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Demographic, Education, and Practice Characteristics of Advanced Registered Nurse Practitioners in Washington State: Results of a 2008 Survey

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by

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Demographic, Education, and Practice Characteristics of Advanced Registered Nurse Practitioners in Washington State: Results of a 2008 Survey

ABSTRACT

BACKGROUND

Using data from a 2008 survey of licensed advanced registered nurse practitioners (ARNPs) in Washington, this report describes the background and practice characteristics of ARNPs who live and practice in-state.

RESULTS

Among 4,512 Washington ARNP licensees, 80% resided and 92% practiced in-state. Their average age was nearly 50 years old, fewer than 10% were non-white or Hispanic, and nearly 13% were male. More than half (55%) were in primary care practice areas. Primary areas of practice included family practice (29%), adult practice (14%), psych/mental health (11%), women's health (10%), nurse anesthetist (9%), nurse midwife (7%) and pediatrics (6%). Two thirds worked in ambulatory/outpatient settings and 65% worked full time. Nearly a quarter worked in practices without physicians. Among the 87% whose highest nursing degree was the master's degree, 63% obtained the degree in Washington. Practicing ARNPs have worked 13 years on average as an ARNP, with 11 of those years in-state. Fourteen percent said they intended to retire within the next five years.

DISCUSSION

Action is needed to compensate for the high rate at which ARNPs soon will be retiring from the workforce. Encouraging RNs to become ARNPs at a younger age will help to stabilize the workforce by producing more ARNPs who will practice for a long period of time. The relatively high percentage of ARNPs who practice without physicians highlights the importance of Washington's autonomous practice laws to expanding access to health care in the state. Because ARNPs make significant contributions to health care (especially primary care) in the state, the high likelihood that workforce shortages will continue into the future, and because of the finding that two-thirds of the state's ARNPs have spent their entire ARNP careers in Washington, there is considerable incentive to support and expand the state's ARNP education programs.

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BACKGROUND

Advanced registered nurse practitioners (ARNPs) play a key role in providing care to citizens of Washington State. The contributions of these providers, more than 4,500 in 2008, are critical to consider in health care planning. ARNPs practice as certified nurse midwives who provide obstetric care, nurse anesthetists who provide anesthesia care, or nurse practitioners who provide both primary and specialty care. ARNPs work in both urban and rural areas and most care for underserved and vulnerable populations.

Washington State has been fortunate to have several studies of the state's ARNP workforce since 1998. According to one study, ARNPs in 1998 comprised 9.4% of the generalist provider FTEs and provided approximately 10% of generalist outpatient care in the state (Larson et al., 2003). A more recent national study showed that ARNPs comprise approximately 22% of the U.S. primary care medical workforce (USGAO, 2008). Andrilla and colleagues (2007) surveyed Washington's ARNPs in 2003 and described their demographic, education and practice characteristics, finding that more ARNPs in isolated/small rural areas work in primary care (77%) and treat more state-assisted and indigent patients than NPs working in urban or large rural areas. Using these 2003 survey data, Kaplan and colleagues (2006, 2007) examined barriers to autonomous practice among ARNPs and described the state's nurse anesthetist workforce. Another survey in 2006 was used to compare ARNP characteristics and practice patterns in rural and urban settings of Washington, and showed that rural providers were more likely to be certified in family practice, provide primary care, and care for more patients per week than urban ARNPs (Kaplan et al., 2009).

This report presents results from a 2008 survey of Washington's licensed ARNPs. The Washington

Center for Nursing, the statewide nursing resource and workforce center in Washington, engaged the University of Washington Center for Health Workforce Studies to analyze these survey data. The 2008 survey collected data on the demographic, education, and practice characteristics of the ARNP workforce. Analyses determined how many of the licensed ARNPs were actively working in advanced practice, in what specialties, whether they worked full or part time, where they worked, what level of education they had attained, and when they were likely to retire. In addition, data on race, ethnicity, and gender were used to assess the extent to which the workforce reflects the populations it serves, and provide insights as to whether education and recruitment programs are reaching minority and non-traditional populations.

METHODS

DATA SOURCE

The data for this report are from the 2008 survey of licensed ARNPs conducted by the Washington State Department of Health and the Washington Workforce Training and Education Coordinating Board. The survey was initiated in 2007 through a directive from the Washington State Legislature to collect race/ethnicity, specialty, practice and education information on the licensed health professionals in the state. Under this legislation, each type of licensed professional would be surveyed once every two years. The survey procedures involved contacting all licensees for a given profession with a letter offering Web access to the questionnaire. The two-page questionnaire (see Appendix A) was tailored to reflect the practice and education characteristics of each profession. In order to increase response rates in a cost-effective manner, a 33% random sample of the profession was selected to receive a paper copy of the questionnaire and one additional follow-up mailing, if necessary. These procedures were used by the Washington Department of Health (through its survey contractor at Washington State University) for the ARNP survey. Due to an error in the web response system, a subset of 558 ARNPs who responded to the study online were re-contacted via mail to clarify their response to the single question regarding their work setting. Of those contacted, 370 (66%) responded to the follow-up mailing. From the 4,512 active ARNP licenses in Spring 2008, the survey yielded a total of 1,230 (27.3%) responses from the overall ARNP population, of which 791 responses (52.6%) were from the one-third random sample (see Appendix B, Table B-1).

DETERMINING RESIDENCE AND PRACTICE LOCATION

In this report, most findings are presented for ARNPs residing in Washington and/or practicing in Washington. Determination of whether or not an ARNP resided in Washington was made using the state and ZIP code fields of the ARNP license record: the ARNP license address was presumed to be the residence location of the ARNP. The ZIP codes of primary and secondary practice locations from the survey responses were used to determine practice location. Available lists of ZIP codes by state were used to assign ZIP codes to Washington or other states. For sub-state analyses these ZIP codes were used to assign ARNPs to counties, and counties were subsequently assigned to a workforce development area (WDA). WDAs are sub-state regions composed of one or more counties that receive state and federal assistance for workforce planning and development programs. The residence and practice ZIP codes also were used to determine rural-urban status (see Regional and Sub-State Analyses section below). It should be noted that the analysis population initially was limited to ARNPs residing in Washington in order to calculate and assign response weights (see Data Weighting section below). Among those respondents residing in Washington, ARNPs practicing in Washington were identified. As a result, ARNPs who live outside of Washington but practice in Washington are not represented in the "practicing in Washington" results.

REGIONAL AND SUB-STATE ANALYSES

Survey response rates were calculated for the 12 WDAs of the state. WDA was assigned by identifying the county in which the ARNP's license mailing address was located. Because of the small number of ARNPs and responses in many of the WDAs, survey results by WDA are limited to ARNP distribution and percent practicing (see Table 2). Response rates by WDA are shown in Table B-2.

Selected survey results are presented separately for eastern and western Washington. Eastern Washington is comprised of the following counties occurring east of the north-south Cascade mountain range: Adams, Asotin, Benton. Chelan, Columbia, Douglas, Ferry, Franklin, Garfield, Grant, Kittitas, Klickitat, Lincoln, Okanogan, Pend Oreille, Skamania, Spokane, Stevens, Walla Walla, Whitman, and Yakima. Western Washington counties (west of the Cascades) included Clallam, Clark, Cowlitz, Grays Harbor, Island, Jefferson, King, Kitsap, Lewis, Mason, Pacific, Pierce, Skagit, San Juan, Snohomish, Thurston, Wahkiakum, and Whatcom.

Selected results are presented for rural and urban ARNPs. Rural/urban status was determined by the ZIP code of the ARNP's primary practice location. The ZIP code version of the Rural-Urban Commuting Area

(RUCA) taxonomy, version 2.0, was used to classify practice ZIP codes into one of 33 RUCA categories and the associated two groupings of those RUCA categories that classify a location as either rural or urban (RHRC, 2009). RUCAs take into account not only an area's population and location, but also account for the ZIP code population's work-commuting patterns in relationship to surrounding cities and towns.

DATA WEIGHTING

To address possible response bias, we compared ARNP survey respondents to the total licensed ARNP population on several factors for which data were available for all licensed ARNPs from state licensing records: age, sex, in-Washington residence, and WDA of residence. Additionally, respondents from the random sample who received as many as three survey contact attempts were compared with those respondents who were in the group with only a single contact. The age, sex and residence characteristics of these two respondent groups were compared and they were not statistically different. The age distribution of the survey respondents, however, was significantly different than the total licensed population: a larger proportion of older nurses responded to the survey (see Table B-2). Without adjustments to account for this age bias among respondents, survey results would reflect the views and practice patterns of older nurses disproportionately and ARNPs' characteristics associated with age (e.g., work hours) would be less likely to accurately reflect the licensed ARNP population. As a result, response weights (the number of ARNPs each response represented) were calculated for ARNPs of each year of age as represented by the total licensed ARNP population living in Washington State. Because of the small number of nurses age 70 and over, these responses were pooled into multi-year categories (e.g., 70-72 years) and a single weight was calculated for each group. The weight calculated for each ARNP age year (or group of years) was then applied to the survey responses. The average weight across all ARNPs living in Washington was 3.44, the minimum was 1.00 (causing the response to be counted at face value) and the maximum was 7.00 (causing the response to be counted as 7 responses). Tables B-3 and B-4 show the characteristics of survey respondents compared with the overall licensed ARNP population.

ASSIGNMENT OF MISSING VALUES

When survey respondents answered part of a question and the response to the remainder of the question could be inferred, the missing value was assigned. For example, if a respondent responded with a "yes" indicating they held a bachelor's degree in nursing, but did not answer "no" to other degree options, the blank responses were assumed to be "no." Similarly, if a respondent reported direct patient hours or clinical administration hours but did not report hours for other activities such as teaching or research these missing values were considered to be zero. This was also true if a respondent did not report their total weekly hours but provided hours spent in each individual activity, in which case the sum of the individually reported hours was used as the weekly total hours. As a result of these assumptions and the fact that respondents were allowed to answer only parts of questions, the number of respondents (the "n") varies across survey questions.

RESULTS

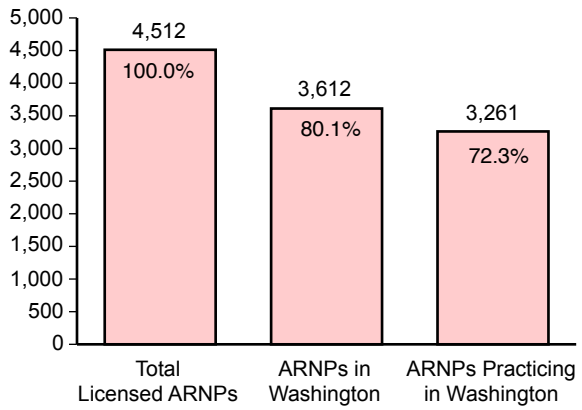
ARNPS WITH WASHINGTON STATE LICENSES

Of the 4,512 licensed ARNPs in Washington, 3,612 (80.1%) were estimated to have resided in Washington State in 2008. The remaining 19.9% of Washington ARNP licensees had addresses outside of Washington: 6.3% were in Oregon and 1.8% were in Idaho (states neighboring Washington) (see Table 1). There were 531 licensed ARNPs with addresses outside of Washington, Idaho, and Oregon. This is 11.8% of ARNPs licensed in Washington. As shown in Figure 1, among ARNPs residing in Washington, an estimated 3,261 (72.3% of all licensed ARNPs or 91.9% of those in Washington) indicated that they were currently practicing in Washington State (see Table 2). Unless otherwise noted, most of the results described in this report are for ARNPs who reside and practice in Washington.

DEMOGRAPHICS

The average age of practicing ARNPs in Washington was 49.6 years, and 37.3% were age 55 or older (see Table 3). ARNPs in their 20s and 30s comprised 19.6% of the workforce. Male ARNPs comprised 12.7% of the state's ARNP population, and 13.1% of

Figure 1: ARNPs with Washington Licenses, 2008



practicing ARNPs in the state. Fewer than 10% of the ARNPs were non-white, and 2.3% were Hispanic (see Figure 2).

PRIMARY AREAS OF PRACTICE

Respondents were asked to select their "primary area of practice" from among a list. Area of practice rather than area of certification was selected for inclusion in the survey because it is more specific than certification and enhances our understanding of the type of care provided by ARNPs. In particular, those certified as family nurse practitioners and adult nurse practitioners may work in a specialized areas permitted by their license, such women's health or cardiology. Family practice was the most commonly reported area of practice (29.0%), followed by adult practice (14.1%), pysch/mental health practice (10.5%), and women's health (9.5%) (see Figure 3). Nurse anesthetists made up 9.4% and nurse midwives 6.7% of the practicing ARNP workforce in Washington. More than half of practicing ARNPs (55.4%) said their primary area of practice was one usually considered to be primary care (family, adult, women's health, or geriatrics) (see Table 4).

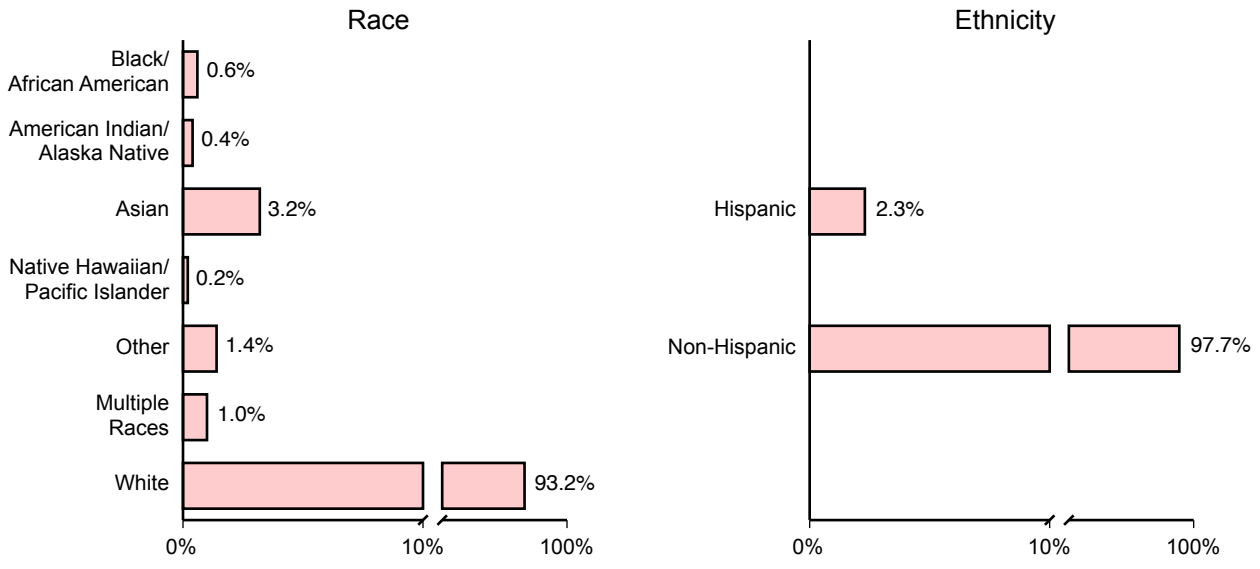
Table 5 shows the age, sex, years of practice, education and work-status of Washington's ARNPs by area of practice. ARNPs who worked in neonatal and pediatric practices were slightly younger, on average, than other ARNPs: 43.9 years and 47.8 years respectively. Geriatrics was the only practice area where the average ARNP age was over 55 years (57.5 years). Although the overall percentage of male respondents practicing in Washington was 13.1%, almost half of Washington's nurse anesthetists were male (46.5%). ARNPs who reported working in acute care had the shortest work tenure with an average of 8.1 years. ARNPs in school/college health reported the longest average years: 19.5 in ARNP practice. Nurse anesthetists and ARNPs working in women's health and geriatrics had the lowest percentage of master's or doctoral degree trained providers (49.6%, 62.9% and 66.0% respectively). In the remaining areas of practice, with the exception of school/college health and psych/mental health ARNPs, more than 90% of Washington's practicing ARNPs held a master's or doctoral degree in nursing. The areas of practice with the highest percentage of ARNPs working full time (35 or more hours per week) were neonatal (82.6%), other (78.9%), acute care (78.2%), nurse anesthetist (72.2%), and adult (70.2%).

WORK CHARACTERISTICS

Work Setting: Among practicing ARNPs in Washington, two-thirds (67.0%) worked in ambulatory care/outpatient clinic settings and 13.5% worked in inpatient settings (see Figure 4). Table 6 shows the distribution of ARNPs by work setting for the state overall.

The work setting of ARNPs by their primary area of practice is shown in Table 7. Some areas of practice are clearly linked to inpatient or ambulatory care settings, such as neonatal (100% worked in hospital inpatient settings) and women's health (100% worked in ambulatory care or other non-inpatient settings). More than half (57.7%) of nurse anesthetists worked in hospital inpatient settings, and 41.2% worked in

Figure 2: Race and Ethnicity of ARNPs in Washington



ambulatory care/outpatient clinic settings, presumably outpatient surgery clinics. These two settings accounted for 98.9% of nurse anesthetists work locations.

As shown in Table 8, ARNPs who practiced in hospital emergency settings had the youngest average age (43.6 years). ARNPs in nursing home/extended care settings and health departments had the oldest average age (55.4 and 54.2 years, respectively). The settings with the largest percentage of ARNPs working full time were education (82.6%) and institutional settings (81.1%) and the lowest rates of full time work were for ARNPs working in hospital emergency (54.1%) and health department (43.4%) settings. ARNPs working in education/research and hospital emergency

Figure 3: Primary Area of Practice of ARNPs Practicing in Washington

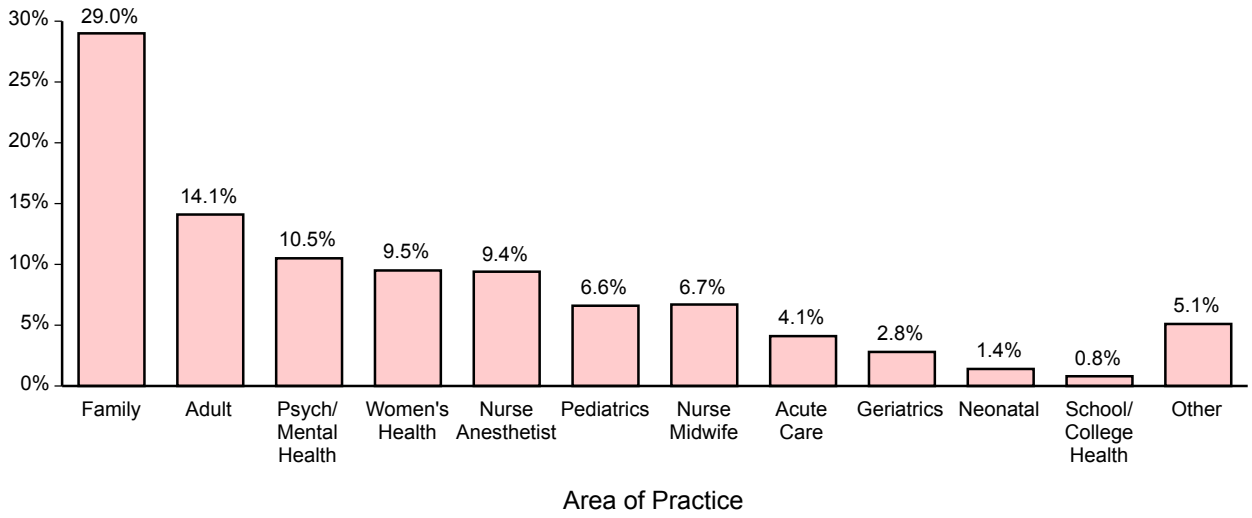
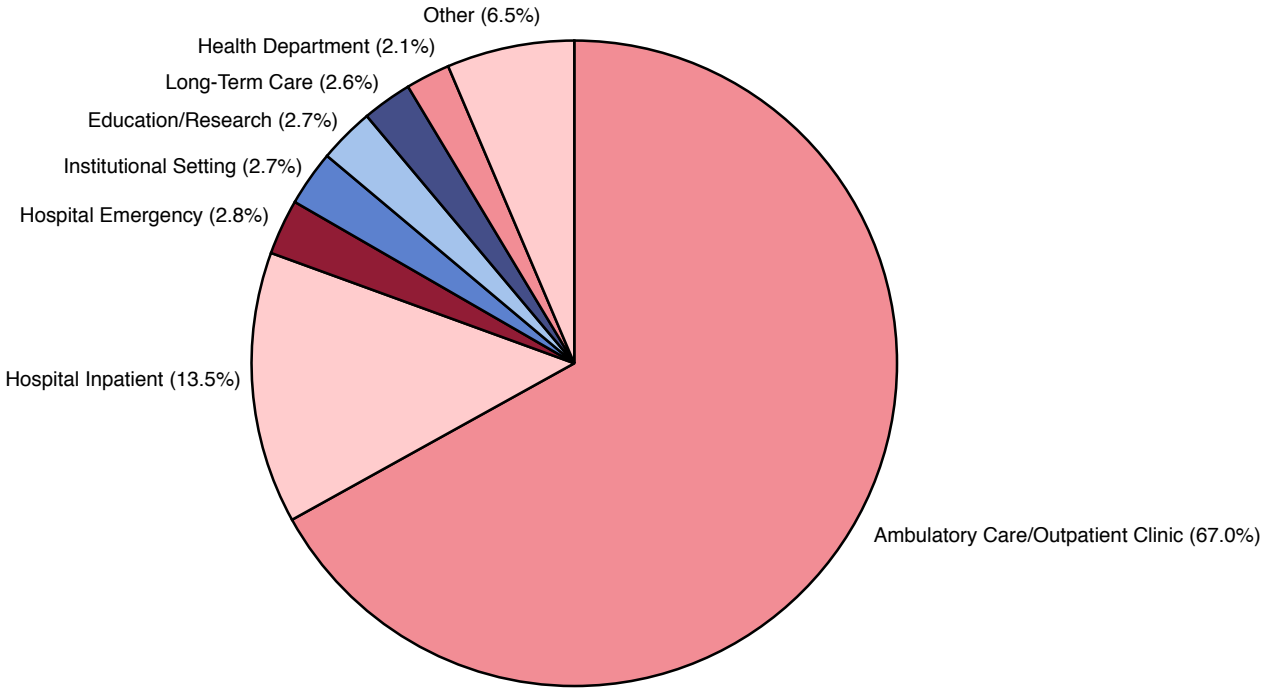


Figure 4: Work Setting of ARNPs Practicing in Washington



settings had the highest rates of education at the master's or doctorate in nursing level (100% each). One quarter (25.3%) of ARNPs working in hospital inpatient settings were male, likely because of the large percentage of nurse anesthetists who are male, while only 4.8% of ARNPs working in nursing home/long-term care settings were male.

Practice Arrangements: Overall, 14.5% of ARNPs worked in independent practice, 7.7% worked in a group that included no physician, 64.1% worked in a group with a physician, and 13.8% worked in some other arrangement (see Figure 5 and Table 9). Higher percentages of psych/mental health ARNPs (48.6%) and nurse anesthetists (32.7%) were in independent practice than ARNPs in other areas of practice. Higher percentages of nurse midwives (29.1%) and ARNPs in school/college health areas (17.3%) worked in group practices with no physicians than did ARNPs in other areas of practice.

Professional Hours: Among all ARNPs who practiced in Washington State, 65.4% worked full time (35 hours per week or more) (see Table 10). Full time ARNPs had a slightly younger average age than part time ARNPs (48.9 compared with 50.8 years).

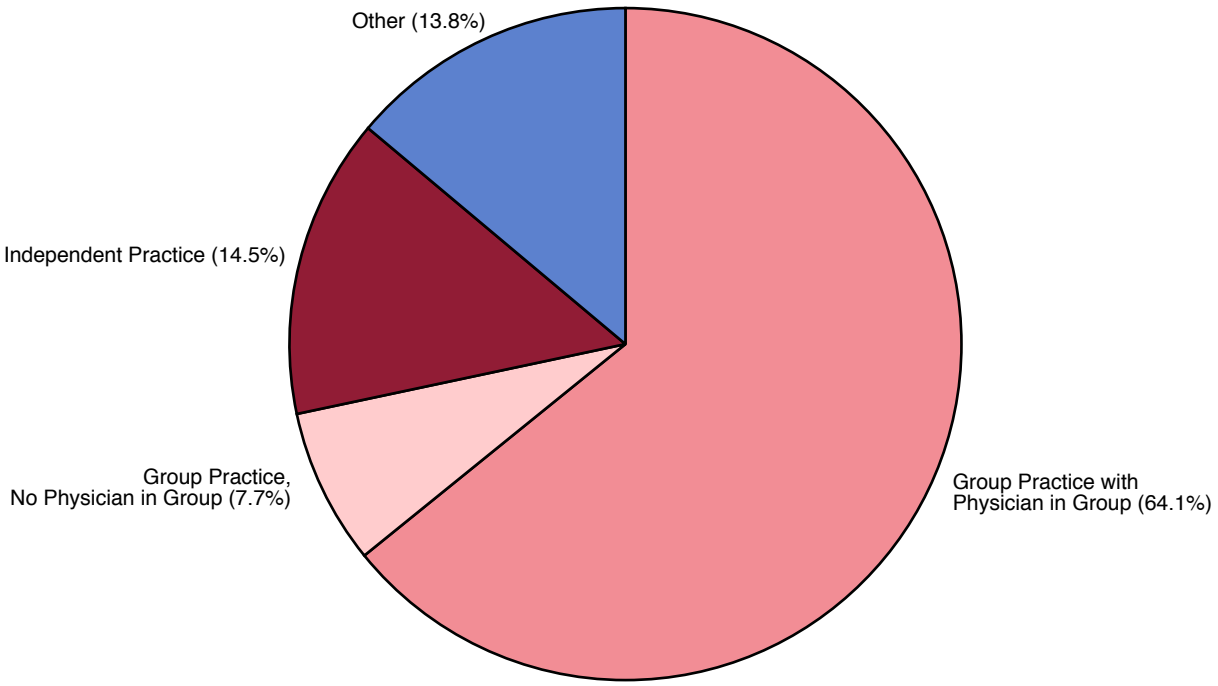
When examined by primary area of practice, ARNPs in neonatal and acute care areas and nurse midwives worked the highest number of hours per week (45.7, 41.9, and 41.4 hours, respectively) (see Table 11). Average direct patient care hours did not vary dramatically among the areas of practice: nurse anesthetists, nurse midwives, and ARNPs in neonatal, acute care and adult practice worked on average between 31 and 35 hours in direct patient care per week. ARNPs in geriatrics, school/college health and pediatrics worked an average of 23-25 hours per week in direct patient care.

Some differences across work settings emerged when delineating the types of activities in which ARNPs participated (see Table 12). Overall, ARNPs worked an average of 37.7 hours per week, with 29.7 average hours in direct patient care. ARNPs working in education/research reported the longest average weeks (43.5 hours), followed by hospital inpatient (42.0 hours). ARNPs in hospital inpatient settings provided the most direct patient care per week (34.0 hours), while in institutional settings ARNPs spent the largest number of hours per week in administration of clinical practice (5.5 hours), followed by long-term care (5.3 hours) and hospital inpatient (4.6 hours). Figure 6 shows the average weekly hours worked overall and in direct patient care by ARNP work setting.

Work and Residence Locations: Nearly 72% of ARNPs practicing in Washington worked in one location, 12.3% worked in two locations, and 15.8% worked in more than two locations (see Table 13).

Table 14 shows the percentage of ARNPs (among those who reside in Washington) who practiced in the same WDA in which they reside. For most areas, more

Figure 5: Practice Arrangement of ARNPs Practicing in Washington



than three-quarters worked in the same WDA. Two strikingly low values were for WDA 4 (Snohomish County, a one-county WDA just north of Seattle), where an estimated 42% practiced in the same WDA as they resided, and WDA 10 (a nine-county, largely rural eastern WDA), where an estimated 58% practiced in the same WDA as they resided. Further analysis revealed that 52% of practicing ARNPs residing in WDA 4 worked in King County (WDA 5) where Seattle, the largest city in Washington, is located. Among practicing ARNPs residing in WDA 10, 24% worked in WDA 12 and 17% worked in WDA 10, locations of two major metropolitan areas: Spokane and the Tri-Cities (Richland, Pasco, and Kennewick). Because these results include only ARNPs who both live and work in Washington and do not include ARNPs who work in other states, they should be viewed cautiously, especially for WDAs that border another state.

Practice Tenure and Retirement Plans: Practicing ARNPs in Washington have worked as an ARNP an average of 12.8 total years, 10.7 years on average in Washington (see Table 15). Among practicing ARNPs, 70.3% have spent their entire ARNP career in Washington. By primary area of practice, ARNPs practicing in school/college health, women's health, geriatrics, nurse anesthetists and nurse midwives have the longest average tenure as ARNPs (19.5, 16.8, 15.9, 18.0, and 16.4 years, respectively) (see Figure 7). Much lower percentages of nurse midwives and nurse anesthetists had spent their entire ARNP careers in Washington (46.7% and 49.7%, respectively) and ARNPs in geriatrics and psych/mental health had the highest percentages who had spent their entire ARNP careers in Washington (84.8% and 84.1%, respectively).

Table 16 shows the average number of years Washington's practicing ARNPs have worked as an ARNP, an RN, and in Washington State, by age cohort. While the table shows the intuitive finding that older ARNPs have practiced longer than younger ARNPs, it is interesting that younger ARNPs have practiced much shorter periods as an RN before they became an ARNP (to the extent that RN practice generally occurs prior to becoming an ARNP).

The retirement plans of practicing ARNPs are shown in Table 17. The percentage who responded that they intended to retire within the next five years was 14.4%, a number closely corresponding to the percent of practicing ARNPs age 60 and over (see Table 3). Less than 1% of practicing ARNPs indicated they were already retired: these practitioners were most likely volunteering as ARNPs. As shown in Table 18, ARNPs whose primary area of practice was neonatal, school/college health, women's health, or geriatrics had the highest percentages indicating intent to retire within five years (24.8%, 23.3%, 22.0%, and 21.8%, respectively).

GEOGRAPHY AND DISTRIBUTION

Table 2 shows the estimated number of licensed ARNPs in each of the 12 WDAs in the state and the percent estimated to practice in-state. In most WDAs nearly 90% or more of ARNPs practiced in Washington. The exception was WDA 7, comprised of Clark, Cowlitz and Wahkiakum counties (bordering the Portland, Oregon, area), where only 81.6% of ARNPs indicated they practiced in-state. The high practice

Figure 6: Average Weekly Hours in Professional Activities of ARNPs Practicing in Washington, by Work Setting

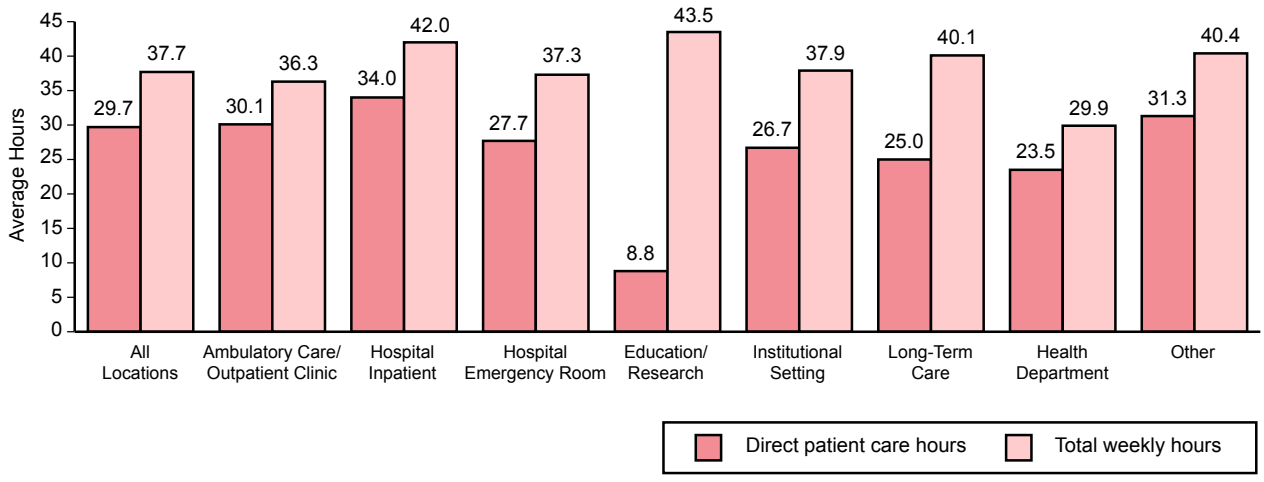
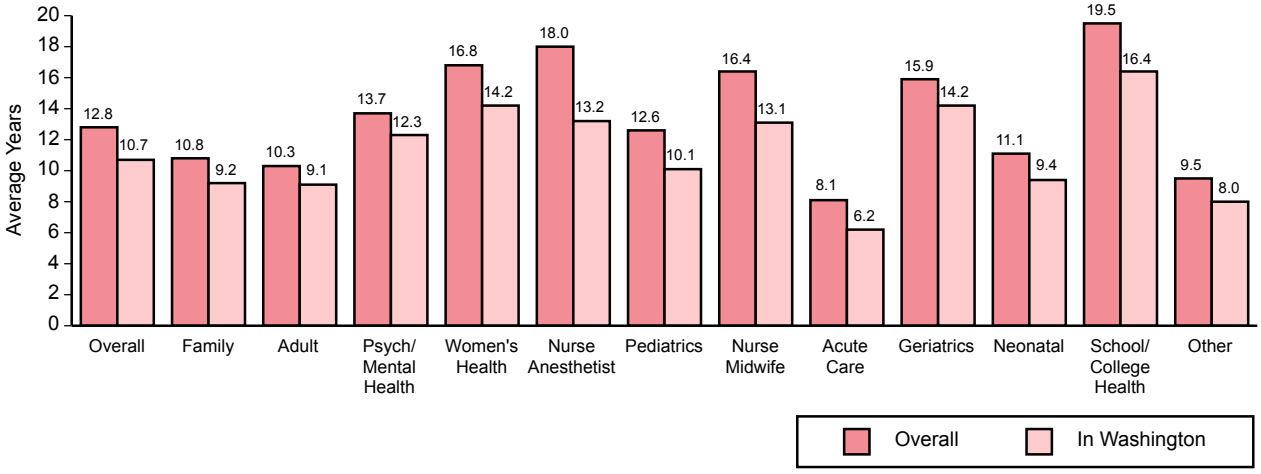


Figure 7: Average Years Practicing as an ARNP Overall and in Washington Among ARNPs Practicing in Washington, by Primary Area of Practice



rates can be explained partially by the requirement that ARNPs actively practice in order to maintain their license. In WDA 7, Washington practice rates may be lower because some ARNPs practice in Oregon, and may be licensed in both states.

Because Washington is divided geographically (and to some extent, economically) by the north-south boundary of the Cascade mountain range, ARNPs' work setting and primary area of practice were analyzed by whether their practice location was in the eastern or western side of the state. As shown in Table 19, 75.5% of ARNPs practiced in western Washington and 24.5% practiced in eastern Washington, reflecting the higher percentage of the overall population who live on the west side of the state. Table 20 shows that among all ARNPs working on the east side of the state, 66.4% worked in ambulatory care/outpatient, 16.6% in hospital inpatient, and 17.0% in other settings. Among ARNPs on the west side, a slightly higher percentage (68.2%) worked in ambulatory care/outpatient clinic settings and a smaller percentage (12.1%) worked in hospital inpatient settings. When east and west sides of the states are compared by ARNP primary area of practice, it is notable that on the west side lower percentages work as nurse anesthetists (7.4% vs. 16.1%) and in family practice (28.6% vs. 32.7%). Also on the west side of the state larger percentages work in adult practice (15.7% vs. 9.5%) and pediatrics (8.0% vs. 3.0%) than among ARNPs practicing on the east side (see Table 21).

Both eastern and western Washington have large rural areas. In 2004, 12.5% of Washington's population was rural (Washington State Department of Health, 2007).

As shown in Table 19, 88.6% of ARNPs practicing in Washington were in urban areas of the state. Among rural-practicing ARNPs, nearly half (49.2%) were family practitioners (see Figure 8 and Table 22). In comparison, only 27.1% of urban ARNPs indicated family practice was their primary area of practice.

EDUCATION

The survey asked ARNPs whether or not they had a bachelor's, master's, or doctorate degree in nursing (information about non-nursing degrees was not solicited). If they held one of these nursing degrees, respondents were asked the year it was obtained and if the degree were completed in Washington. Table 23 shows the highest of those nursing degrees that ARNPs practicing in Washington held. For 9.6% of ARNPs the nursing bachelor's was their highest nursing degree, a master's degree in nursing was the highest for 87.3%, and a doctorate in nursing was the highest for 3.1%. Among ARNPs with these nursing degrees, 41.9% obtained their bachelor's degree, 63.3% their master's degree, and 38.6% their doctorate from an institution in Washington.

ARNPs whose highest nursing degree was a bachelor's degree had spent an average of 21.8 years practicing as an ARNP with an average of 17.8 of those years in Washington (see Table 24). Those with master's degrees as their highest nursing degree had spent 9.3 years on average working as an ARNP in Washington out of 11.0 average overall years practicing as an ARNP, and those with doctorate degrees in nursing had spent 12.2 years practicing in Washington out of an average 15.6 years in ARNP practice.

Figure 8: Rural-Urban Status of Principal Work Location Among ARNPs Practicing in Washington, by Primary Area of Practice

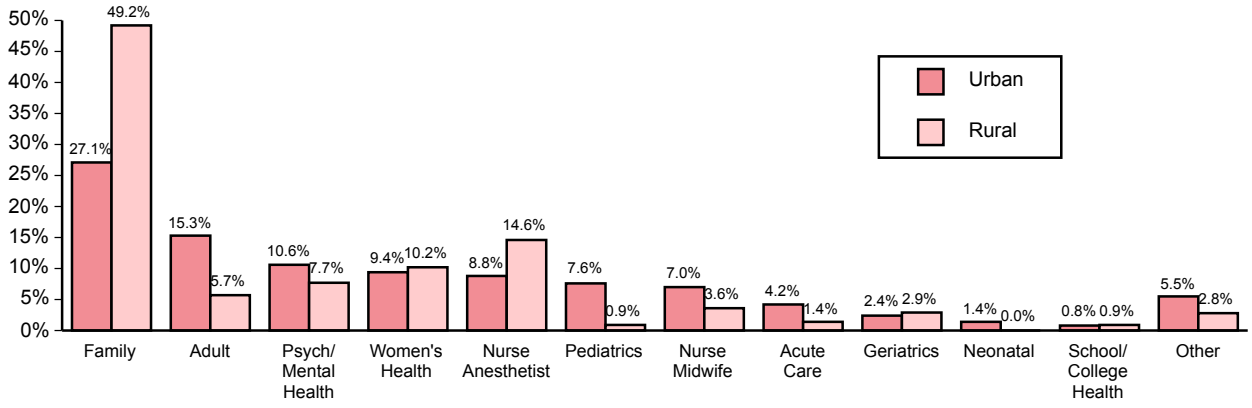


Table 5 shows the percentage of practicing ARNPs with master's or doctorate degrees in nursing, by primary area of practice. Table 8 shows similar findings by ARNPs' work setting. Fewer than three quarters of nurse anesthetists and ARNPs in geriatrics and women's health hold nursing master's degrees or higher, as is the case for ARNPs in public health settings.

STUDY LIMITATIONS

The accuracy of survey findings depends on how well respondents represent the overall population under study. While it would be preferable for this survey to have had a higher response rate, it was very fortunate to have the age, sex and residence (license mailing ZIP code) of the entire population in order to be able to assess whether the responses showed any bias for these characteristics. Analyses showed that older ARNPs were more likely than younger ARNPs to respond to the survey and the responses were weighted to compensate for this bias. As a result, the response of a younger ARNP represents more nurses in these analyses than does the response of an older ARNP.

Additionally, ARNPs who maintain a license but are not currently practicing may have responded to the survey at a different rate than those that are currently practicing. The results of a 2006 study of Washington's ARNPs that had a somewhat higher response rate (65% compared with 53% among the random sample in the 2008 survey) showed overall practice rates of 94%, compared to 92% found in this more recent survey (L. Kaplan, personal communication, April 11, 2009). Assuming practice rates were similar between years, this comparison of findings suggests that the 2008 survey only minimally under-represents practicing ARNPs.

There remain some questions about how well the survey captured the racial and ethnic diversity of the ARNP population. Because there are relatively small numbers of some racial groups in Washington's general population and racial/ethnic minorities are generally underrepresented in the nursing population (HRSA, 2006), the actual number of survey responses from some racial groups were very small (e.g., 2 Native Hawaiian/Pacific Islanders and 4 American Indian/Alaska Natives). As a result, there will be a greater potential for error in the estimates of Washington ARNPs' race and ethnicity than for other more frequently-occurring characteristics. This 2008 survey found 93.2% of Washington's ARNPs reported being white and a similar survey conducted in 2006 found 94.1% reported being white (Kaplan et al., 2009). While these percentages are quite similar, the percentages of ARNPs reporting identification with smaller racial groups are more volatile. For example, 3.2% reported being Asian and 0.6% reported being black/African American in this 2008 survey while the 2006 survey found 2.6% of ARNPs reporting Asian and 1.2% reporting black identities. For these race and ethnicity estimates, and in other cases where the data being reported are based on small numbers of occurrences such as neonatal practice, the estimates portrayed in this report should be considered with caution.

Because of the process by which the study population was assembled for analysis, the reported results for ARNPs practicing in Washington include only ARNPs who both reside and practice in-state. If the ARNPs who live out of state but work in Washington have different characteristics than reported for the in-state residents, these results will be somewhat biased toward the in-state residents. Approximately 20% of Washington's licensed ARNPs are assumed to have resided out-of-state based on their license address.

Among the unweighted responses from the out-of-state group (which must remain unweighted because response weights were calculated from and applied to the resident population), 27% indicated that they currently practiced in Washington. This was a relatively small percentage (5%) of the overall licensed ARNP population. Of those ARNPs that reported they were currently practicing in Washington but had an out-of-state address, 75% were from either Oregon or Idaho. Their average age was 49.7 years, almost identical to the average age of ARNPs in Washington (49.6).

DISCUSSION

A typical Washington ARNP is a white, non-Hispanic female, age 49.6, who has practiced 12.8 years in family practice with a physician group in an urban area of western Washington. She works an average of 37.7 hours per week with 29.7 hours in direct patient care, and her highest level of nursing education is a master's degree. She has spent most of her ARNP career in Washington. Washington's ARNPs are, of course, more varied than this description, but it is useful to have an understanding of how an ARNP composed of averages would appear.

The number of licensed ARNPs residing in Washington has grown from 2,362 in 1999 to 3,612 in 2008 (CHWS & WCN, 2008). When these numbers are examined in relation to the state population, the ratios have also grown—from 41 ARNPs per 100,000 population in 1999 to 55 ARNPs per 100,000 population in 2008, reflecting the increasing role of ARNPs in all aspects of health care.

The high percentage of ARNPs with master's degrees in nursing is influenced by the fact that first licensure in Washington has required a graduate degree since January 1, 1995. In addition, national certification is required for licensure and most national certifying organizations now require a master's degree as a criterion for eligibility. The actual number of ARNPs with a master's or doctoral degree is presumably higher than those reported in this report as the survey asked only for the highest nursing degree and did not capture information about ARNPs who obtained degrees in fields other than nursing.

Age is a critical factor in the analysis of the ARNP workforce. Only 19.6% are under the age of 40 while 37.3% of ARNPs are over age 55. To keep up with the high rate at which ARNPs will be retiring from the workforce in the next decade, attention should be paid to replacing and growing ARNP workforce supply. This study found that younger ARNPs in Washington spend fewer years in practice as an RN prior to becoming ARNPs than their predecessors, and this is likely to be contributing to increases reported since 1999 in the percent of Washington's ARNPs that are under age 40 (CHWS & WCN, 2008). This may reflect the attractiveness of the firmly established ARNP roles in Washington State and a supportive environment for autonomous advanced practice with diverse employment opportunities. Some people enter nursing primarily because they want to become ARNPs and move on to fulfill this goal early in their careers. Nursing education now recruits students with baccalaureate degrees in non-nursing fields to master's or doctoral entry into nursing programs. These programs prepare students to become an advanced practice nurse immediately after completing the initial RN preparation and contributes to more rapid growth of the ARNP supply.

Advanced practice education programs in Washington have limited resources to increase admissions. One factor that may limit the admission of younger ARNPs to some of these programs is the admission requirement for a minimum number of years of experience as an RN in general, or within a specific area of RN practice. Debt from undergraduate nursing education may discourage RNs from seeking graduate education as well. To keep pace with the high rate at which ARNPs may be retiring from the workforce in the next decade (37% of ARNPs now are age 55 or older), it is important to encourage and support RNs to become ARNPs at a younger age. When nurses become ARNPs at a younger age it stabilizes the workforce because more ARNPs have the potential to practice for a longer period of time, and it increases the overall experience level of the workforce.

It is also noteworthy that nearly a quarter (22.2%) of the respondents have an independent practice or practice with no physician in their group. This highlights the importance of Washington's laws that grant ARNPs full practice autonomy which is not available in most states. Autonomous practice authority expands Washington citizens' access to health care without requiring an increase in physician supply.

A relatively high percentage of licensed ARNPs in Washington were in active practice (91.9% compared with 76.0% for RNs and 77.7% for LPNs) (Andrilla et al., 2009; Skillman et al., 2008). This is likely explained by the state requirement that ARNPs actively practice in order to maintain both continued licensure and certification. Consequently, those who stop practicing cannot easily obtain a license or renew their certification. Renewal of an ARNP license every two years requires 250 hours of clinical practice. As an example of national certification requirements, the American Nurses Credentialing Center requires 1,000 hours of clinical practice every five years.

Tracking the proportion of providers who practice, and where they work relative to where they live, provides important workforce information about the effective workforce that analysis of licensing data alone

would miss. This survey provided the information that approximately 92% of ARNPs with Washington licenses practice as ARNPs in the state. It also provided estimates of how often ARNPs work in locations different from their residences, which in 2008 ranged from none for central eastern Washington (WDA 9) to 66% in Snohomish County. In addition, information about whether a provider such as an ARNP works full or part time can further refine estimates of the effective provider workforce for a given geographic region. Information about the shortcomings of using license mailing address to describe the size and distribution of a health workforce is critical for state and local health planning.

While the number of ARNPs in acute care settings is increasing, it is important to note that ARNP practice in Washington State continues to be predominantly in ambulatory care settings. Nurse anesthetists and midwives understandably practice in both inpatient and outpatient settings. Also imperative to highlight is that 55% of ARNPs were in areas of practice associated with primary care. The importance of ARNP contributions to primary care (compared to primary care physicians and physician assistants) has been highlighted by other authors: ARNPs comprised 12.8% of the primary care workforce in Washington in 1999, 19.1% in Wyoming in 2008, and 22% nationally in 2005-2007 (Larson et al., 2003; Skillman et al., 2008; US GAO, 2008). Many ARNPs whose principal area of practice is not included among the primary care specialties nonetheless provide primary care services. A 2006 survey of Washington's ARNPs found that across all areas of practice, only 27% reported providing no primary care services, and 50% reported that more than a quarter of their practice was primary care services (L. Kaplan, personal communication, April 11, 2009). As health care reforms emerge, and as new care models such as the medical or health care home are implemented, there will be increasing attention on ARNPs' significant role in the primary care workforce.

The state's overall population is growing, including the geriatric population who will need more, and more intensive, services in the near future. At the same time the ARNP workforce is aging and retirements in the next decade put the state at risk of severe shortages. Because of the significant contribution ARNPs supply to health care, and 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.

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TABLES OF STUDY FINDINGS

Table 1: Number and Residence of ARNPs with Washington State Licenses

ARNPs	n	Percent
Total	4,512	100.0%
Residing* in Washington	3,612	80.1%
Residing* in Idaho	83	1.8%
Residing* in Oregon	286	6.3%
Residing* in other locations	531	11.8%

* Residence was attributed to the state associated with the ZIP code on the ARNP's Washington State license.

Table 2: Number of ARNPs in Washington and Percent Practicing by WDA

		Estimated Total		
WDA*	Unweighted n	Weighted n	Percent	Percent Practicing in Washington
Overall	1,051	3,612	100.0%	91.9%†
1	67	228	6.3%	95.5%
2	66	227	6.3%	95.5%
3	56	189	5.2%	89.9%
4	80	276	7.6%	88.3%
5	376	1,290	35.7%	91.2%
6	108	376	10.4%	95.1%
7	54	188	5.2%	81.6%
8	28	101	2.8%	93.6%
9	41	141	3.9%	97.9%
10	29	101	2.8%	86.0%
11	30	103	2.9%	91.3%
12	116	394	10.9%	94.6%

* Washington counties by Workforce Development Area (WDA)—WDA 1: Clallam, Jefferson, Kitsap; WDA 2: Grays Harbor, Lewis, Mason, Pacific, Thurston; WDA 3: Island, Skagit, San Juan, Whatcom; WDA 4: Snohomish; WDA 5: King; WDA 6: Pierce; WDA 7: Clark, Cowlitz, Wahkiakum; WDA 8: Adams, Chelan, Douglas, Grant, Okanogan; WDA 9: Kittitas, Klickitat, Yakima, Skamania; WDA 10: Asotin, Columbia, Ferry, Garfield, Lincoln, Pend Oreille, Stevens, Walla Walla, Whitman; WDA 11: Benton, Franklin; WDA 12: Spokane.
† Because of missing data, the weighted number of ARNPs in Washington for whom practice status can be determined is 3,550.

Table 3: Demographic Characteristics of ARNPs in Washington: Overall and by Practice Status

	Unweighted n	Weighted n	ARNPs in Washington		
			Overall	Practicing (in Washington)	Not Practicing (in Washington)
Age	1,051	3,612			
Mean			49.8	49.6	52.2
Median			52	52	54
Age categories					
<25	1	1	<0.1%	<0.1%	0.0%
25-29	39	92	2.5%	2.5%	3.3%
30-34	68	271	7.5%	7.8%	5.2%
35-39	70	348	9.6%	9.3%	13.5%
40-44	92	351	9.7%	10.2%	6.8%
45-49	130	457	12.7%	12.5%	10.4%
50-54	224	721	20.0%	20.4%	12.2%
55-59	256	800	22.1%	23.3%	14.0%
60-64	114	396	10.7%	9.8%	19.9%
65 and over	57	185	5.1%	4.2%	14.7%
Sex					
Male	129	460	12.7%	13.1%	10.2%
Race					
White only	965	3,319	93.2%	92.9%	97.7%
Black/African-American only	7	21	0.6%	0.6%	0.0%
American Indian/Alaska Native only	4	13	0.4%	0.4%	0.0%
Asian only	30	113	3.2%	3.4%	0.0%
Native Hawaiian/Pacific Islander only	2	7	0.2%	0.2%	0.0%
Other	16	51	1.4%	1.5%	1.3%
Multiple races	11	36	1.0%	1.0%	1.0%
Missing data*	16	52	1.4%		
Ethnicity					
Hispanic	23	83	2.3%	2.2%	4.1%
Missing data*	13	44	1.2%		

* The percent calculations above do not include these missing data.

Table 4: Primary Areas of Practice of ARNPs in Washington

	ARNPs in Washington				
		Total		Practicing (in Washington)	
Primary Area of Practice	Unweighted n	Weighted n	Percent	Weighted n	Percent
Family	286	1,005	28.3%	937	29.0%
Adult	147	506	14.3%	456	14.1%
Psych/mental health	118	386	10.9%	340	10.5%
Women's health	101	341	9.6%	309	9.5%
Nurse anesthetist	101	334	9.4%	303	9.4%
Pediatrics	72	240	6.8%	213	6.6%
Nurse midwife	66	230	6.5%	215	6.7%
Acute care	36	139	3.9%	132	4.1%
Geriatrics	30	97	2.7%	90	2.8%
Neonatal	13	49	1.4%	44	1.4%
School/college health	10	34	1.0%	26	0.8%
Other	53	188	5.3%	165	5.1%
Missing data*	18	62	1.7%	29	0.9%

* The percent calculations above do not include these missing data.

Table 5: Age, Sex, Years of Practice, Education, and Full-Time Status by Primary Areas of Practice of ARNPs Practicing in Washington

Primary Area of Practice	ARNPs Practicing in Washington				
	Average Age	Percent Male	Average Number of Years Practicing as an ARNP	Masters or Doctorate in Nursing	Percent Working Full Time*
Family	48.3	11.6%	10.8	97.2%	68.1%
Adult	49.1	12.0%	10.3	95.1%	70.2%
Psych/mental health	54.2	7.0%	13.7	89.3%	58.3%
Women's health	50.8	3.1%	16.8	62.9%	49.5%
Nurse anesthetist	50.4	46.5%	18.0	49.6%	72.2%
Pediatrics	47.8	8.3%	12.6	92.4%	51.4%
Nurse midwife	49.5	5.9%	16.4	94.0%	65.4%
Acute care	45.0	10.6%	8.1	95.1%	78.2%
Geriatrics	57.5	6.4%	15.9	66.0%	64.0%
Neonatal	43.9	7.1%	11.1	100.0%	82.6%
School/college health	51.7	0.0%	19.5	76.7%	36.0%
Other	48.0	17.9%	9.5	92.0%	78.9%

* Full-time status was assigned if work hours totaled ≥35 hours per week.

Table 6: Principal Work Setting of ARNPs Practicing in Washington

Principal Work Setting	ARNPs Practicing in Washington		
	Unweighted n	Weighted n	Percent
Ambulatory care/outpatient clinic	539	1,828	67.0%
Hospital inpatient	105	369	13.5%
Hospital emergency	21	77	2.8%
Education/research	22	74	2.7%
Institutional setting	21	73	2.7%
Long-term care	22	72	2.6%
Health department	17	58	2.1%
Other	52	176	6.5%
Missing data*	150	533	16.3%

* The percent calculations above do not include these missing data responses.

Table 7: Principal Work Setting of ARNPs in Washington by Primary Area of Practice

Primary Area of Practice	Principal Work Setting of ARNPs Practicing in Washington		
	Hospital Inpatient	Ambulatory Care/Outpatient Clinic	All Others
Family	1.8%	77.7%	20.5%
Adult	8.9%	75.0%	16.2%
Psych/mental health	9.4%	73.0%	17.5%
Women's health	0.0%	81.6%	18.4%
Nurse anesthetist	57.7%	41.2%	1.1%
Pediatrics	9.3%	83.8%	7.0%
Nurse midwife	11.6%	63.0%	25.5%
Acute care	45.8%	29.7%	24.5%
Geriatrics	0.0%	8.3%	91.7%
Neonatal	100.0%	0.0%	0.0%
School/college health	0.0%	39.9%	60.1%
Other	10.5%	61.4%	28.0%

Table 8: Age, Sex, Years of Practice, Education, and Full-Time Status by Principal Work Setting of Practicing ARNPs in Washington

Principal Work Setting	ARNPs Practicing in Washington				
	Average Age	Percent Male	Average Number of Years Practicing as an ARNP	Percent with Master's or Doctorate in Nursing	Percent Working Full Time*
Ambulatory care/outpatient clinic	49.8	11.3%	13.4	87.2%	60.6%
Hospital inpatient	47.4	25.3%	12.1	77.1%	77.3%
Hospital emergency	43.6	9.4%	7.4	100.0%	54.1%
Education	53.3	11.3%	13.0	100.0%	82.6%
Institutional setting	50.6	9.4%	12.2	82.1%	81.1%
Nursing home/extended care	55.4	4.8%	14.9	75.7%	77.3%
Health department	54.2	5.8%	18.7	60.3%	43.4%
Other	51.2	3.6%	12.4	82.3%	63.4%

* Full-time status was assigned if work hours totaled ≥35 hours per week.

Table 9: Practice Arrangement of ARNPs Practicing in Washington Overall and by Primary Area of Practice

Primary Area of Practice	Practice Arrangement			
	Independent Practice	Group Practice, No Physician in Group	Group Practice with Physician in Group	Other
Overall	14.5%	7.7%	64.1%	13.8%
Family	10.2%	9.1%	71.7%	9.0%
Adult	6.5%	2.3%	78.9%	12.3%
Psych/mental health	48.6%	4.1%	26.6%	20.6%
Women's health	8.7%	10.6%	57.8%	22.9%
Nurse anesthetist	32.7%	8.3%	49.2%	9.9%
Pediatrics	8.3%	0.0%	74.9%	16.7%
Nurse midwife	9.1%	29.1%	55.5%	6.3%
Acute care	0.0%	2.3%	78.9%	18.8%
Geriatrics	9.6%	0.0%	65.5%	24.9%
Neonatal	0.0%	10.3%	72.3%	17.4%
School/college health	11.8%	17.3%	47.5%	23.5%
Other	1.9%	3.0%	77.8%	17.3%

Table 10: Age of Practicing ARNPs in Washington by Full- and Part-Time Status

	ARNPs Practicing in Washington	
	Full Time*	Part Time
Total† (n)	2,131 (65.4%)	1,127 (34.6%)
Mean age (years)	48.9	50.8
Age <55 years (n = 2,217†)	68.2%	31.8%
Age ≥55 years (n = 1,041†)	59.5%	40.5%

* Full-time status was assigned if work hours totaled ≥35 hours/week.
† Weighted number. Unweighted numbers were 626 for <55 years and 323 for ≥55 years.

Table 11: Direct Patient Care and Total Weekly Hours of Practicing ARNPs in Washington by Primary Area of Practice

Primary Area of Practice	Average Weekly Hours Among ARNPs Practicing in Washington	
	Direct Patient Care Hours	Average Total Weekly Hours
Family	29.3	37.8
Adult	31.5	39.2
Psych/mental health	28.1	37.2
Women's health	27.9	32.5
Nurse anesthetist	33.4	37.8
Pediatrics	25.0	31.1
Nurse midwife	32.2	41.4
Acute care	31.6	41.9
Geriatrics	23.4	36.7
Neonatal	32.1	45.7
School/college health	24.8	28.1
Other	31.3	42.8

Table 12: Average Weekly Hours of Practicing ARNPs in Professional Activities in Washington Overall and by Principal Work Setting

Principal Work Setting of ARNPs in Washington	Average Weekly Hours in Professional Activity among ARNPs Practicing in Washington					
	Total*	Direct Patient Care (Including Patient Education)	Administration of Clinical Practice	Teaching (Nursing Education)	Research	Other Professional ARNP Activities
All locations	37.7	29.7	3.9	1.9	0.7	1.5
Ambulatory care/outpatient clinic	36.3	30.1	3.7	1.0	0.4	1.1
Hospital inpatient	42.0	34.0	4.6	2.0	0.5	1.3
Hospital emergency room	32.3	27.7	0.9	1.5	1.0	1.2
Education/research	43.5	8.8	2.0	23.0	7.2	2.3
Institutional setting	37.9	26.7	5.5	3.4	0.5	1.9
Long-term care	40.1	25.0	5.3	5.0	0.3	4.6
Health department	29.9	23.5	2.8	0.9	0.0	2.7
Other	40.4	31.3	3.9	1.8	0.7	2.9

* Total hours do not equal the sum of professional activity component hours because total hours were reported independently.

Table 13: Number of Locations in which ARNPs Practicing in Washington Provide Direct Patient Care

Provide Direct Patient Care	ARNPs Practicing in Washington		
	Unweighted n	Weighted n	Percent
Overall	936	3,216	100.0%
In one location	596	2,057	71.9%
In two locations	103	352	12.3%
In more than two locations	132	451	15.8%
Missing data*	105	356	11.1%

* The percent calculations above do not include these missing data responses.

Table 14: ARNPs' Residence and Principal Work Location by WDA

WDA*	Estimated† Number of Licensed ARNPs Residing in WDA	Estimated Number of ARNPs in WDA Who Actively Practice in Washington	Percent of ARNPs Practicing in Same WDA as they Reside‡
1	228	214	87%
2	227	210	77%
3	189	170	90%
4	276	241	42%
5	1,290	1,155	89%
6	376	349	78%
7	188	151	100%
8	101	88	100%
9	141	138	100%
10	101	86	58%
11	103	94	86%
12	394	366	97%

* Washington counties by Workforce Development Area (WDA)—WDA 1: Clallam, Jefferson, Kitsap; WDA 2: Grays Harbor, Lewis, Mason, Pacific, Thurston; WDA 3: Island, Skagit, San Juan, Whatcom; WDA 4: Snohomish; WDA 5: King; WDA 6: Pierce; WDA 7: Clark, Cowlitz, Wahkiakum; WDA 8: Adams, Chelan, Douglas, Grant, Okanogan; WDA 9: Kittitas, Klickitat, Yakima, Skamania; WDA 10: Asotin, Columbia, Ferry, Garfield, Lincoln, Pend Oreille, Stevens, Walla Walla, Whitman; WDA 11: Benton, Franklin; WDA 12: Spokane.
† Estimates based on weighted survey responses.
‡ Note that these results include only ARNPs who both live and work in Washington, and do not include ARNPs who live in the WDA but work in another state.

Table 15: Washington Practice Tenure of ARNPs in Washington by Primary Area of Practice

Primary Area of Practice	Average Years of Practice as an ARNP in Washington	Average Years of Practice as an ARNP	Percent of ARNPs Who Have Spent their Entire Career in Washington
Overall	10.7	12.8	70.3%
Family	9.2	10.8	73.4%
Adult	9.1	10.3	80.7%
Psych/mental health	12.3	13.7	84.1%
Women's health	14.2	16.8	62.9%
Nurse anesthetist	13.2	18.0	49.7%
Pediatrics	10.1	12.6	68.7%
Nurse midwife	13.1	16.4	46.7%
Acute care	6.2	8.1	66.5%
Geriatrics	14.2	15.9	84.8%
Neonatal	9.4	11.1	69.4%
School/college health	16.4	19.5	58.3%
Other	8.0	9.5	75.4%

Table 16: Practice Tenure of ARNPs Practicing in Washington by Age Group

Age Group	Average Years of Practice as an ARNP	Average Years of Practice as an RN	Average Years of Practice as an ARNP in Washington State
<25 years	2.0	1.0	2.0
25-29 years	2.2	3.4	2.2
30-34 years	3.2	4.6	3.0
35-39 years	6.2	8.2	5.2
40-44 years	8.3	10.8	7.0
45-49 years	9.7	14.7	7.8
50-54 years	13.8	20.1	11.4
55-59 years	17.6	20.0	15.0
60-64 years	20.9	24.1	16.9
65-69 years	21.7	29.8	19.1
70-74 years	22.2	21.6	20.1
75+ years	31.1	22.8	27.8

Table 17: Retirement Plans of ARNPs Currently Practicing in Washington

	Percent
Already retired	0.7%
Plan to retire	
Within 5 years	14.4%
Within 6 to 10 years	24.8%
In more than 10 years	49.5%
Don't know/uncertain	10.5%
Missing*	0.4%

* The percent calculations above do not include these missing data.

Table 18: Five-Year Retirement Plans of ARNPs Practicing in Washington by Primary Area of Practice

Primary Area of Practice	Percent of ARNPs Planning to Retire within Five Years
Family	12.5%
Adult	13.3%
Psych/mental health	15.8%
Women's health	22.0%
Nurse anesthetist	16.6%
Pediatrics	13.7%
Nurse midwife	15.5%
Acute care	7.9%
Geriatrics	21.8%
Neonatal	24.8%
School/college health	23.3%
Other	4.1%

Table 19: Geographic Location of Principal Practice

Principal Practice Location	Unweighted n	Weighted n	Percent
Western Washington	691	2,376	75.5%
Eastern Washington	224	770	24.5%
Missing*	34	114	3.5%
Urban	808	2,787	88.6%
Rural	107	360	11.4%
Missing*	34	114	3.5%

* The percent calculations above do not include these missing data.

Table 20: Principal Work Setting of ARNPs Practicing in Washington by State Geography

	ARNPs Practicing in Washington	
Principal Work Setting	Eastern Washington*	Western Washington†
Ambulatory care/outpatient clinic	66.4%	68.2%
Hospital inpatient	16.6%	12.1%
All others	17.0%	19.7%

* Eastern Washington counties include Adams, Chelan, Douglas, Grant, Okanogan, Kittitas, Klickitat, Yakima, Skamania, Asotin, Columbia, Ferry, Garfield, Lincoln, Pend Oreille, Stevens, Walla Walla, Whitman, Benton, Franklin, and Spokane.
† Western Washington counties include Clallam, Jefferson, Kitsap, Grays Harbor, Lewis, Mason, Pacific, Thurston, Island, Skagit, San Juan, Whatcom, Snohomish, King, Pierce, Clark, Cowlitz, and Wahkiakum.

Table 21: Principal Practice Location of ARNPs Practicing in Washington by Primary Area of Practice

Primary Area of Practice	Principal Practice Location of ARNPs	
	Western Washington	Eastern Washington
Family	28.6%	32.7%
Adult	15.7%	9.5%
Psych/mental health	10.7%	9.1%
Women's health	9.6%	9.1%
Nurse anesthetist	7.4%	16.1%
Pediatrics	8.0%	3.0%
Nurse midwife	6.7%	6.2%
Acute care	4.3%	2.3%
Geriatrics	2.7%	1.6%
Neonatal	1.0%	2.0%
School/college health	0.9%	0.8%
Other	4.4%	7.6%

Table 22: Rural-Urban Status of Principal Practice Location of ARNPs Practicing in Washington by Primary Area of Practice

Primary Area of Practice	Principal Practice Location of ARNPs	
	Urban	Rural
Family	27.1%	49.2%
Adult	15.3%	5.7%
Psych/mental health	10.6%	7.7%
Women's health	9.4%	10.2%
Nurse anesthetist	8.8%	14.6%
Pediatrics	7.6%	0.9%
Nurse midwife	7.0%	3.6%
Acute care	4.2%	1.4%
Geriatrics	2.4%	2.9%
Neonatal	1.4%	0.0%
School/college health	0.8%	0.9%
Other	5.5%	2.8%

Table 23: Highest Nursing Degree Among ARNPs Practicing in Washington

Highest Degree in Nursing	Weighted n	Percent	Completed Degree at an Institution in Washington
Bachelor's	296	9.6%	41.9%
Master's	2,694	87.3%	63.3%
Doctorate	96	3.1%	38.6%
Missing*	175	5.4%	

* The percent calculations above do not include these missing data.

Table 24: Practice Tenure of ARNPs Practicing in Washington by Highest Nursing Degree Earned

Highest Degree in Nursing	Total Years of Practice as an ARNP	Years of Practice as an ARNP in Washington State
Bachelor's	21.8	17.8
Master's	11.0	9.3
Doctorate	15.6	12.2

APPENDIX A:
WASHINGTON STATE ARNP SURVEY QUESTIONNAIRE

Survey of Washington State Licensed Health Care Providers
ADVANCED REGISTERED NURSE PRACTITIONER (ARNP)

Please answer all questions as instructed as it applies to the license type listed above. PLEASE DO NOT DOUBLE COUNT YOUR ACTIVITIES across license types. Instructions on how to complete the questions are listed in the "Marking Instructions" box at the right side of the page.

SPECIALTY

Q1. Select ONE category below that best describes your primary area of practice. *(If you are not clinically active, please select the type of work with which you are most associated.)*

- ○ Family
- ○ Adult
- ○ Psych/Mental health
- ○ Women's health
- ○ Nurse midwife
- ○ Nurse anesthetist
- ○ Pediatrics
- ○ Geriatrics
- ○ Acute care
- ○ Neonatal
- ○ School/College health
- ○ Other

PRACTICE ACTIVITIES

Q2. Are you currently working (employed or volunteer) as an ARNP in Washington State?

- ○ Yes
- ○ No **==> Skip to Q10**

Q3. During a typical week, approximately how many hours do you spend in the following professional ARNP activities? *(Do not include on-call time.)*

- [ ][ ] Direct patient care (including patient education)
- [ ][ ] Administration of clinical practice
- [ ][ ] Teaching (nursing education)
- [ ][ ] Research
- [ ][ ] Other professional nursing activities
- [ ][ ] **TOTAL** hours (add above items -- This should represent your typical weekly hours of work.)

Q4. In the past 12 months, how many weeks did you work? *(For example, if you work all year and take two weeks vacation, you would work 50 weeks.)*

- [ ][ ] Weeks

Q5. How would you characterize your practice?

- ○ Independent practice
- ○ Group practice, no physician in the group
- ○ Group practice, with physician(s) in the group
- ○ Other

Q6. Do you provide direct patient care?

- ○ Yes
- ○ No **==> Skip to Q9**

Q7. What are the ZIP codes of your work location(s) where you provide direct patient care?

[ ][ ][ ][ ][ ] Principal work location ZIP code

[ ][ ][ ][ ][ ] Secondary work location ZIP code (if applicable)

Q8. Do you provide direct patient care in more than two locations?

- ○ Yes
- ○ No

MARKING INSTRUCTIONS

- Use a No. 2 pencil or a blue or black ink pen only.
- Do not use pens with ink that soaks through the paper.
- Make solid marks that fill the response completely.
- Make no stray marks on this form.

CORRECT: ● **INCORRECT:** ✓ ✗ ◑ ⊙

{RespID}

Please turn the page over and answer the questions on the other side.

FACILITY TYPE

Q9. Which ONE of the following best describes the work setting of your principal position?

- ○ Ambulatory/Outpatient
- ○ Hospital inpatient
- ○ Hospital emergency
- ○ Long-term care
- ○ Institutional setting *(e.g., correctional facility, school infirmary)*
- ○ Health Department
- ○ Education/Research
- ○ Other

PRACTICE HISTORY

Q10. How many total years have you practiced as an ARNP? *(Include both time in Washington and elsewhere.)*

☐☐ Total years of practice (including in Washington) *(Use 0 if none.)*

Q11. How many total years have you practiced as an ARNP in Washington?

☐☐ Total years of practice in Washington *(Use 0 if none.)*

Q12. How many total years have you practiced as a Registered Nurse *(not as an ARNP)*?

☐☐ Total years of practice as a registered nurse *(Use 0 if none.)*

Q13. When do you plan to retire?

- ○ Already retired
- ○ Within the next 5 years
- ○ Within the next 6 - 10 years
- ○ More than 10 years from now
- ○ Don't know/Uncertain

EDUCATION

Q14. Which of the following nursing degrees have you obtained?

Type of Degree/Program	Q14a. Did you obtain this degree? Yes	Q14a. No	Q14b. If yes, in what year did you obtain the degree?	Q14c. If yes, did you complete this degree at an institution in Washington State? Yes	Q14c. No
a. Bachelor's degree in nursing	○	○	☐☐☐☐	○	○
b. Master's degree in nursing	○	○	☐☐☐☐	○	○
c. Doctorate degree in nursing	○	○	☐☐☐☐	○	○

ETHNICITY and RACE

Q15. Are you of Spanish / Hispanic / Latino origin?

- ○ Yes
- ○ No

Q16. The Spanish/Hispanic/Latino question is about ethnicity, not race. Please continue to answer the following question by marking one or more boxes to indicate what you consider your race(s) to be.

- ○ White
- ○ Black or African American
- ○ American Indian or Alaska native
- ○ Asian
- ○ Native Hawaiian/Pacific Islander
- ○ Other

Thank you for participating in this important survey! **Please return your questionnaire in the envelope provided, or to SESRC, Washington State University, PO Box 641801, Pullman, WA 99164-1801**

APPENDIX B: ASSESSMENT OF POSSIBLE RESPONSE BIAS

Table B-1: Response Rates for Washington ARNPs by Workforce Development Area (WDA)

	Response Rates Overall	Response Rates for Random Sample of 33% of Licensed ARNPs
Total number	4,512	1,504
Overall responses (n)	1,230	791
Overall responses (%)	27.3%	52.6%
Responses (% of WDA) by WDA*		
1	30.5%	57.3%
2	27.7%	53.1%
3	27.3%	56.7%
4	30.2%	64.8%
5	28.8%	52.2%
6	29.8%	62.9%
7	29.0%	52.5%
8	27.7%	61.8%
9	31.3%	51.7%
10	28.2%	40.0%
11	30.9%	60.0%
12	29.1%	61.7%

* Counties by Workforce Development Area (WDA)—WDA 1: Clallam, Jefferson, Kitsap; WDA 2: Grays Harbor, Lewis, Mason, Pacific, Thurston; WDA 3: Island, Skagit, San Juan, Whatcom; WDA 4: Snohomish; WDA 5: King; WDA 6: Pierce; WDA 7: Clark, Cowlitz, Wahkiakum; WDA 8: Adams, Chelan, Douglas, Grant, Okanogan; WDA 9: Kittitas, Klickitat, Yakima, Skamania; WDA 10: Asotin, Columbia, Ferry, Garfield, Lincoln, Pend Oreille, Stevens, Walla Walla, Whitman; WDA 11: Benton, Franklin; WDA 12: Spokane.

Table B-2: Response Rates for Washington ARNPs by Age Group

	Response Rates Overall	Response Rates for Random Sample of 33% of Licensed ARNPs
Total number	4,512	1,504
Overall responses (n)	1,230	791
Overall responses (%)	27.3%	52.6%
Responses (% of age group) by age categories		
<25	100.0%	100.0%
25-29	39.6%	64.4%
30-34	23.5%	47.8%
35-39	20.0%	40.5%
40-44	24.2%	46.5%
45-49	26.6%	49.5%
50-54	28.2%	55.7%
55-59	29.6%	55.9%
60-64	29.0%	58.6%
65-69	28.3%	54.4%
70-74	36.6%	58.8%
≥75	40.0%	83.3%

Table B-3: Age and Sex Characteristics of All Licensed ARNPs in Washington Compared with Survey Respondents

	Total Licensed Population	Survey Respondents	
		From 33% Random Sample	From ARNPs NOT in Random Sample
Total number	4,512	791	439
Age			
Mean	49.9	50.3	51.3
Median	52	52	53
Age categories (% of category)			
<25	<0.1%	0.1%	0.0%
25-29	2.2%	3.7%	2.5%
30-34	7.4%	7.0%	5.2%
35-39	9.6%	7.8%	5.5%
40-44	9.8%	8.3%	9.3%
45-49	12.9%	12.6%	12.5%
50-54	20.7%	21.0%	22.1%
55-59	21.9%	21.6%	27.6%
60-64	10.4%	12.0%	9.3%
65 and over	5.1%	5.8%	5.9%
Sex			
Male (%)	15.2%	11.4%	16.4%

Table B-4: Geographic Distribution of All Licensed ARNPs in Washington Compared with Survey Respondents

	Total Licensed Population	Survey Respondents	
		From 33% Random Sample	From ARNPs NOT in Random Sample
Total number	4,512	791	439
Geography			
Out of state (%)	19.9%	16.4%	11.2%
In-state, overall (%)	80.1%	83.6%	88.8%
WDA* (%)			
1	6.1%	6.5%	6.2%
2	6.6%	6.5%	5.9%
3	5.7%	5.7%	4.6%
4	7.3%	7.0%	8.7%
5	36.1%	36.3%	34.9%
6	10.1%	11.8%	7.7%
7	5.2%	4.7%	5.9%
8	2.8%	3.2%	1.8%
9	3.6%	2.3%	6.7%
10	2.9%	2.1%	3.8%
11	2.7%	2.7%	3.1%
12	11.0%	11.2%	10.8%

* Counties by Workforce Development Area (WDA)—WDA 1: Clallam, Jefferson, Kitsap; WDA 2: Grays Harbor, Lewis, Mason, Pacific, Thurston; WDA 3: Island, Skagit, San Juan, Whatcom; WDA 4: Snohomish; WDA 5: King; WDA 6: Pierce; WDA 7: Clark, Cowlitz, Wahkiakum; WDA 8: Adams, Chelan, Douglas, Grant, Okanogan; WDA 9: Kittitas, Klickitat, Yakima, Skamania; WDA 10: Asotin, Columbia, Ferry, Garfield, Lincoln, Pend Oreille, Stevens, Walla Walla, Whitman; WDA 11: Benton, Franklin; WDA 12: Spokane.

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