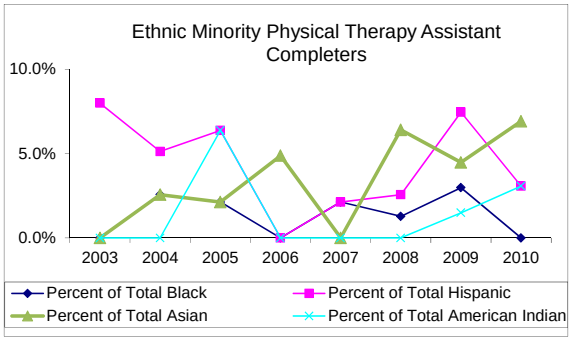


- Five community colleges offered Physical Therapy Assistant programs in 2010.
- There is one type of Physical Therapy Assistant Program credential in Washington. The number of program completions from 2003-2010 by type are as follows:

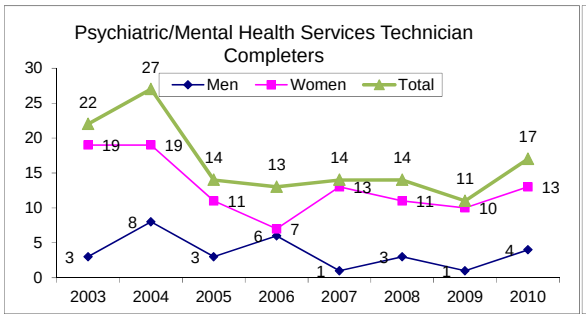
Type of Program	Number of Program Completions							
	2003	2004	2005	2006	2007	2008	2009	2010
Associate	26	41	49	49	52	86	75	144

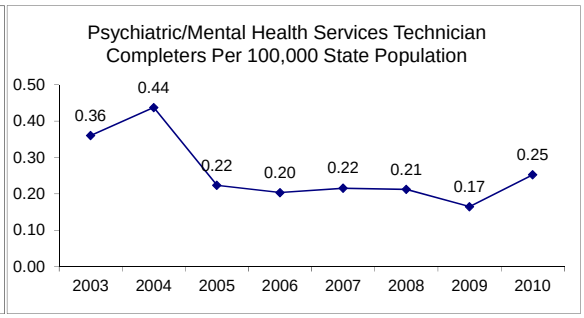
- Total annual program completions increased by 453.8% between 2003 and 2010 and by 67.4% from 2008.
- Completions per 100,000 population increased by 402.3% between 2003 and 2010.
- 57.8% of program completers were female in 2010 compared to 56.5% in 2003.





Psychiatric/Mental Health Services Technician (CIP 51.1502)



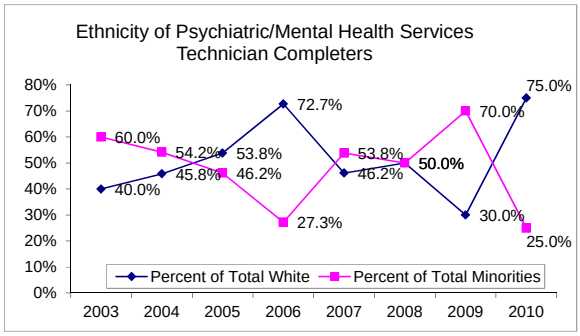


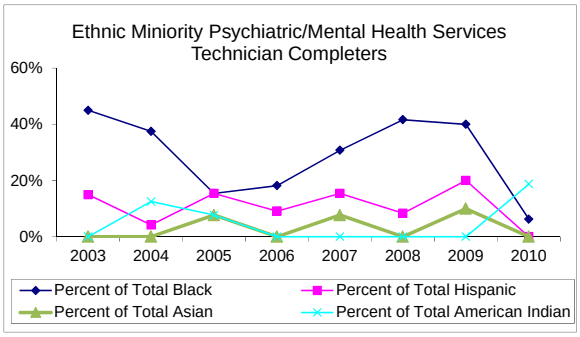
- Two community colleges (one with two branch locations) offered Psychiatric/Mental Health Services Technician programs in 2010.

- There are two types of Psychiatric/Mental Health Program credentials in Washington. The number of program completions from 2003-2010 by type are as follows:

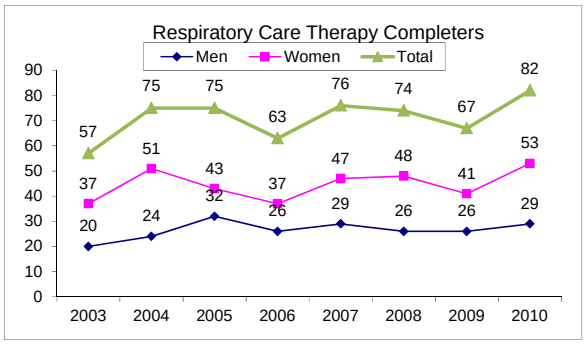
Type of Program	Number of Program Completions							
	2003	2004	2005	2006	2007	2008	2009	2010
Less than two years	21	22	10	9	11	12	9	13
Associate	1	5	4	4	3	2	2	4

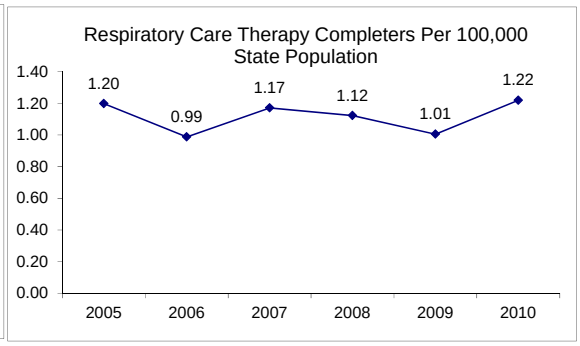
- Total annual program completions decreased by 22.7% between 2003 and 2010.
- Completions per 100,000 population decreased by 29.9% between 2003 and 2010.
- 76.5% of program completers were female in 2010 compared to 86.4% in 2003.





Respiratory Care Therapy (CIP 51.0908)

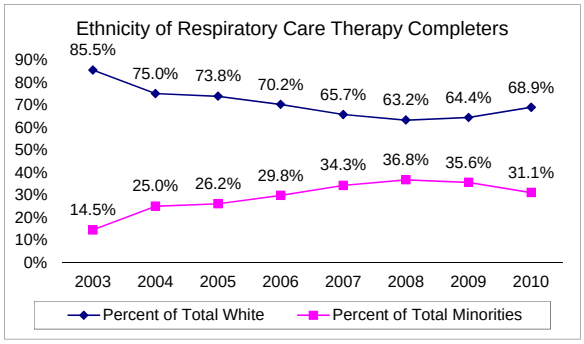


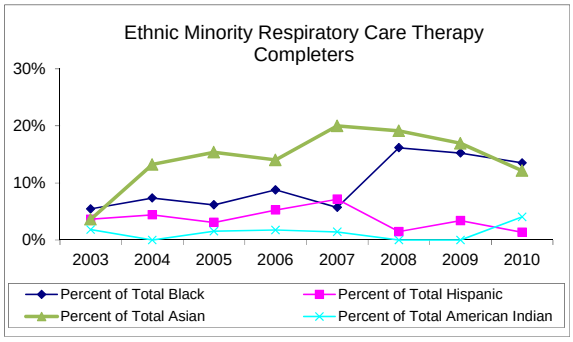


- Five community colleges or medical institutes in the state offered Respiratory Care Therapy programs in 2010, up from four in 2008.
- There have been two types of Respiratory Care Therapy Program credentials in Washington though currently only the Associates Degree program is used. The number of program completions from 2003-2010 by type are as follows:

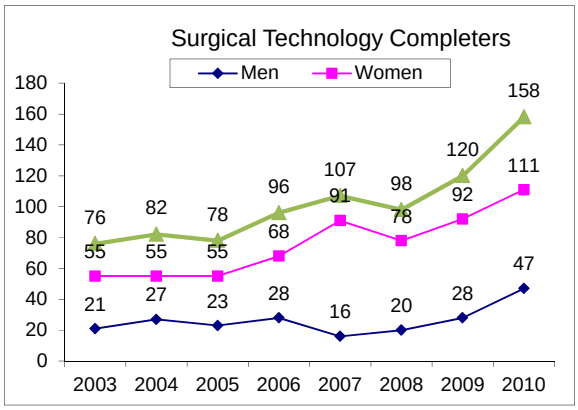
Type of Program	Number of Program Completions							
	2003	2004	2005	2006	2007	2008	2009	2010
Associate	47	65	75	63	76	74	67	82
2 to 4 years	10	10						

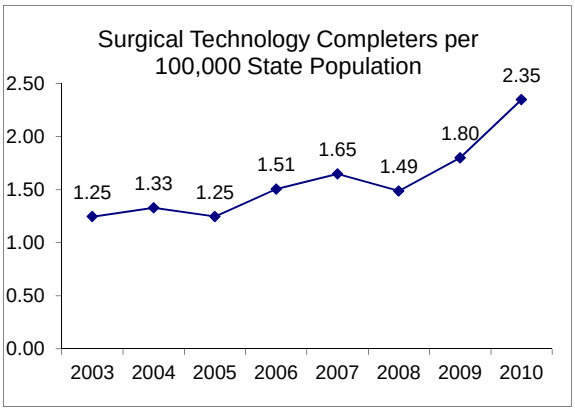
- Total annual program completions increased by 43.9% between 2003 and 2010.
- Completions per 100,000 population increased by 30.5% from 2003 to 2010.
- 65% of program completers were female in 2010, the same as in 2003.





Surgical Technology Program (CIP 51.0909)

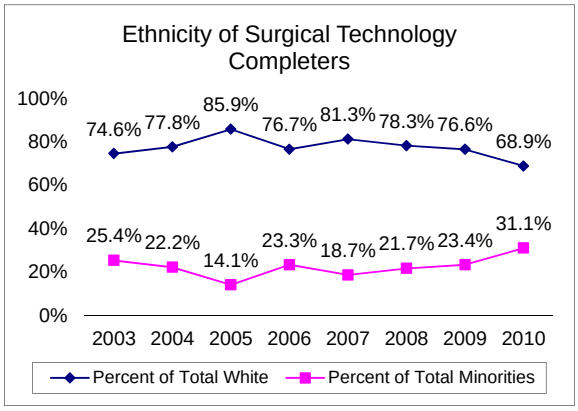


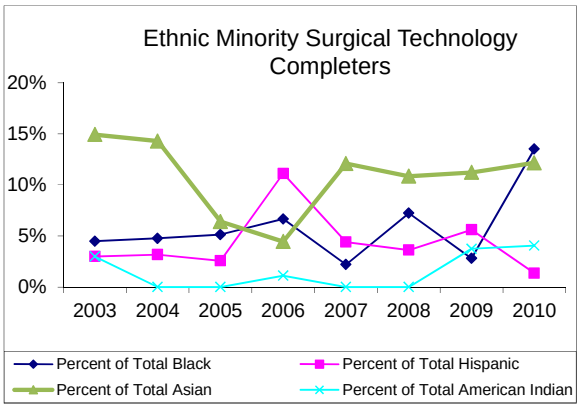


- Nine state and community colleges offered Surgical Technology programs in 2010 up from six in 2008
- There are two types of Surgical Technology program credentials in Washington. The number of program completions from 2003-2010 by type are as follows:

	Number of Program Completions							
Type of Program	2003*	2004	2005	2006	2007	2008	2009	2010
Less than two years	59	67	54	56	69	52	62	94
Associate	17	15	24	40	38	46	58	64

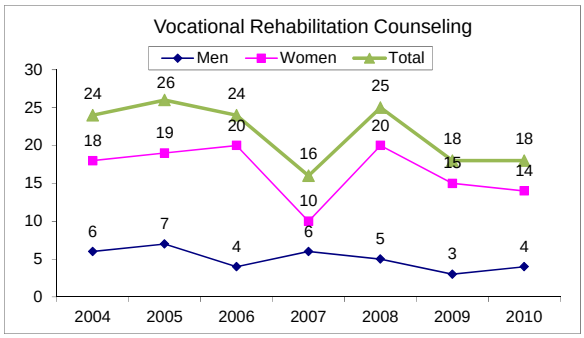
- Total annual program completions increased by 107.9 between 2003 and 2010, up from 61.2% between 2003 and 2008.
- Completions per 100,000 population increased by 88.5% from 2003 to 2010.
- 70.3% of program completers were female in 2010 compared to 72.4% in 2003.

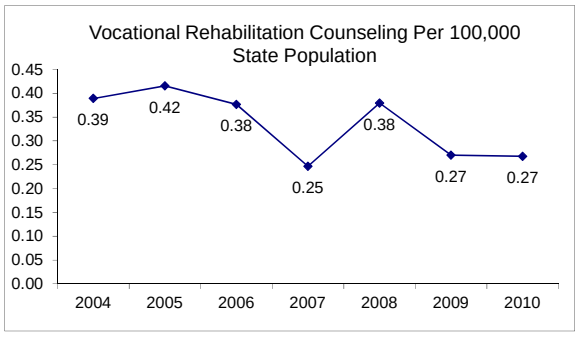




* *IPEDS completion data was supplemented with data from SBCTC for 2003-2008.*

Vocational Rehabilitation Counseling (CIP 51.2310)

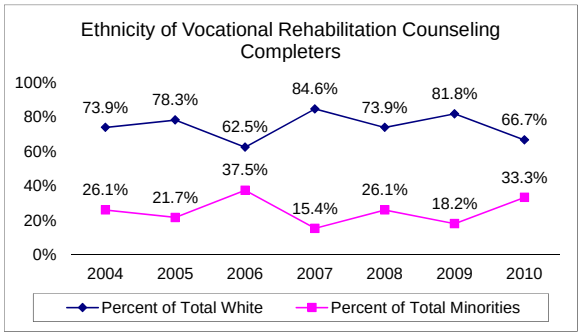


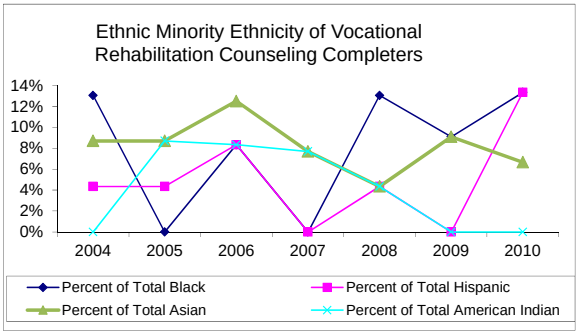


- One university and one community college offered Vocational Rehabilitation Counseling programs in 2010
- Two types of Vocational Rehabilitation Counseling program credentials were offered in 2010.
- Neither IPEDS nor SBCTC reflected any program completions in 2003.
- The number of program completions by type are as follows:

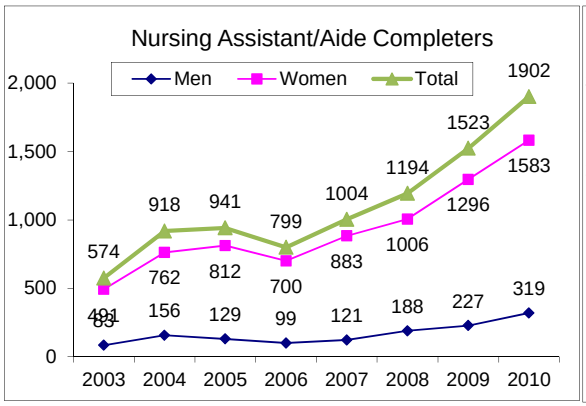
Type of Program	Number of Program Completions							
	2003	2004	2005	2006	2007	2008	2009	2010
Associate	0	9	8	5	2	5	1	5
Master's	0	14	18	19	14	20	17	13

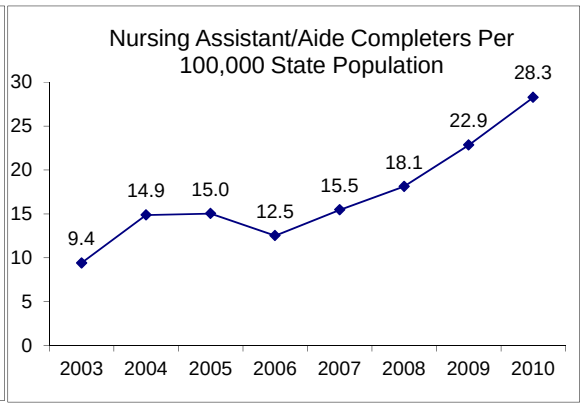
- Total annual program completions decreased by 25% between 2004 and 2010.
- Completions per 100,000 population decreased by 31.2% from 2004 and 2010.
- 79% of program completers were female in 2010 compared to 75% and 2004.





Nursing Assistant/Aide (CIP 51.1614) changed to Nursing Assistant/Aide and Patient Care (51.3902) in 2010

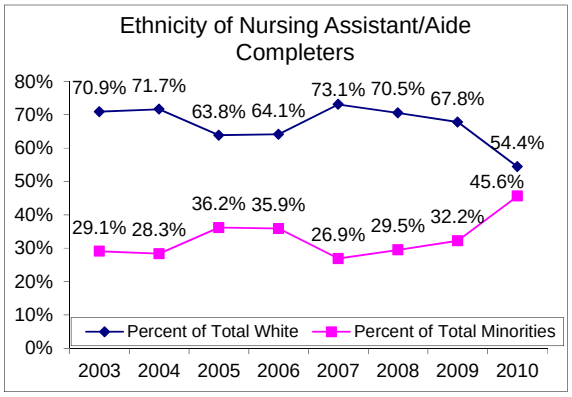


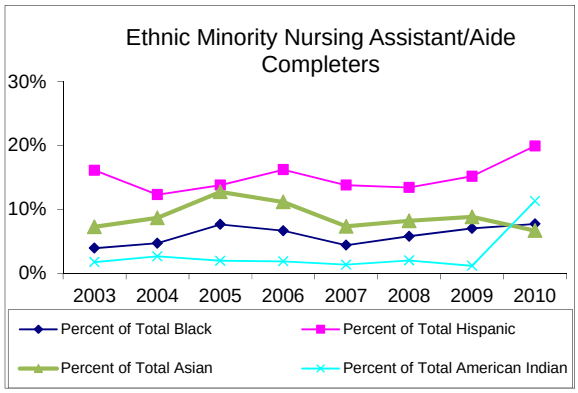


- Twenty-five state, community and technical colleges offered Nursing Assistant/Aide programs in 2010 up from 17 in 2008.
- The number of program completions from 2003-2010 are as follows:

Type of Program	Number of Program Completions							
	2003*	2004	2005	2006	2007	2008	2009	2010
Less than two years	574	918	941	799	1,004	1,194	1,296	1,583

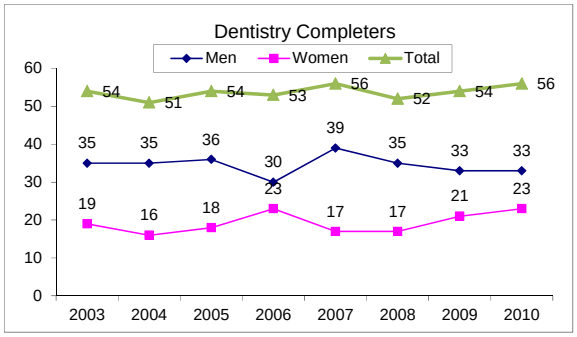
- Total annual program completions increased by 231.4% between 2003 and 2010 and by 59.3% from 2008.
- Completions per 100,000 population increased by 200.5% from 2003 to 2010.
- 83.2% of program completers were female in 2010 compared to 85.5% in 2003.

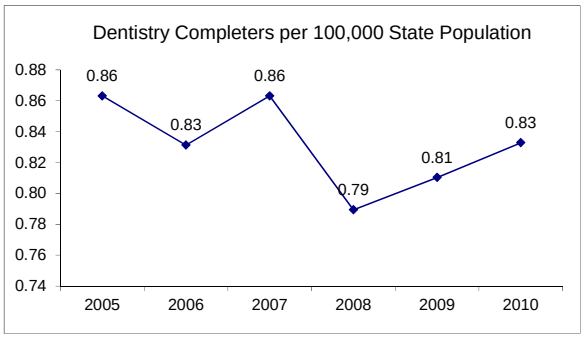




* *IPEDS completion data was supplemented with data from SBCTC for 2003 to 2008.*

Dentistry (CIP 51.0401)

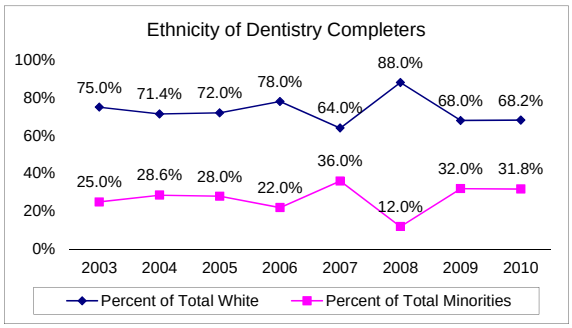


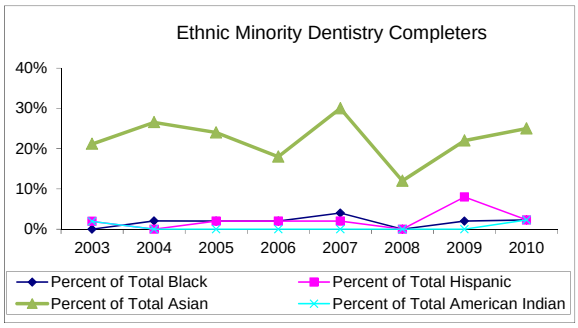


- One state university offered a Dentistry program in 2010.
- The number of program completions from 2003-2010 are as follows:

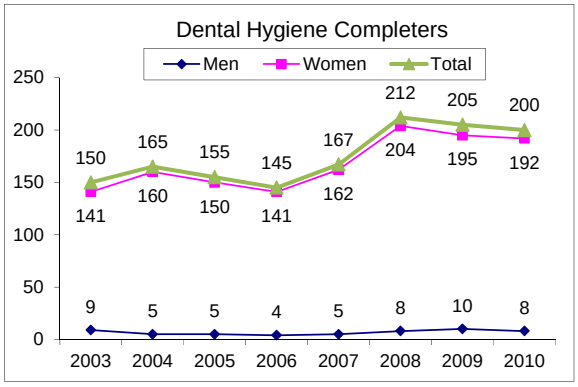
Type of Program	Number of Program Completions							
	2003	2004	2005	2006	2007	2008	2009	2010
Professional Degree	54	51	54	53	56	52	54	56

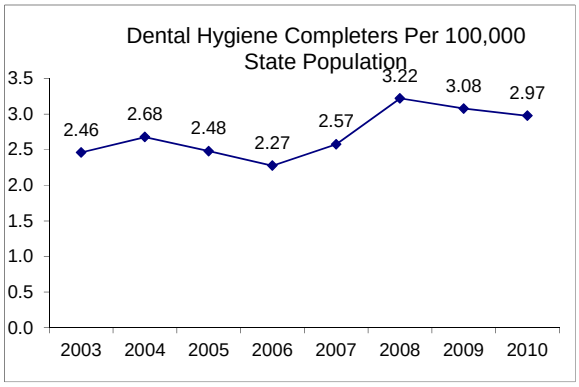
- Total annual program completions increased by 3.7% between 2003 and 2010.
- Completions per 100,000 population decreased by 6% from 2003 to 2010.
- 41.1% of program completers were female in 2010 compared to 35.2% in 2003.





Dental Hygiene (CIP51.0602)

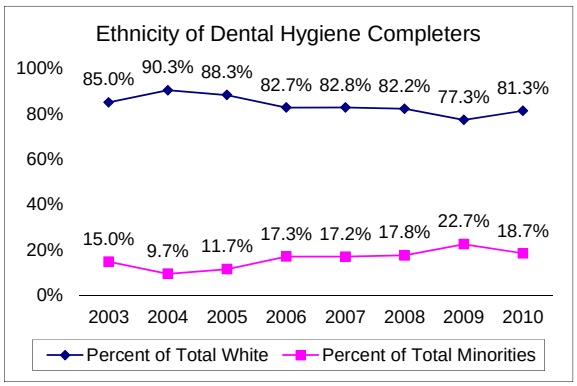


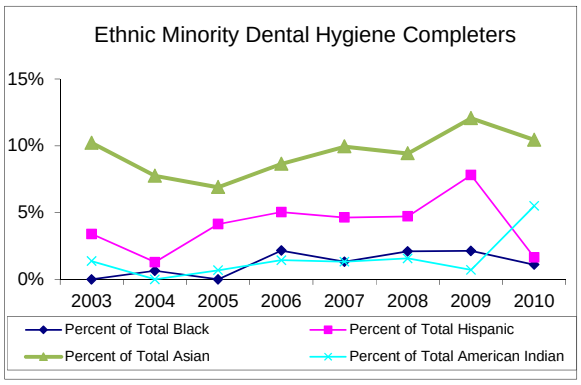


- Eight community, state colleges and universities offered Dental Hygiene programs in 2010.
- There are two types of Dental Hygiene program credentials in Washington. The number of program completions from 2003-20010 by type are as follows:

Type of Program	Number of Program Completions							
	2003*	2004	2005	2006	2007	2008	2009	2010
Associate	114	119	98	95	109	146	152	148
Baccalaureate	36	46	57	50	58	66	53	52

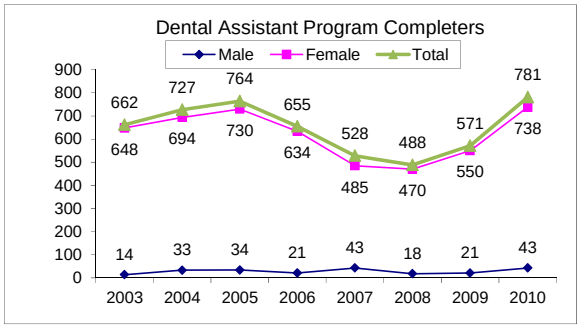
- Total annual program completions increased by 33.3% between 2003 and 2010.
- Completions per 100,000 population increased by 20.9% from 2003 to 2010.
- 96% of program completers were female in 2010 compared to 94.0% in 2003.

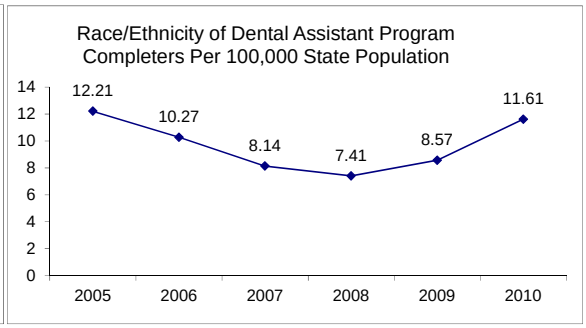




** IPEDS completion data for Associate programs was supplemented with data from SBCTC for 2003-2008.*

Dental Assistant (CIP 51.0601)

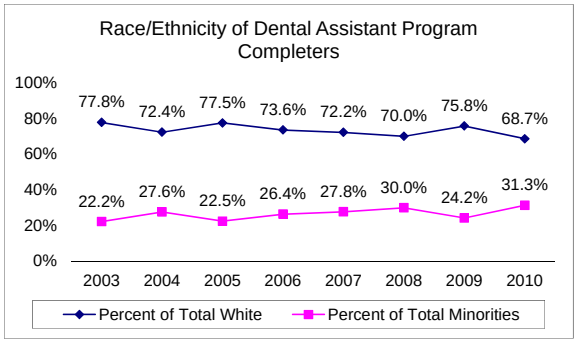


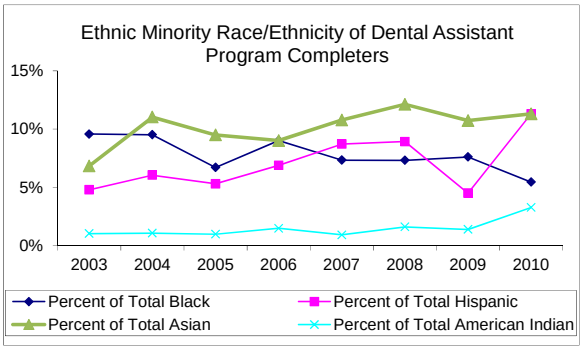


- Fourteen community, technical and state colleges offered Dental Assistant programs in 2010 down from 15 in 2008
- There have been three types of Dental Assistant program credentials in Washington but in 2009 and 2010 only two reported participant completions. The number of program completions from 2003-2010 by type are as follows:

Type of Program	Number of Program Completions							
	2003*	2004	2005	2006	2007	2008	2009	2010
Less than two years	595	678	716	586	478	422	489	645
Associate	52	42	36	56	47	52	82	136
2 to 4 years	15	7	12	13	3	14	0	0

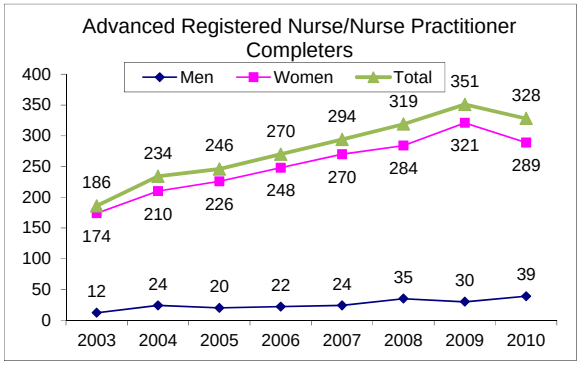
- Total annual program completions increased by 18% between 2003 and 2010 and by 60% from 2008.
- Completions per 100,000 population increased by 7% from 2003 to 2010.
- 94.5% of program completers were female in 2010 compared to 97.9% in 2003.

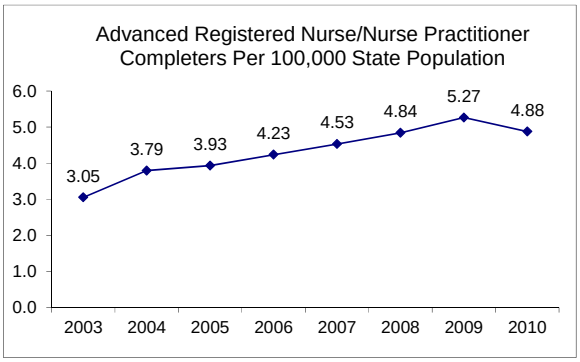




* *IPEDS completion data was supplemented with data from SBCTC for 2003-2008.*

Advanced Registered Nurse Practitioner (CIP 51.1605 and 1601) changed to (51.3805 and 3801) in 2010

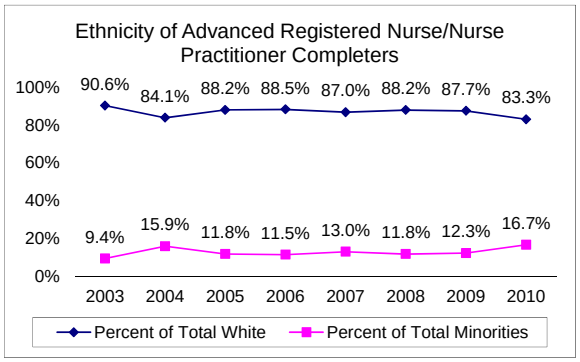


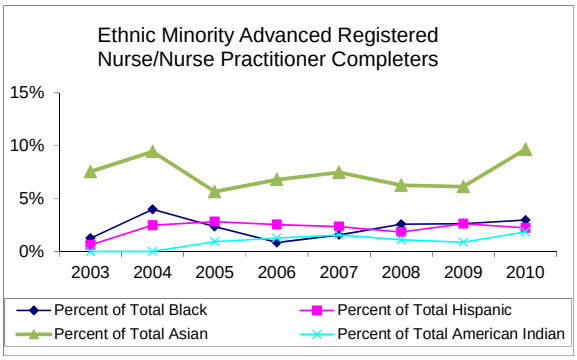


- Seven universities and branches offered Advanced Registered Nurse/ Nurse Practitioner programs in 2010.
- Nurse Practitioners and Registered Nurses having a degree or certificate at or above the master's level were selected. Completion numbers are as follows:

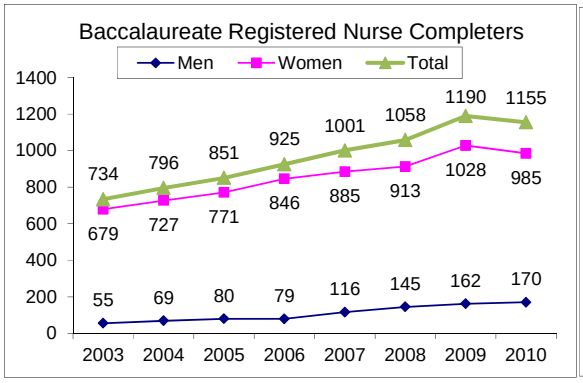
Type of Program	Number of Program Completions							
	2003	2004	2005	2006	2007	2008	2009	2010
Doctor's Degree	10	10	19	14	14	16	40	0
Master's Degree	176	224	227	254	280	302	311	328

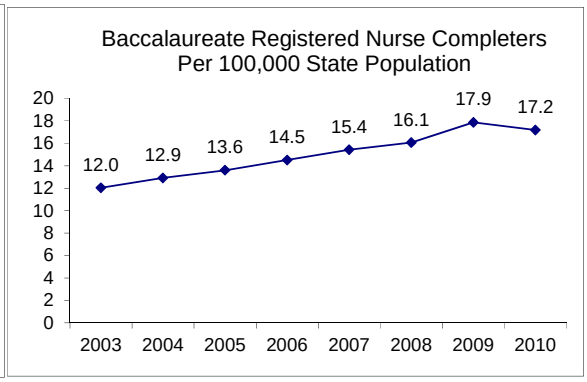
- The total annual program completions increased by 76.3% between 2003 and 2010.
- Completions per 100,000 population increased by 59.9% from 2003 to 2010.
- 88% of program completers were female in 2010 compared to 93.5% in 2003.





Baccalaureate Registered Nurse (CIP 51.1601), changed to (51.3801) in 2010

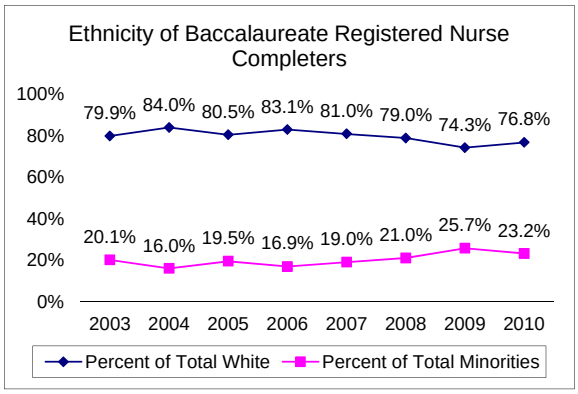


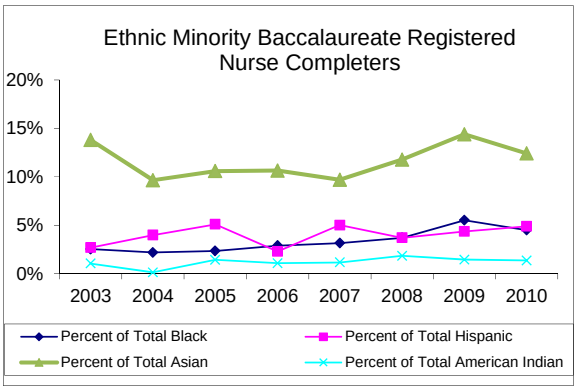


- Thirteen universities and colleges offered Registered Nurse programs at the Baccalaureate level in 2010 up from 12 in 2008.

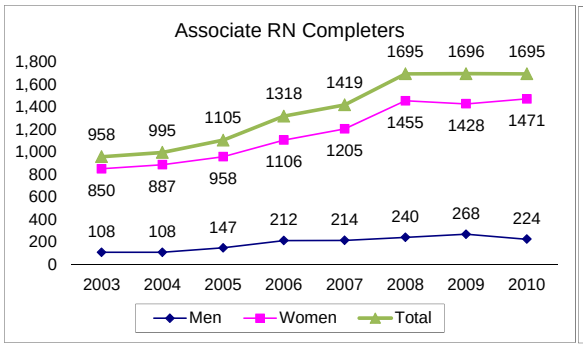
Type of Program	Number of Program Completions							
	2003	2004	2005	2006	2007	2008	2009	2010
Baccalaureate	734	796	851	925	1001	1058	1190	1155

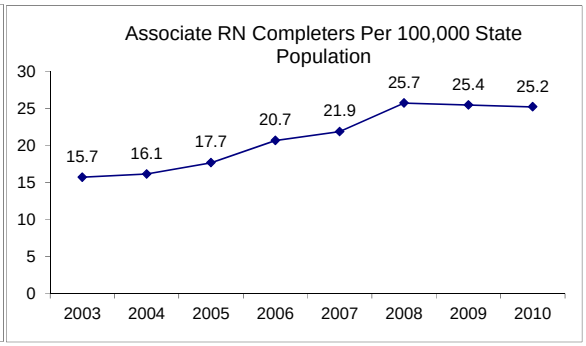
- Total annual program completions for baccalaureate level RNs increased by 57.4% between 2003 and 2010.
- Completions per 100,000 population increased by 42.7% from 2003 to 2010.
- Eighty-five percent of program completers were female in 2010 compared to 92.5% in 2003.
- The number of men completing baccalaureate level RN programs nearly doubled during this time frame.





Associate Registered Nurse (CIP 51.1601), changed to (51.3801) in 2010

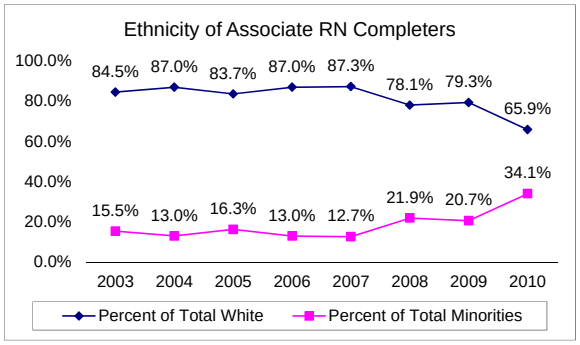


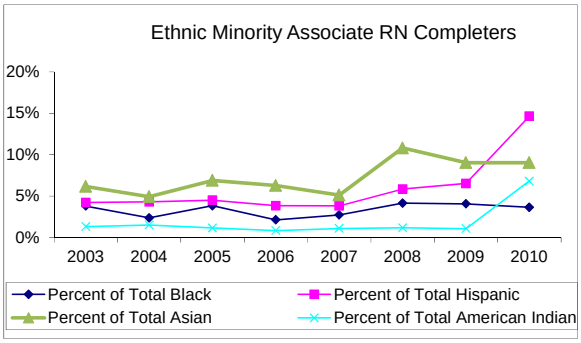


- Thirty community and technical colleges and universities offered Associate level Registered Nurse programs in 2010.

Type of Program	Number of Program Completions							
	2003*	2004	2005	2006	2007	2008	2009	2010
Associate	958	995	1105	1318	1419	1695	1696	1695

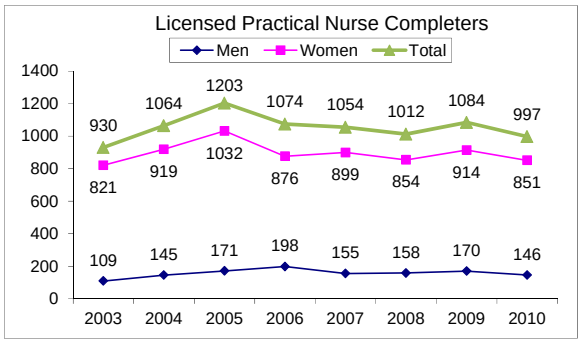
- SBCTC reports an additional 179 early leavers with 45 or more credits but no credential.
- Total annual program completions for associate level RNs increased by 76.9% between 2003 and 2010.
- Completions per 100,000 population increased by 60.5% from 2003 to 2010.
- 86.8% of program completers were female in 2010 compared to 88.7% in 2003. There was a 17 percent increase of men completing an associate level nursing program.

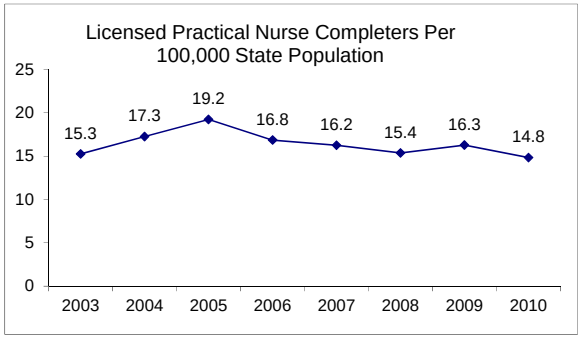




** IPEDS completion data was supplemented with data from SBCTC for 2003-2008.*

Licensed Practical Nurse (CIP 51.1613) Changed to (51.3901) in 2010

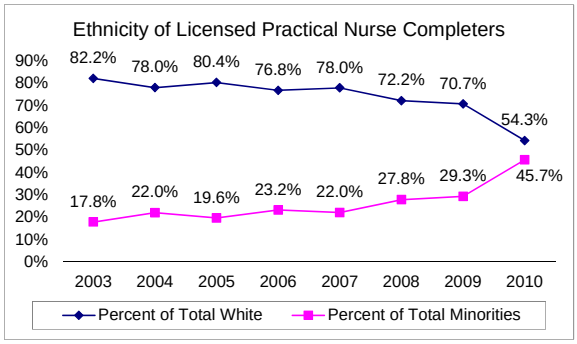


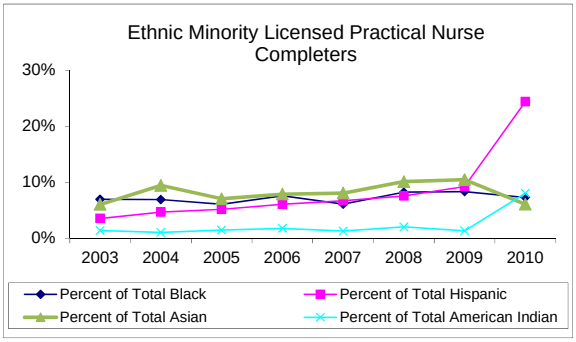


- Twenty community and technical colleges offered Licensed Practical Nurse programs in 2010 down from 22 in 2008.
- There are three types of Licensed Practical Nurse program credentials in Washington. The number of program completions from 2003-2010 by type are as follows:

Type of Program	Number of Program Completions							
	2003	2004	2005	2006	2007	2008	2009	2010
Less than two years	839	992	1110	1019	988	928	993	926
Associate	25	27	41	55	54	43	91	71
2 to 4 years*	66	45	52	0	12	41	15	13

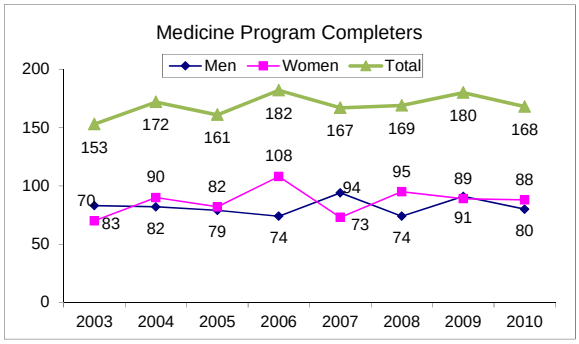
- Total annual program completions for LPNs increased by 7.2% between 2003 and 2010.
- Completions per 100,000 population decreased by 2.8% from 2003 to 2010.
- 85.4% of program completers were female in 2010 compared to 88.3% in 2003.
- There was a 25 percent increase in the number of men completing an LPN program.

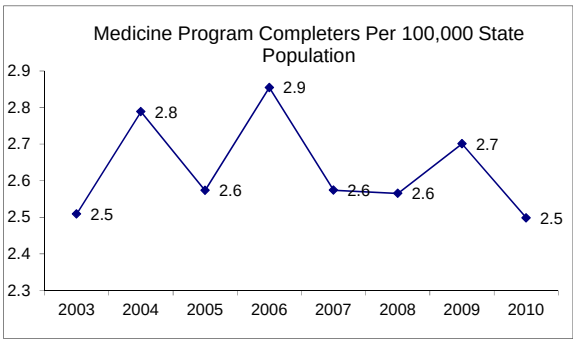




**The completion number for 2 to 4 years was supplemented from SBCTC.#*

Medicine (CIP 51.1201)

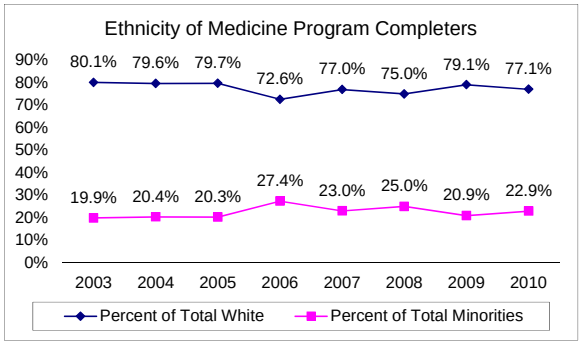


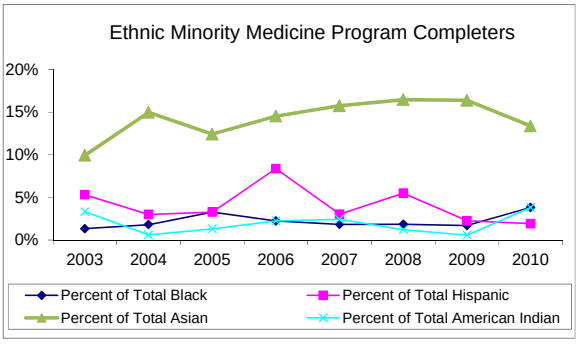


- One university offered a program in Medicine in 2010.

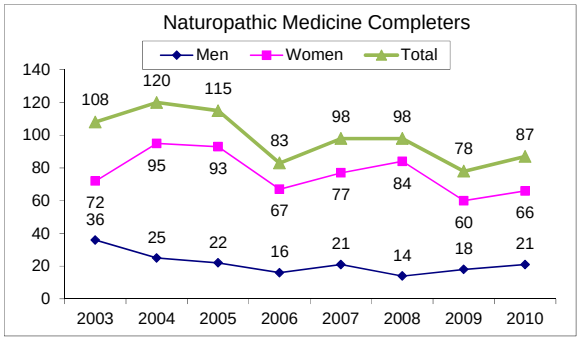
Type of Program	Number of Program Completions							
	2003	2004	2005	2006	2007	2008	2009	2010
Professional Degree	153	172	161	182	167	169	180	168

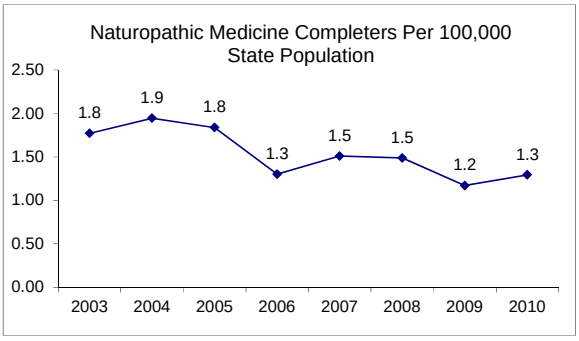
- Total annual program completions increased by 9.8% between 2003 and 2010.
- Completions per 100,000 population decreased by 0.4% from 2003 to 2010.
- 52.4% of program completers were female in 2010 compared to 45.8% in 2003





Naturopathic Medicine (CIP 51.3303)

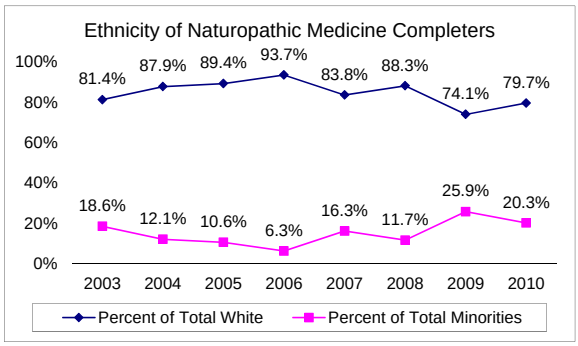


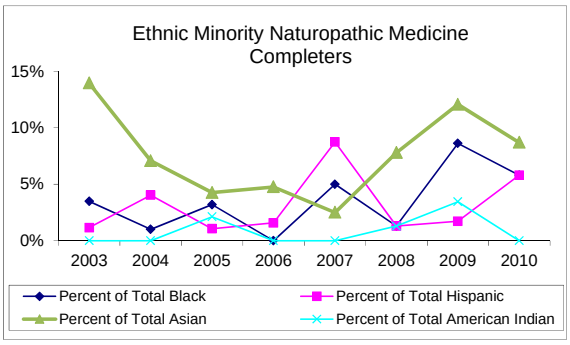


- One university offered a program in Naturopathic Medicine in 2010.

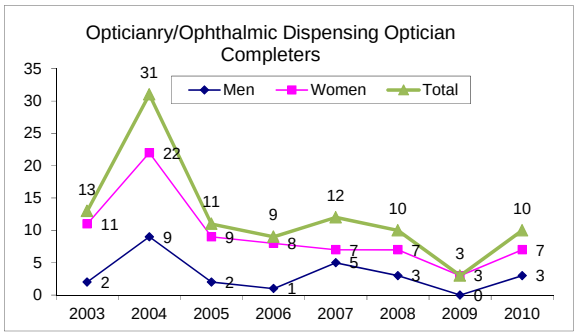
Type of Program	Number of Program Completions							
	2003	2004	2005	2006	2007	2008	2009	2010
Professional Degree	108	120	115	83	98	98	78	87

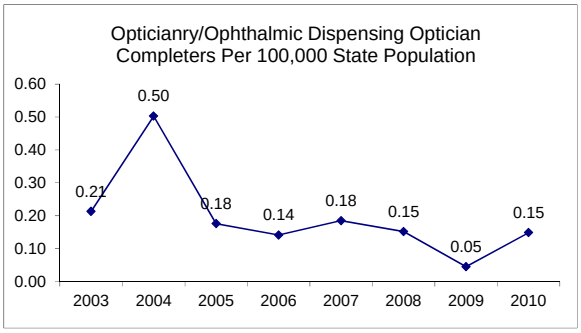
- Total annual program completions decreased by 19.4% between 2003 and 2010.
- Completions per 100,000 population decreased by 27% from 2003 to 2010.
- 75.9% of program completers were female in 2010 compared to 66.7% in 2003.





Opticianry/Ophthalmic Dispensing Optician (CIP 51.1801)

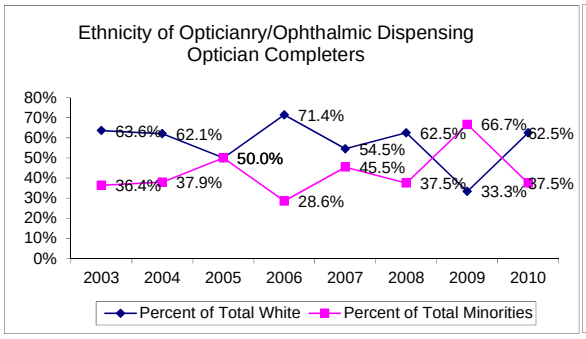


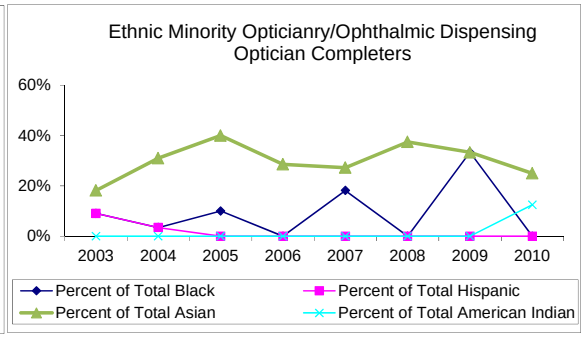


- One community college offered Opticianry/Ophthalmic Dispensing Optician programs in 2010, down from two in 2008.
- There have been two types of Opticianry/Ophthalmic Dispensing program credentials in Washington though only one reported completions in 2009 and 2010. The number of program completions from 2003-2010 by type are as follows:

Type of Program	Number of Program Completions							
	2003*	2004	2005	2006	2007	2008	2009	2010
Less than two years	1	5	1	2	0	1	0	0
Associate	12	26	10	7	12	9	4	10

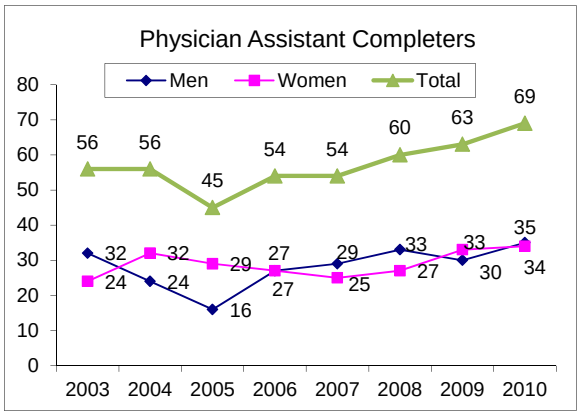
- Total annual program completions decreased by 23.1 percent (from 13 to 10) between 2003 and 2010.
- Completions per 100,000 population decreased by 30.2% from 2003 to 2010.
- 70% of program completers were female in 2010 compared to 84.6% in 2003.
- Since the numbers of completions per year are low, a small variance in any one year can give a false impression of the significance of the percent of change.

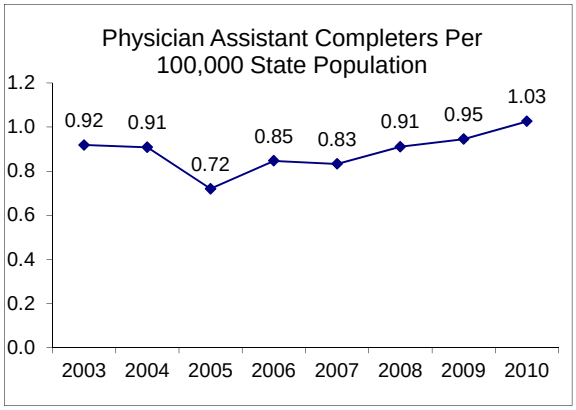




* *IPEDS completion data was supplemented with data from SBCTC for 2003-2009. An additional 4 early leavers were recorded by SBCTC in 2010.*

Physician Assistant (CIP 51.0912)

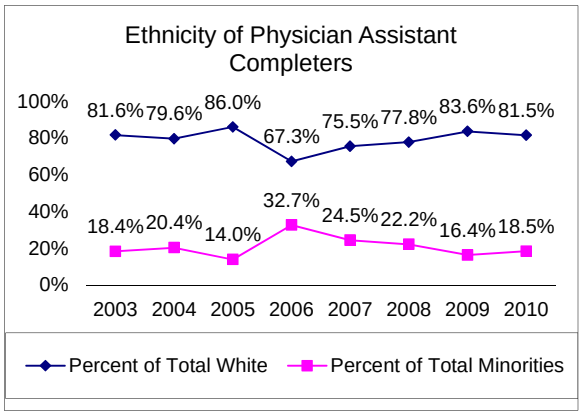


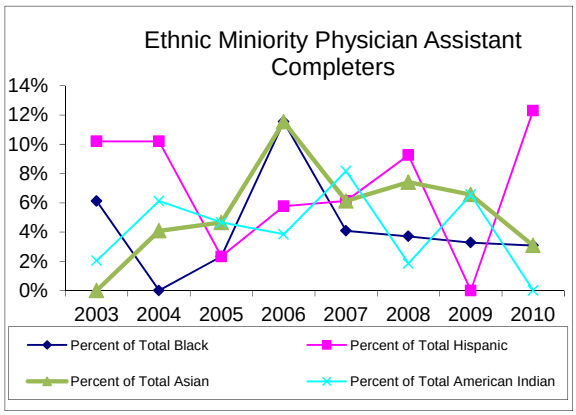


- One university offered a Physician Assistant program in 2010.

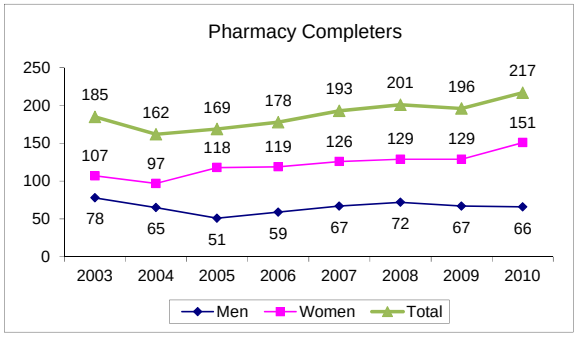
Type of Program	Number of Program Completions							
	2003	2004	2005	2006	2007	2008	2009	2010
Baccalaureate	56	56	45	54	54	60	63	69

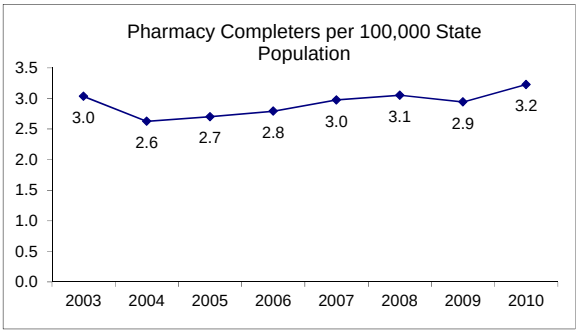
- Total annual program completions increased by 23.2% between 2003 and 2010.
- Completions per 100,000 population increased by 11.7% between 2003 and 2010.
- 49.3% of program completers were female in 2010 compared to 42.9% in 2003.





Pharmacy (CIP 51.2001)

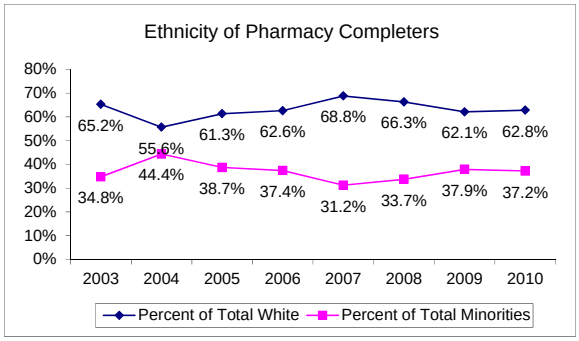


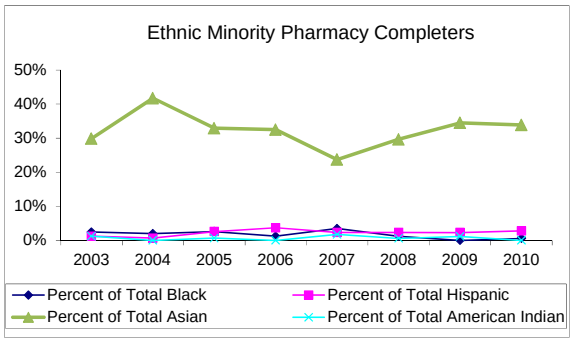


- Two universities offered a Pharmacy program in 2010.
- The number of program completions from 2003-2010 are as follows:

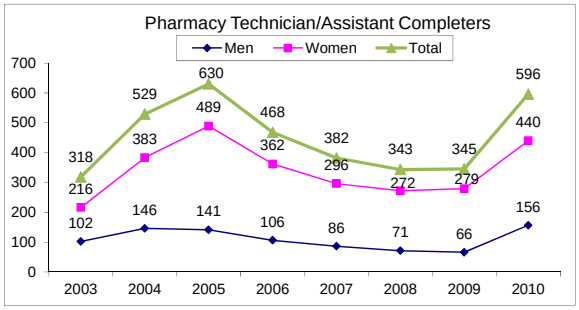
Type of Program	Number of Program Completions							
	2003	2004	2005	2006	2007	2008	2009	2010
Professional degree	185	162	169	178	193	201	169	212
Master's	0	0	0	0	0	0	0	5

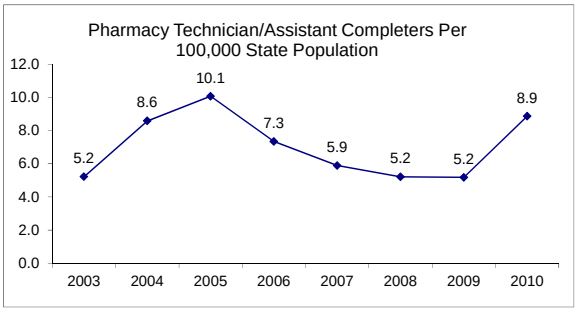
- Total annual program completions increased by 17.3% between 2003 and 2010.
- Completions per 100,000 population increased by 6.4% from 2003 to 2010.
- 69.6% of program completers were female in 2008 compared to 57.8% in 2010.





Pharmacy Technician/Assistant (CIP 51.0805)

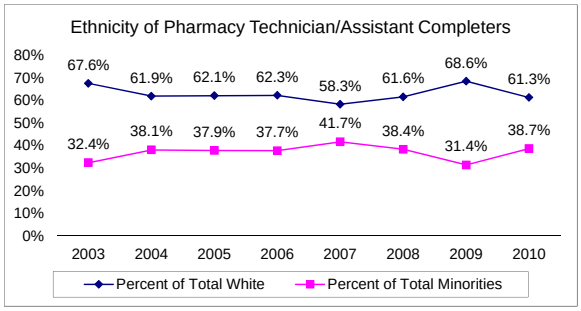


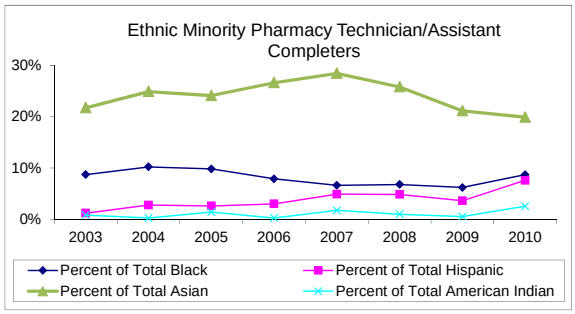


- Fourteen state, community and technical colleges offered Pharmacy Technician/Assistant programs in 2010, down from 17 in 2008.
- There are two types of Pharmacy Technician/Assistant Program credentials in Washington. The number of program completions from 2003-2010 by type are as follows:

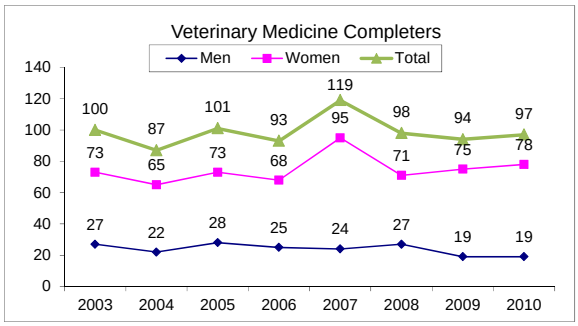
Type of Program	Number of Program Completions							
	2003	2004	2005	2006	2007	2008	2009	2010
Less than two years	295	496	609	450	348	306	301	571
Associate	23	33	21	18	34	37	44	25

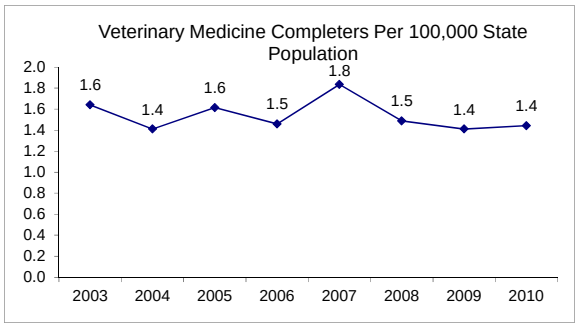
- Total annual program completions increased by 87.4% between 2003 and 2010 and 73.8% from 2008.
- Completions per 100,000 population increased by 70% between 2003 and 2010.
- 73.8% of program completers were female in 2010 compared to 67.9% in 2003.





Veterinary Medicine (CIP 51.2401)

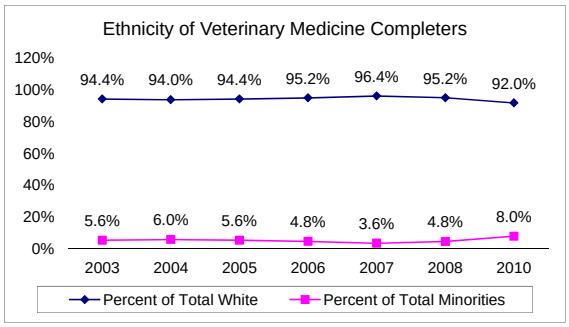


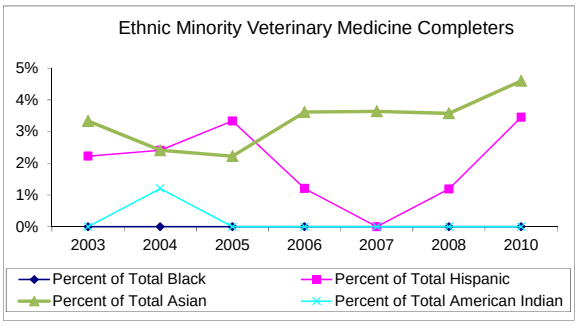


- One university offered a program in Veterinary Medicine in 2010.
- The number of program completions from 2003-2010 are as follows:

Type of Program	Number of Program Completions							
	2003	2004	2005	2006	2007	2008	2009	2010
Professional Degree	100	87	101	93	119	98	94	97

- Total annual program completions decreased by 3% from 2003 to 2010.
- Completions per 100,000 population decreased by 12% from 2003 to 2010.
- 80.4% of program completers were female in 2010 compared to 73% in 2003.





Note: The racial data for 2009 for this program was missing from IPEDS.

cip_code	cip_description	1-Olympic	2-Pacific Mountain	3-Northwest	4-Snohomish	5-Seattle/King
51.3301	Acupuncture and Oriental Medicine					33
51.0999	Allied Health Diagnostic/Intervention/Treatment Professions, Oth				26	34
51.0913	Athletic Training/Trainer					
51.0204	Audiology/Audiologist and Speech-Language Pathology/Pathologist			29		68
51.1005	Clinical Laboratory Science/Medical Technology/Technologist					26
51.0802	Clinical/Medical Laboratory Assistant		1		40	15
51.0601	Dental Assisting/Assistant	40	41	28	143	428
51.0602	Dental Hygiene/Hygienist				21	69
51.0603	Dental Laboratory Technology/Technician					
51.0699	Dental Services and Allied Professions, Other					
51.0401	Dentistry (DDS, DMD)					56
51.3101	Dietetics/Dietitian (RD)					
51.0902	Electrocardiograph Technology/Technician		1		40	
51.0903	Electroneurodiagnostic/Electroencephalographic Tech/Tech					13
51.0904	Emergency Medical Technology/Technician (EMT Paramedic)			1		104
51.3805	Family Practice Nurse/Nurse Practitioner					22
51.2699	Health Aides/Attendants/Orderlies, Other	2			3	14
51.0799	Health and Medical Administrative Services, Other				25	48
51.0706	Health Information/Medical Records Administration/Administrator					38
51.0707	Health Information/Medical Records Technology/Technician		11	15	20	22
51.0703	Health Unit Coordinator/Ward Clerk				95	6
51.0701	Health/Health Care Administration/Management					53
51.2602	Home Health Aide/Home Attendant					
51.0702	Hospital and Health Care Facilities Administration/Management					1
51.3901	Licensed Practical/Vocational Nurse Training	21	87	142	118	192
51.0716	Medical Administrative/Executive Assistant and Medical Secretary	8	15	9	33	112
51.0713	Medical Insurance Coding Specialist/Coder	16	9	25	121	134
51.0714	Medical Insurance Specialist/Medical Biller	36			85	28
51.0705	Medical Office Management/Administration	15			13	
51.0907	Medical Radiologic Technology/Science - Radiation Therapist			39		23
51.0712	Medical Reception/Receptionist	25	1	7	14	50
51.0708	Medical Transcription/Transcriptionist	3	2	1	86	7
51.0801	Medical/Clinical Assistant	190	13	29	408	1227
51.0711	Medical/Health Management and Clinical Assistant/Specialist		3			29
51.1201	Medicine (MD)					168
51.1599	Mental and Social Health Services and Allied Professions, Other		20	9	41	117
51.1508	Mental Health Counseling/Counselor			4		67
51.3303	Naturopathic Medicine/Naturopathy (ND)					87
51.0905	Nuclear Medical Technology/Technologist					8
51.3802	Nursing Administration					14
51.3902	Nursing Assistant/Aide and Patient Care Assistant/Aide	117	232	248	243	277
51.2206	Occupational Health and Industrial Hygiene					11
51.0803	Occupational Therapist Assistant					25
51.2306	Occupational Therapy/Therapist					23
51.1801	Opticianry/Ophthalmic Dispensing Optician					10
51.1802	Optometric Technician/Assistant					17
51.2307	Orthotist/Prosthetist					12
51.1901	Osteopathic Medicine/Osteopathy (DO)					
51.2001	Pharmacy (PharmD [USA], PharmD or BS/BPharm [Canada])					126
51.0805	Pharmacy Technician/Assistant	40		9	148	321
51.1009	Phlebotomy Technician/Phlebotomist	12	2	14	145	682
51.0806	Physical Therapy Technician/Assistant	15		49		110
51.2308	Physical Therapy/Therapist					
51.0912	Physician Assistant					69
51.1502	Psychiatric/Mental Health Services Technician				16	
51.2201	Public Health, General					56
51.3811	Public Health/Community Nurse/Nursing					3
51.0911	Radiologic Technology/Science - Radiographer	1				146
51.3801	Registered Nursing/Registered Nurse	104	112	112	135	1036
51.2399	Rehabilitation and Therapeutic Professions, Other					1
51.0908	Respiratory Care Therapy/Therapist					74
51.0812	Respiratory Therapy Technician/Assistant					2
51.0203	Speech-Language Pathology/Pathologist			23		27
51.1501	Substance Abuse/Addiction Counseling	39		17	30	39
51.0909	Surgical Technology/Technologist		1	8	13	58
51.2401	Veterinary Medicine (DVM)					
51.0808	Veterinary/Animal Health Technology/Veterinary Assistant			9	15	273

cip_code	cip_description	WDC-Name						
		6-Pierce	7-Southwest Washington	8-North-Central Columbia	9-Tri-County	10-Eastern	11-Benton-Franklin	12-Spokane
51.3301	Acupuncture and Oriental Medicine							
51.0999	Allied Health Diagnostic/Intervention/Treatment Professions, Oth							22
51.0913	Athletic Training/Trainer					12		15
51.0204	Audiology/Audiologist and Speech-Language Pathology/Pathologist					53		
51.1005	Clinical Laboratory Science/Medical Technology/Technologist							
51.0802	Clinical/Medical Laboratory Assistant			15				
51.0601	Dental Assisting/Assistant	94			5			133
51.0602	Dental Hygiene/Hygienist		23		19		16	52
51.0603	Dental Laboratory Technology/Technician	5						
51.0699	Dental Services and Allied Professions, Other	6						
51.0401	Dentistry (DDS, DMD)							
51.3101	Dietetics/Dietitian (RD)				34			
51.0902	Electrocardiograph Technology/Technician							
51.0903	Electroneurodiagnostic/Electroencephalographic Tech/Tech							
51.0904	Emergency Medical Technology/Technician (EMT Paramedic)	21	1		10			2
51.3805	Family Practice Nurse/Nurse Practitioner	9						
51.2699	Health Aides/Attendants/Orderlies, Other							13
51.0799	Health and Medical Administrative Services, Other							
51.0706	Health Information/Medical Records Administration/Administrator							59
51.0707	Health Information/Medical Records Technology/Technician	21	9		13			19
51.0703	Health Unit Coordinator/Ward Clerk						1	17
51.0701	Health/Health Care Administration/Management					6		11
51.2602	Home Health Aide/Home Attendant							20
51.0702	Hospital and Health Care Facilities Administration/Management							
51.3901	Licensed Practical/Vocational Nurse Training		67	78	87	89	35	81
51.0716	Medical Administrative/Executive Assistant and Medical Secretary	74	24		7	23	2	49
51.0713	Medical Insurance Coding Specialist/Coder		100		12		7	37
51.0714	Medical Insurance Specialist/Medical Biller	75						
51.0705	Medical Office Management/Administration			26	21			5
51.0907	Medical Radiologic Technology/Science - Radiation Therapist	14	1		20			30
51.0712	Medical Reception/Receptionist	52	18					10
51.0708	Medical Transcription/Transcriptionist	2	3					5
51.0801	Medical/Clinical Assistant	296	119	57	43	17	32	242
51.0711	Medical/Health Management and Clinical Assistant/Specialist							
51.1201	Medicine (MD)							
51.1599	Mental and Social Health Services and Allied Professions, Other	87	2				5	30
51.1508	Mental Health Counseling/Counselor							
51.3303	Naturopathic Medicine/Naturopathy (ND)							
51.0905	Nuclear Medical Technology/Technologist							
51.3802	Nursing Administration							
51.3902	Nursing Assistant/Aide and Patient Care Assistant/Aide	31	240	200	43	255	16	
51.2206	Occupational Health and Industrial Hygiene							
51.0803	Occupational Therapist Assistant							
51.2306	Occupational Therapy/Therapist	26						29
51.1801	Opticianry/Ophthalmic Dispensing Optician							
51.1802	Optometric Technician/Assistant							22
51.2307	Orthotist/Prosthetist							8
51.1901	Osteopathic Medicine/Osteopathy (DO)				0			
51.2001	Pharmacy (PharmD [USA], PharmD or BS/BPharm [Canada])					91		
51.0805	Pharmacy Technician/Assistant	55	31		9			81
51.1009	Phlebotomy Technician/Phlebotomist	103	38				27	21
51.0806	Physical Therapy Technician/Assistant							10
51.2308	Physical Therapy/Therapist	34						
51.0912	Physician Assistant							
51.1502	Psychiatric/Mental Health Services Technician	1						
51.2201	Public Health, General							
51.3811	Public Health/Community Nurse/Nursing							
51.0911	Radiologic Technology/Science - Radiographer		14	15			18	21
51.3801	Registered Nursing/Registered Nurse	333	180	109	62	584	49	331
51.2399	Rehabilitation and Therapeutic Professions, Other							
51.0908	Respiratory Care Therapy/Therapist	12						15
51.0812	Respiratory Therapy Technician/Assistant	1						
51.0203	Speech-Language Pathology/Pathologist							46
51.1501	Substance Abuse/Addiction Counseling		10	5	14		4	22
51.0909	Surgical Technology/Technologist				8		34	36
51.2401	Veterinary Medicine (DVM)					97		
51.0808	Veterinary/Animal Health Technology/Veterinary Assistant		1		12			30

HEALTH CARE OCCUPATION TITLE	Total Openings 2014-2019	2010 New Supply	Gap and Oversupply 2014-2019
Physicians and Surgeons, All	529	165	-364
Medical & Clinical Laboratory Technologists & Techs	309	76	-233
Healthcare Support Workers, All Other	222		-222
Registered Nurses	2,867	2,677	-190
Physical Therapists	203	33	-170
Health Technologists and Technicians, All Other	151	0	-151
Occupational Health and Safety Specialists/Technicians	130	11	-119
Radiation Therapists/Radiologic Technologists and Techs	204	133	-71
Chiropractors	64		-64
Physician Assistants	127	68	-59
Dentists (with all Specialists)	112	55	-57
Opticians, Dispensing	58	10	-48
Optometrists	51	10	-41
Dietitians and Nutritionists	71	33	-38
Dental Hygienists	223	190	-33
Dietetic Technicians	28	1	-27
Healthcare Practitioners and Technical Workers, All Other	26	0	-26
Speech-Language Pathologists	118	94	-24
Health Diagnosing and Treating Practitioners, All Other	24		-24
Occupational Therapists	95	76	-19
Psychiatric Aides	25	7	-18
Respiratory Therapists	92	78	-14
Medical Transcriptionists	111	98	-13
Pharmacists	224	213	-11
Nuclear Medicine Technologists	17	8	-9
Respiratory Therapy Technicians	13	6	-7
Recreational Therapists, and All Other Therapists	54	51	-3
Emergency Medical Technicians and Paramedics	131	132	1
Medical Equipment Preparers	67	68	1
Psychiatric Technicians	14	16	2
Occupational Therapist Assistants/Aides	21	23	2
Physical Therapist Assistants / Aides	125	130	5
Athletic Trainers	20	26	6
Cardiovascular Technologists and Technicians	28	39	11
Veterinary Technologists and Technicians / Veterinary Assistants and Laboratory Animal Caretakers	182	195	13
Orthotists and Prosthetists	7	20	13
Diagnostic Medical Sonographers	53	67	14

Veterinarians	70	95	25
Medical Records and Health Information Technicians	234	266	32
Surgical Technologists	116	150	34
Audiologists	13	147	134
Pharmacy Technicians & Aides	360	554	194
Home Health Aides/Nursing Aides, Orderlies, and Attendants	1506	1759	253
Dental Assistants	355	703	348
Licensed Practical and Licensed Vocational Nurses	514	929	415
Medical Assistants	436	2055	1619