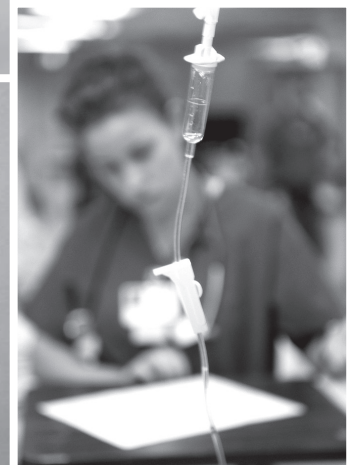
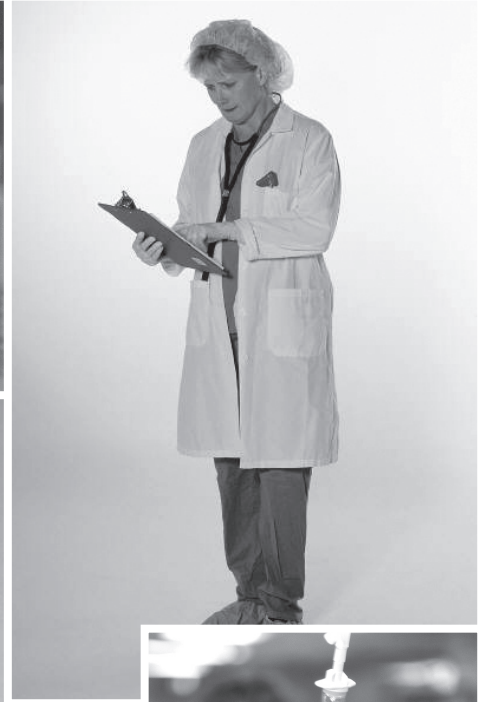


Nurses in Demand: Statement of the Problem



Research & Planning
Wyoming Department of Employment
<http://doe.state.wy.us/LMI>

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“Your Source for Wyoming Labor Market Information”

Executive Summary

With an increasingly aging population, Wyoming's health care needs are changing. Through a survey of nurses statewide, collection of various administrative data sources, and analysis of the findings, Research & Planning (R&P) has compiled an outline of the health care situation in Wyoming, both now and in the future. This document is a subsection of a larger study produced under contract by R&P to the Wyoming Healthcare Commission.

This document is only a summary; the full analysis of nursing demand in Wyoming is available as a PDF file at <http://doe.state.wy.us/LMI/nursing.htm>. Other information, including the nurses' survey form and review of the literature, is also available, and more information will continue to be added to the page.

As they are projected to unfold, the changing demographics of Wyoming's population will require different health care services. A survey of Wyoming hospital nurses found that more nurses worked in general medicine, general surgery, and obstetrics than in cardiac, respiratory, and cancer care. Many older residents require treatment in the latter specialties and often have longer hospital stays than younger patients.

Even if the current number of nurses increases as projected, Wyoming's health care providers will have difficulty keeping up with the demands of the growing and aging population.

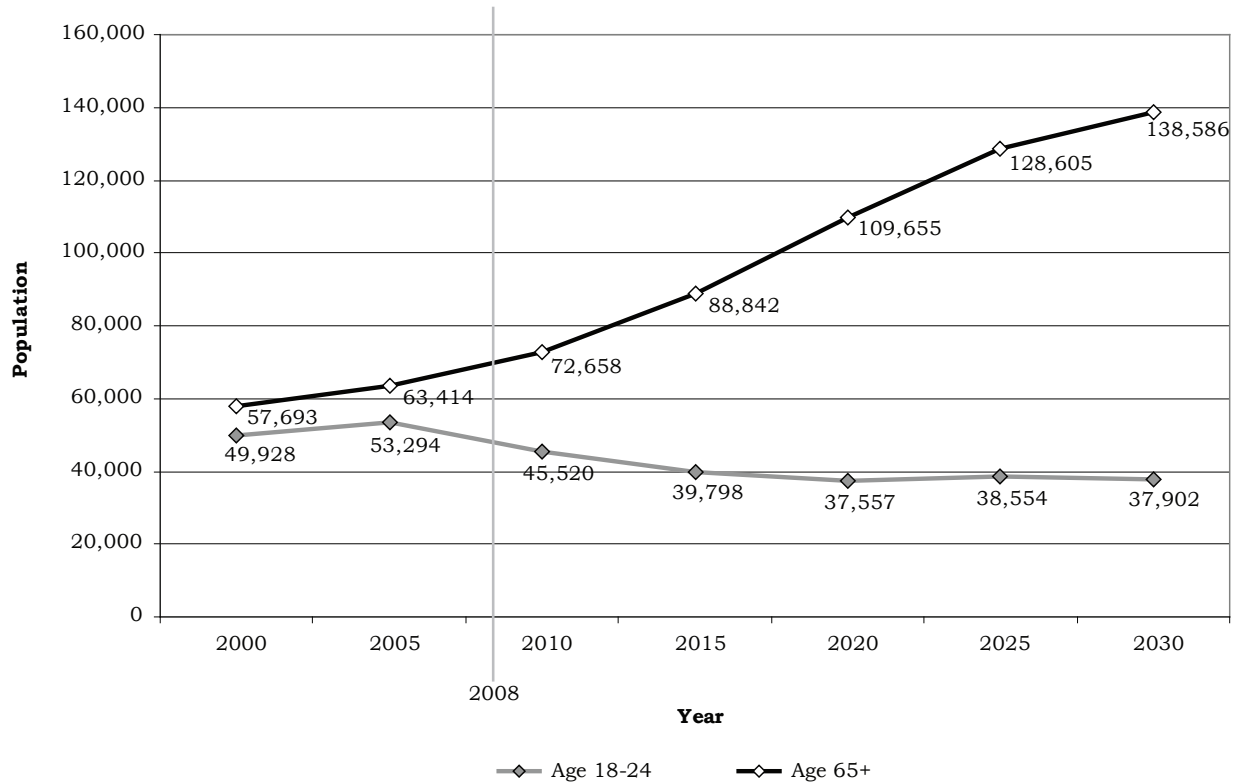
Nursing Demand Demographics

Expected demographic changes will increase the demand for nurses but also

alter the basic mix of skills that nurses need to successfully work in the health care industry. To illustrate:

1. As life expectancy has increased, the leading causes of death have shifted from infectious diseases and acute illnesses to chronic diseases and degenerative illnesses.
2. As people age, they are more likely to develop ailments requiring intensive or long-term treatment, which require different nursing skills than other illnesses.
3. The number of U.S. adults over age 65 is projected to more than double between 2000 and 2030. In 2000, there were an estimated 35 million individuals over 65. By 2030, the number is projected to grow to more than 70 million.
4. In 1985, individuals age 0 to 4 made up 10.0% of Wyoming's population; individuals age 65 and older made up 8.3%. By 2005, the percentage of individuals 0 to 4 years old declined to 6.1%, the lowest in the nation except for Hawaii, and the percentage of the population 65 and older rose to 12.2%. As shown in Figure 1 (see page 4), Wyoming's 65 and older population is projected to continue growing through 2030. At the same time, state residents age 18-24 are projected to decline. The projected percentage changes by age group in Wyoming's counties are shown in Map 1 (see page 5). The 55 and older group is projected to increase significantly in almost every county, while smaller increases or sometimes dramatic declines are expected in younger age groups.
5. At the same time that demand for their services is increasing and the working-age population is growing more slowly

Figure 1: Projected Population Growth for Wyoming, 2000-2030



Data source: Wyoming and County Population Projections by Age: 2003 to 2020. Wyoming Department of Administration and Information, Economic Analysis Division (<http://eadiv.state.wy.us>). Wenlin Liu. Internet release October 21, 2004.

than older populations, an increasing proportion of health care workers will be reaching traditional retirement age.

6. Technology advances, the possible emergence of new diseases, cost pressures, and changing population needs may alter future health care services usage patterns. The Chart (see page 6) outlines many factors related to Wyoming's aging population and increasing health-related needs.

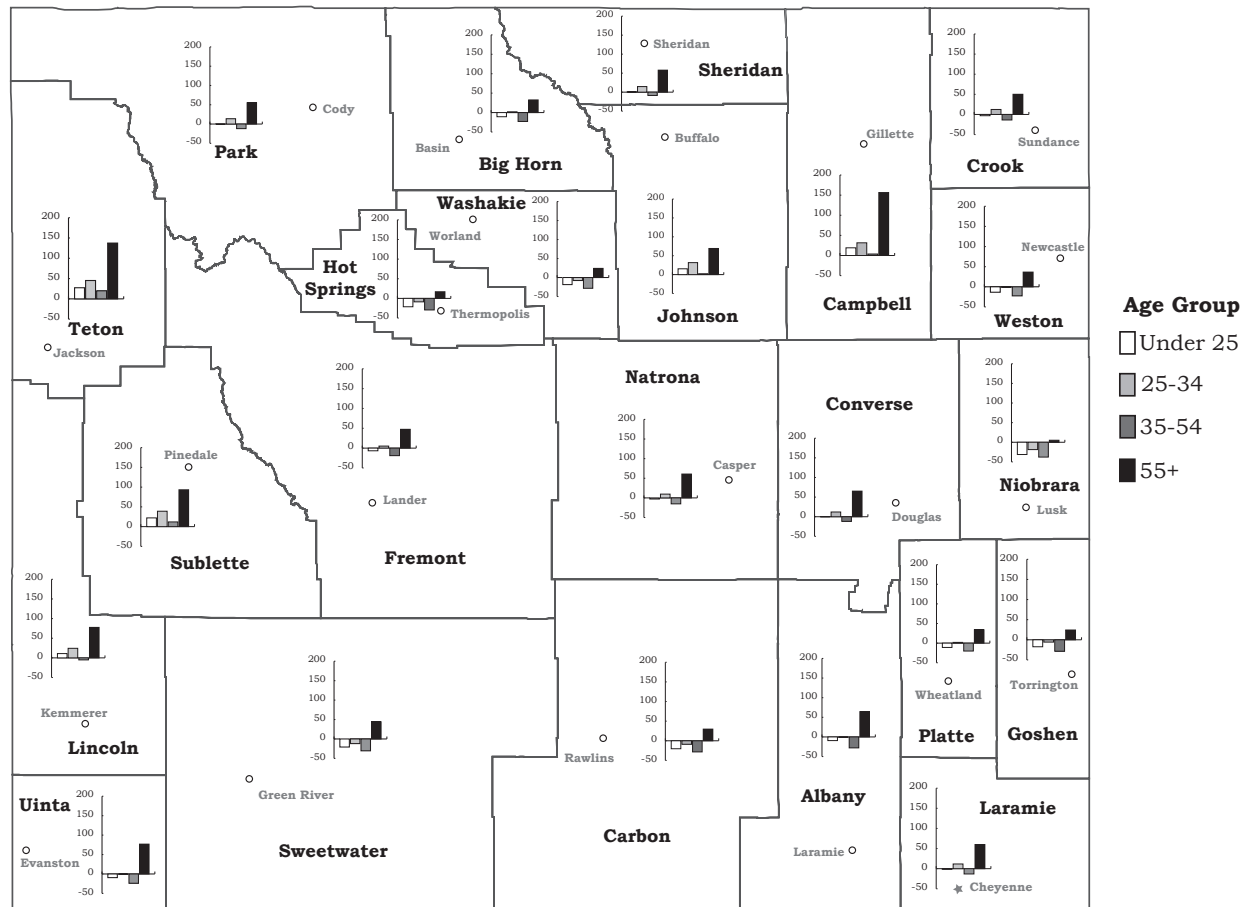
Projections of Registered Nurses

1. If the health care industry in Wyoming continues its current hiring practice with registered nurses, the projected additional

need for registered nurses in 2014 due to growth is 3,307 (103.9%) more than in 2006, equaling a total of 6,412. The current hiring practice consists of health care employers hiring more nurses per full-time equivalent (e.g., hiring five nurses in part-time shifts over a 24-hour period rather than hiring three full-time nurses) as part of a retention strategy, which lets nurses work the hours they choose and also drives up the need for nurses faster than either economic or population growth.

2. The projected additional nursing need would decrease to 2,935 if the proportion of registered nurses to jobs worked held constant in ambulatory health care services and hospitals.

Map 1: Projected Percentage Changes in Population by Wyoming County and Age Group, 2000 to 2020



Source: Wyoming Department of Administration and Information, Economic Analysis Division. (2004, October 21). *Wyoming and county population projections by age, 2003-2020*. Retrieved October 10, 2007, from http://eadiv.state.wy.us/pop/agsx00_20.htm

3. In addition, the greatest challenge will be replacing existing nurses who retire, quit, or are terminated. Figure 2 (see page 7) shows the projections of registered nurses working in hospitals needed from 2004 to 2014, excluding replacements and vacancies. As in the health care industry in general, hospitals are projected to require more registered nurses in the years to come, even if policy changes balance the number of jobs for registered nurses and other health care workers.

4. The impact of increased nursing demand is expected to be most acute in

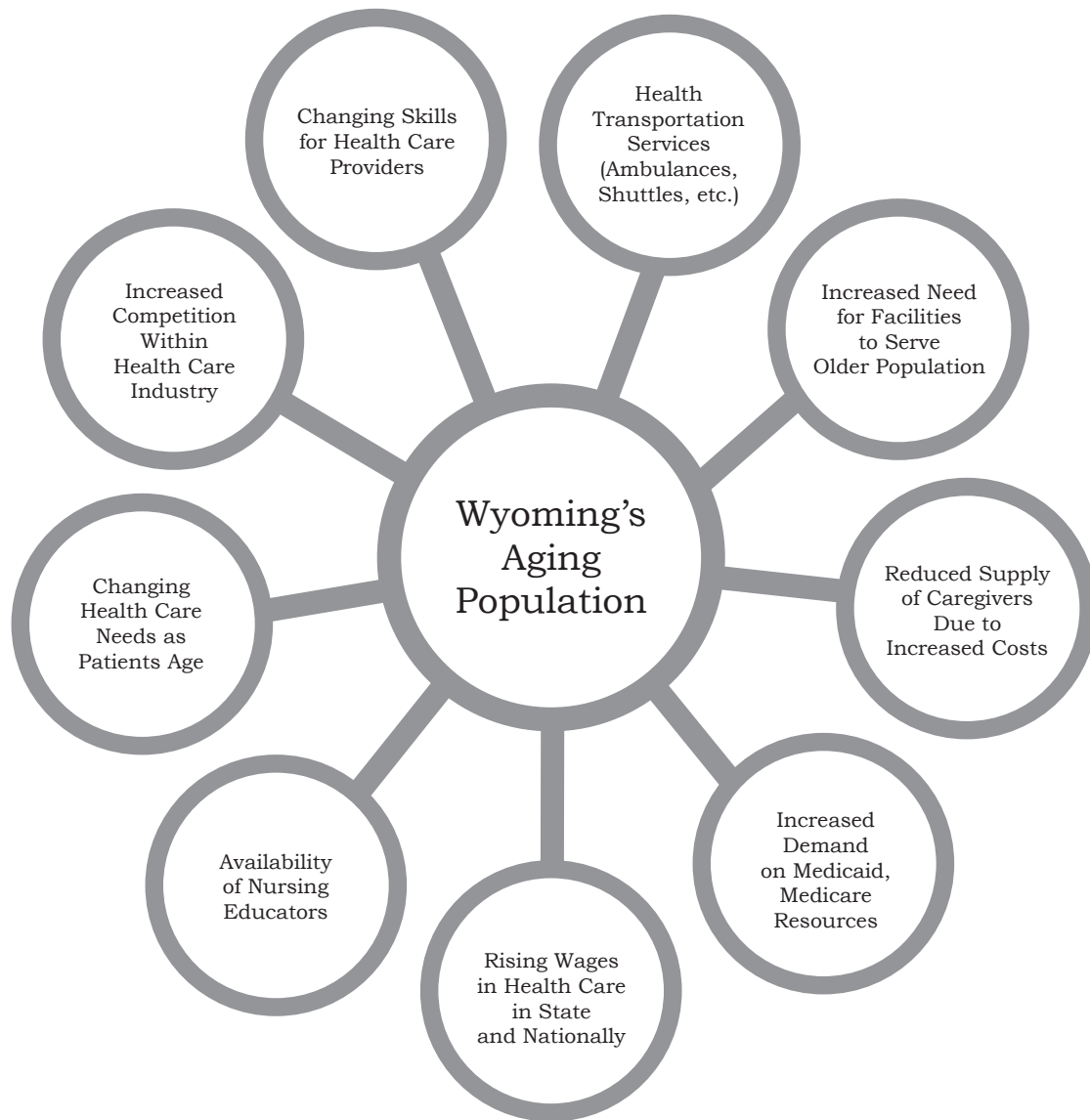
smaller facilities, which have fewer resources to recruit and hire additional workers.

5. A note on methodology: Two factors were used to forecast demand for registered nurses:

- Industry employment growth due to increased demand for health care services.
- Replacement of nurses who retire, quit, or are terminated.

6. Nurse demand projections are based on the trend of registered nurses as a proportion of total industry jobs worked and historical attrition rates.

Chart: Wyoming's Aging Population and Effects Related to Health Care



Health Care Employment and Wages in Wyoming, 2000 to 2007

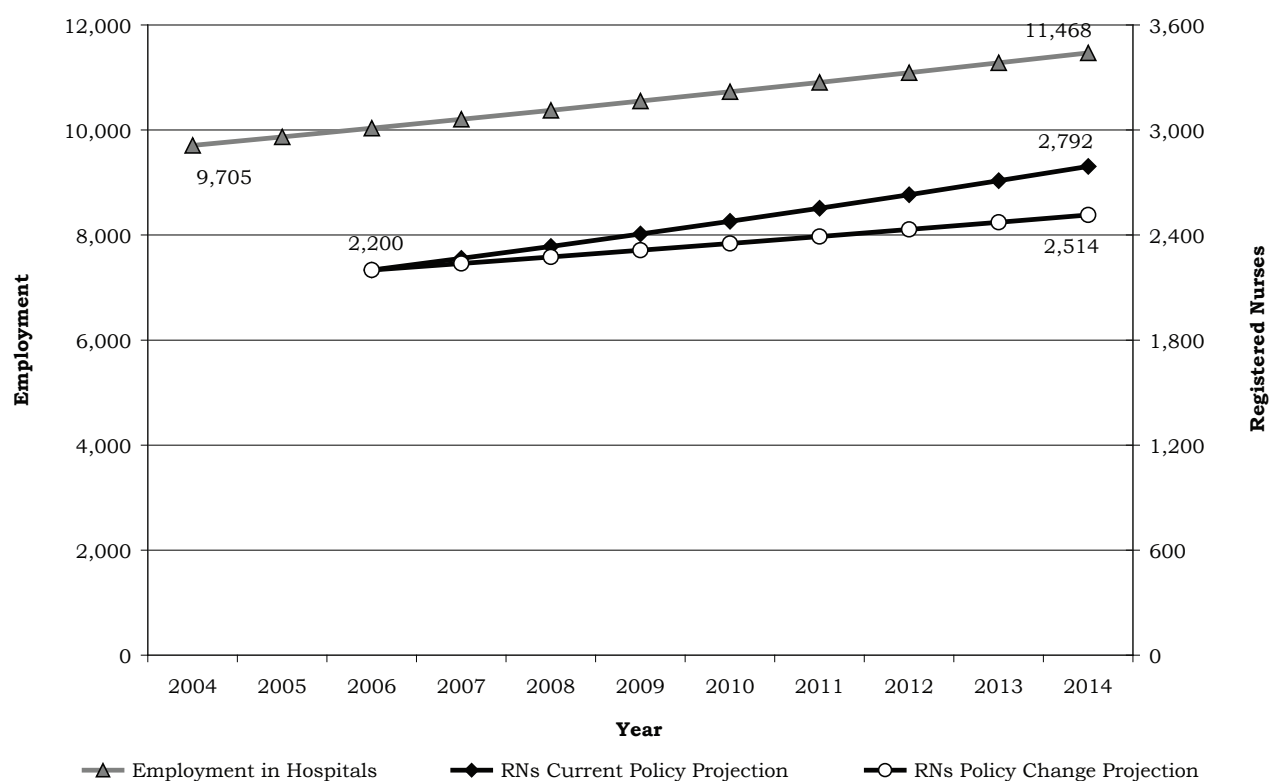
As demographic and other factors impinge upon the population, the structure of the health care industry will likely respond. For example:

1. Employment and wages in the

health care sector grew slightly faster than for health care and all industries combined. As of second quarter 2007, health care comprised 5.5% (15,268 jobs) of all industry employment in Wyoming.

2. Health care industries that serve older populations increased in number or expanded their employment.

Figure 2: Projections of Registered Nurses Working in Hospitals, 2004-2014 (Excludes Vacancies or Replacement Need)



3. Some industries in the health care sector saw a decrease in employment per establishment, suggesting they had trouble filling positions.

4. The largest percentage increases in the number of establishments were seen in continuing care retirement communities (350.0%, or 7), freestanding ambulatory surgical & emergency centers (220.0%, or 11), and offices of all other miscellaneous health practitioners (208.3%, or 25).

5. Some health care industries had decreasing average weekly wages, indicating that some jobs may have been replaced with lower-paying support occupations such as certified nursing assistants. Figure 3 (see page 8) shows

the change in average weekly wages in health care industries from 2000 to 2007.

6. Average weekly wages in offices of physicians had an above-average increase (71.5%), suggesting that these establishments hired higher-paid employees, such as physicians, than other establishments.

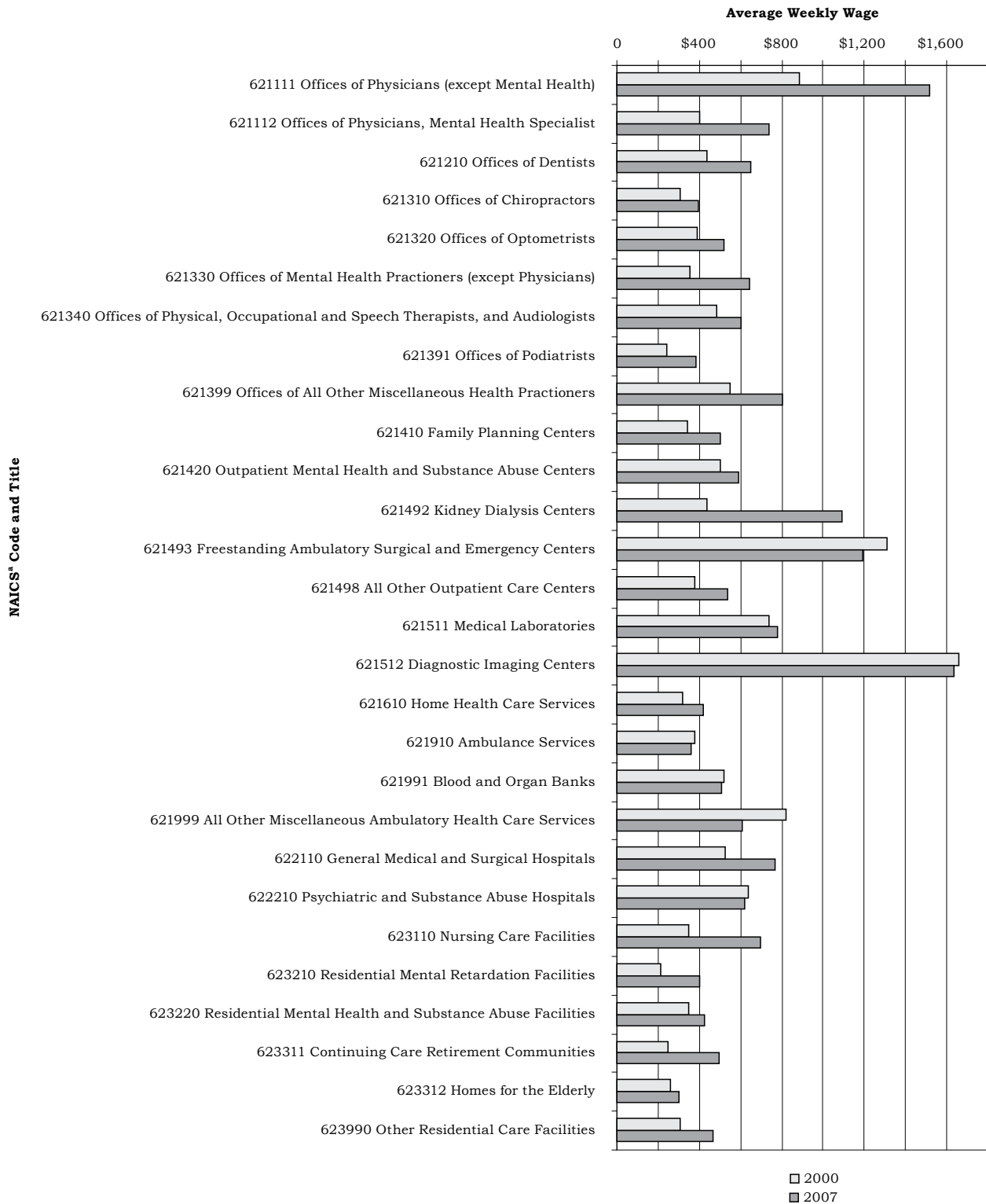
7. Offices of physicians grew both in number and employment size.

Economic-Demographic Interaction in Health Care

Uneven current and projected population growth in Wyoming's counties

Text continued on page 9

Figure 3: Average Weekly Wage by NAICS^a Code and Title in Private Health Care-Related Firms in Wyoming in 2000 and 2007



^aNorth American Industry Classification System.

Text continued from page 7

will mean uneven strains on the existing health care delivery system:

1. Between 2000 and 2007, health care growth in Wyoming's counties and regions was associated with overall population growth.
2. Population growth in outlying counties was just as likely to be associated with an increased number of health care establishments as growth in the regional centers.
3. In regions with rapid growth, the outlying counties showed similar or even higher levels of health care-related growth than the county with the largest population.
4. While population estimates for residents over the age of 75 in some regions appeared to be related to the number of nursing & residential care firms, the trend did not hold true for all areas.
5. Employer-provided health care insurance was most likely to be available to residents of the counties with the largest population. Projected population changes for Wyoming counties from 2003 to 2020 are shown in Map 2 (see page 10). The counties with the greatest projected percentage increases are Sublette (14.5%), Teton (13.4%), and Campbell (12.1%). The county with the greatest projected percentage decrease is Niobrara (-10.0%).

Age Group Comparisons in Hospital Discharge Data

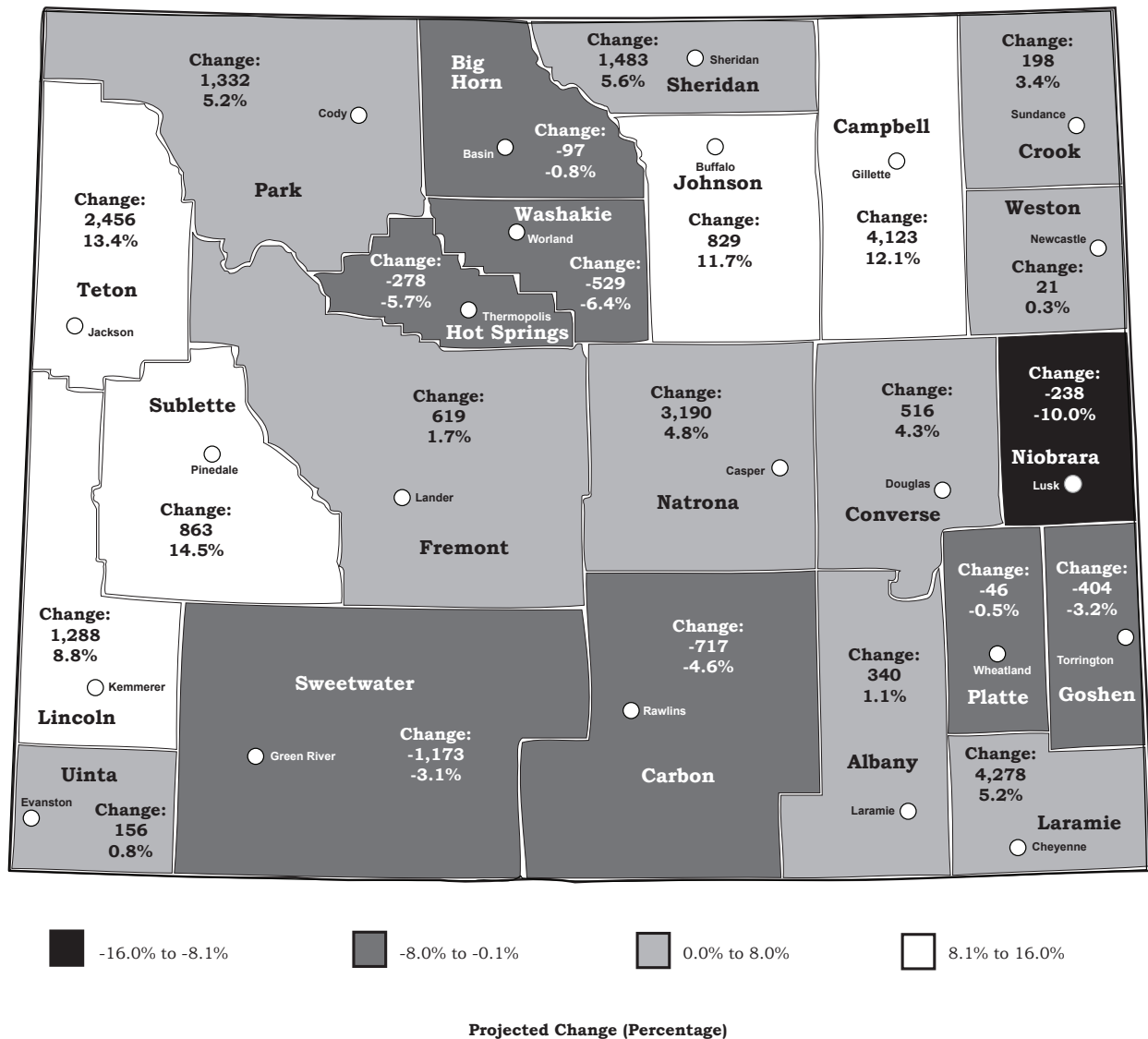
An examination of hospital discharge

data from July 1, 2005, through December 31, 2005, found that:

1. Younger patients were more likely to be hospitalized related to childbirth and childhood illnesses, while older patients were more often admitted for chronic illnesses such as hypertension and heart disease.
2. Younger patients more often received care from hospital obstetric and neonatal care units and older patients more often received treatment from cardiac and respiratory care units.
3. A survey of Wyoming hospital nurses showed that many nurses worked in general medicine, general surgery, and obstetrics, but far fewer worked in the specialties that will be needed by an aging population, such as cardiac, respiratory, and cancer care.
4. Larger hospitals such as Wyoming Medical Center had a greater proportion of longer-than-average hospital stays, perhaps because they typically have more advanced technology and the capacity to treat cases with greater acuity and offer more services.
5. Older patients were more likely to be hospitalized for a longer-than-average amount of time compared to younger patients.
6. Counties with older populations, such as Hot Springs and Sheridan, had a larger proportion of older patients with longer-than-average hospital stays.

Figure 4 (see page 11) shows the top 10 major diagnostic codes for patients under age 55, and Figure 5 (see page 11)

Map 2: Projected Percentage Change in Population by Wyoming County, 2003 to 2020

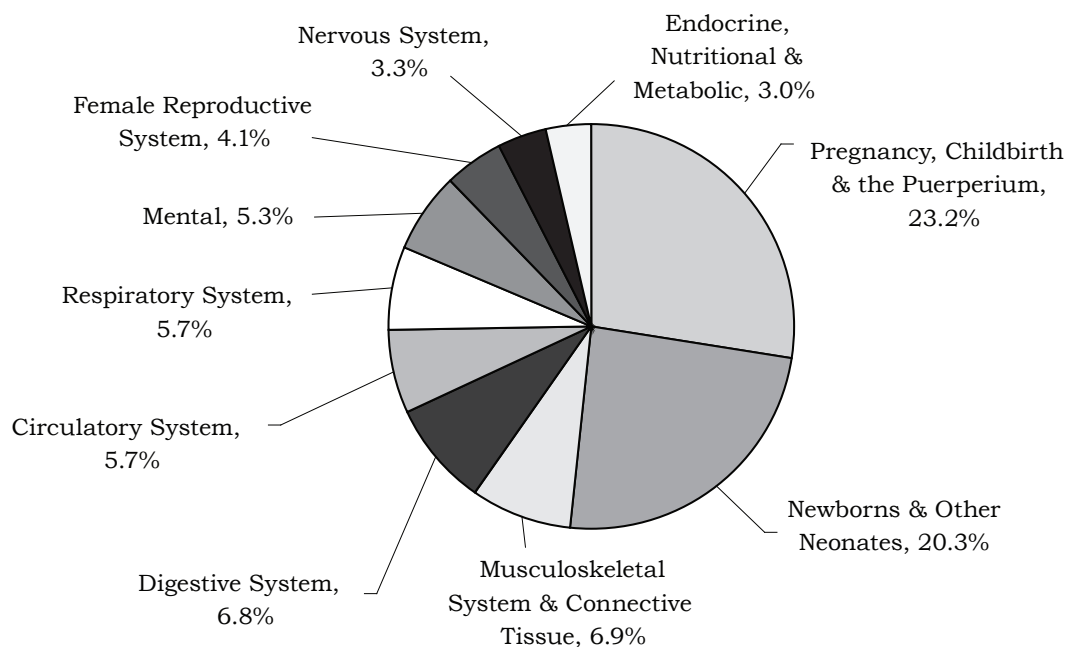


shows the major codes for patients age 55 and older. More than half of those under 55 received pregnancy, childbirth, or newborn care. Those 55 and older more often received care relating to the circulatory system, musculoskeletal system, and respiratory system.

Conclusion

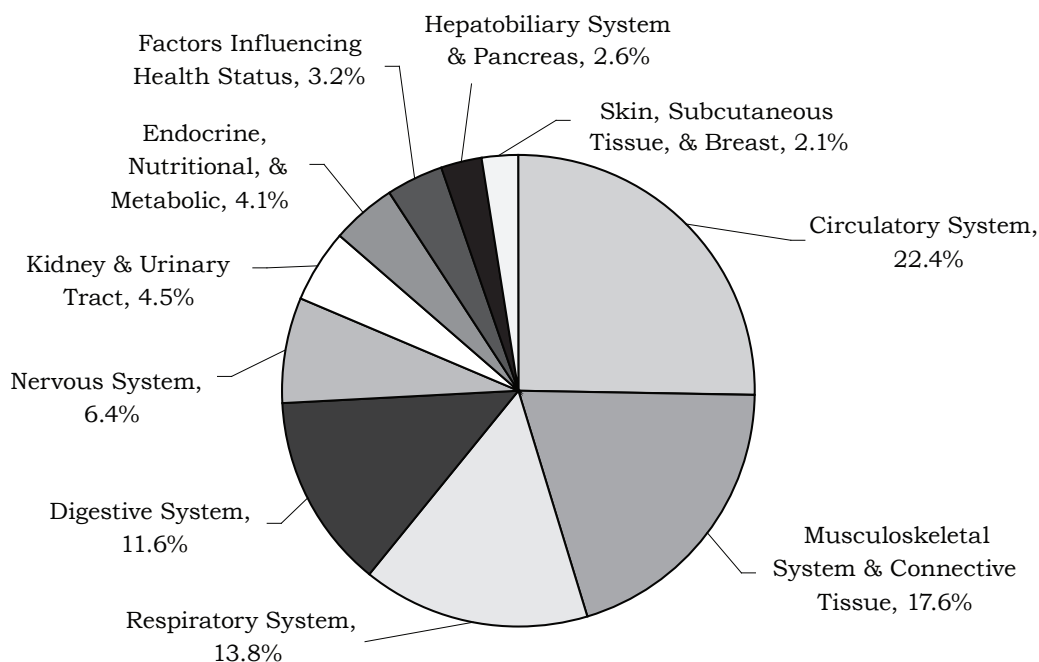
With the projected changes in Wyoming's population and corresponding projections for needed health care services, the projected demand for nurses is quite likely to exceed the expected supply, as well as create a growing demand for skills associated with the needs of an aging population.

Figure 4: Top 10 Major Diagnostic Codes, Under Age 55, July 1, 2005 – December 31, 2005



Note: Percentages do not total 100% because only the top 10 major diagnostic codes are shown.

Figure 5: Top 10 Major Diagnostic Codes, Age 55 and Older, July 1, 2005 – December 31, 2005



Note: Percentages do not total 100% because only the top 10 major diagnostic codes are shown.

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