

# Nursing Education and Training in the United States

2018 National Sample Survey of Registered Nurses



**U.S. Department of Health and Human Services  
Health Resources and Services Administration  
Bureau of Health Workforce  
National Center for Health Workforce Analysis**



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## Executive Summary

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This report analyzes education and training data from the 2018 National Sample Survey of Registered Nurses (NSSRN). Using the 2018 NSSRN, stakeholders are able to gain insight into nursing education and practice, including recruitment and retention of the nursing workforce.

The NSSRN is a nationally representative sample survey of RNs that is designed to examine various workforce characteristics, such as demographics, education and training, and employment. A total of 50,273 RNs completed the 2018 study via a web instrument or a paper questionnaire, representing a total of 3,967,661 RNs. The response rate for the survey was 50.1 percent (49.1% weighted). This instrument gathered data from participants with active RN licenses from all U.S. states and the District of Columbia.

This report focuses on *the education and training characteristics of actively licensed nurses* as of December 31, 2017. Both RNs and Advanced Practice Registered Nurses (APRNs) are accounted for in the data, but are not distinctly described in most of this report. More information on the characteristics of the broader nursing workforce can be found in the 2018 NSSRN Brief Summary of Results report.<sup>1</sup>

- As of December 31, 2017, there were an estimated 3,957,661 actively licensed registered nurses (RNs) in the United States.
- Prior to completing their initial RN educational program, approximately 67.1 percent of RNs reported holding a health-related job and 13.5 percent reported already holding a Licensed Practical Nurse (LPN) or Licensed Vocational Nurse (LVN) license.
- While 95 percent of nurses are trained in the US, 5 percent are trained abroad.
- Approximately 5.7 percent of NSSRN respondents reported that at least half of their nursing coursework was delivered online or through correspondence.
- The proportion of nurses who graduated with a bachelor's degree rose to 54.5 percent in the years between 2012 and 2016, compared to only 22.9 percent before 1971.

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<sup>1</sup> U.S. Department of Health and Human Services, Health Resources and Services Administration, National Center for Health Workforce Analysis. 2019. [Brief Summary Results from the 2018 National Sample Survey of Registered Nurses](#), Rockville, Maryland.

## Findings

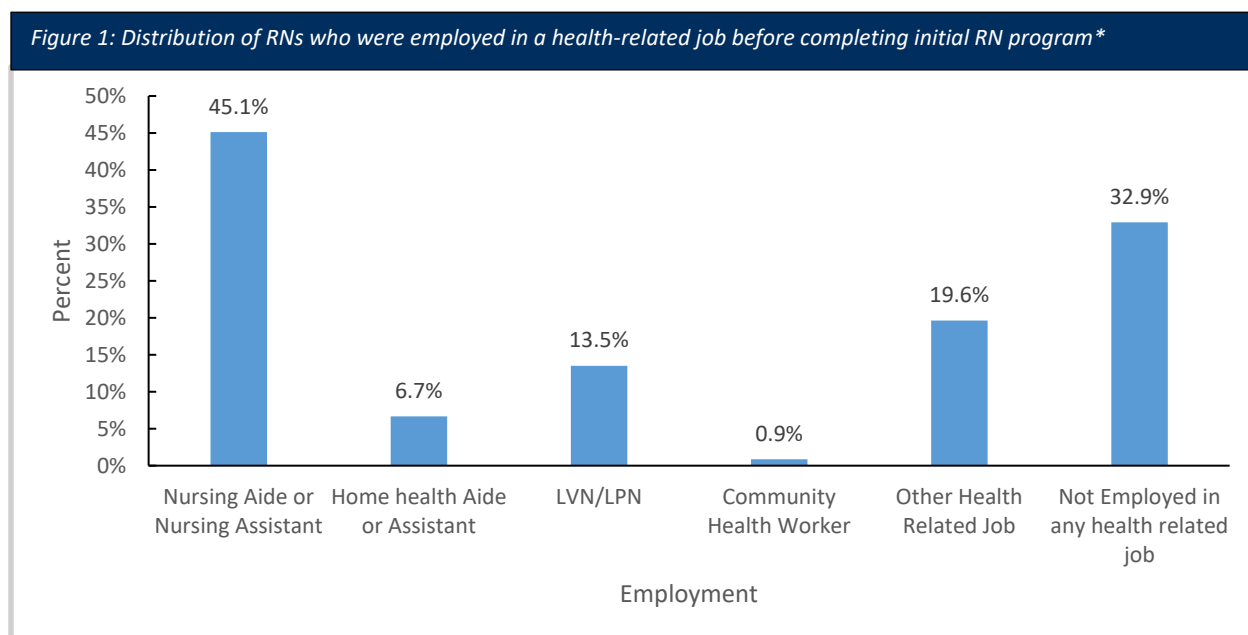
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### The U.S. Nursing Workforce

As of December 31, 2017, there were an estimated 3,957,661 licensed registered nurses (RNs) living in the United States, a 29 percent increase since the 2008 NSSRN workforce estimates. Approximately 40% of the current RN workforce graduated from their initial nursing program in 2005 or later. In 2017, respondents had an average of 18.9 years of experience since their initial RN licensure.

### Pre-Nursing Education

In the U.S., RNs enter the workforce through various educational pathways, though many respondents share similar prior work experiences. The 2018 NSSRN survey results showed that 67.1 percent of RNs were employed in a health-related job prior to completing their initial RN program. The most commonly reported pre-nursing licensure jobs were nursing aides/assistants (45.1%) (*Figure 1*). In addition, 13.5 percent of RNs reported already having a Licensed Practical Nurse (LPN) or Licensed Vocational Nurse (LVN) license prior to becoming a RN.

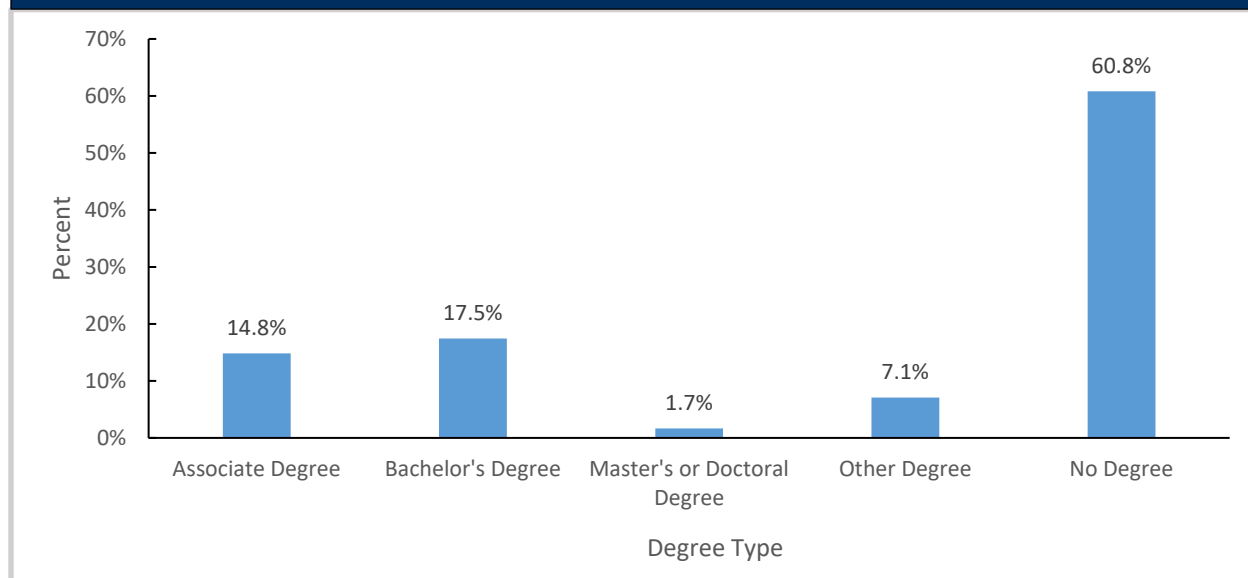


\*The total percentage is over 100% due to participants' option to select all that applied for this question; some respondents reported in two or more categories

When examining education prior to initial RN licensure, 60.8 percent of nurses did not have a post-high school degree prior to earning their initial RN license (*Figure 2*), suggesting that most nurses enter the nursing field with an RN as their first professional career choice/achievement. Nearly one third (32.3%) of RNs had previously earned post-high school degrees (17.5% completed a bachelor's degree, 14.8%

completed an associate degree, 1.7% completed a master's degree or higher, and 7.1% had completed other unspecified degrees) (Figure 2).

Figure 2: Distribution of RNs with degrees prior to initial RN licensure\*



\*The total percentage is over 100% due to participants' option to select all that applied for this question

## Educational Pathways into Nursing

Entry into the nursing profession may include earning a diploma, an Associate Degree in Nursing (ADN), a Bachelor of Science in Nursing (BSN) degree, an accelerated, second-bachelor's nursing degree where students already have a baccalaureate degree in another discipline, or an entry-level master's degree from a program designed for students with a bachelor's or graduate degree in a non-nursing discipline.<sup>2</sup> Nearly all (98.1 %) RNs earned a diploma, ADN, or Bachelor's degree as their entry into the nursing profession (1.1% earned a graduate degree). Among them, 37 percent earned their degree between 19 and 23 years of age, followed by 24 to 28 years (25.1%), and 29 to 33 years (15%) (Figure 3). Among the 1.1 percent of RNs whose initial nursing degree was a graduate degree (master's or doctoral degree) 43.4, 18.4, and 24.2 percent earned the degree between age 24 and 28 years, 29 to 33 years, and, at or older than 34 years, respectively. (Figure 3). Figure 4 shows degree distribution by age at graduation among RNs who earned their initial nursing degree that qualified them for their first RN license (diploma, associate degree, or bachelor's degrees). While bachelor's degree accounted for nearly half of degree types among RNs between ages 19 and 23, associate degrees account for more than half of degree types among those who obtained the degree at age 24 or later.

<sup>2</sup> American Association of Colleges of Nursing. (2020). Nursing Education Programs. Retrieved from <https://www.aacnnursing.org/Nursing-Education>

Figure 3: Age at initial nursing or nursing related degree (All)

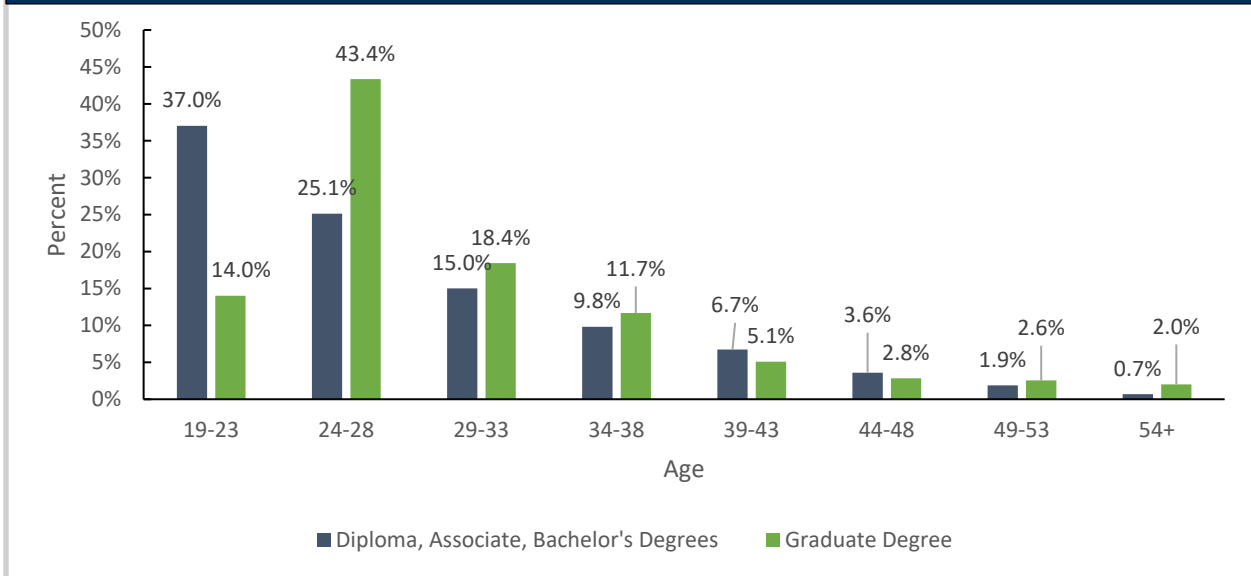
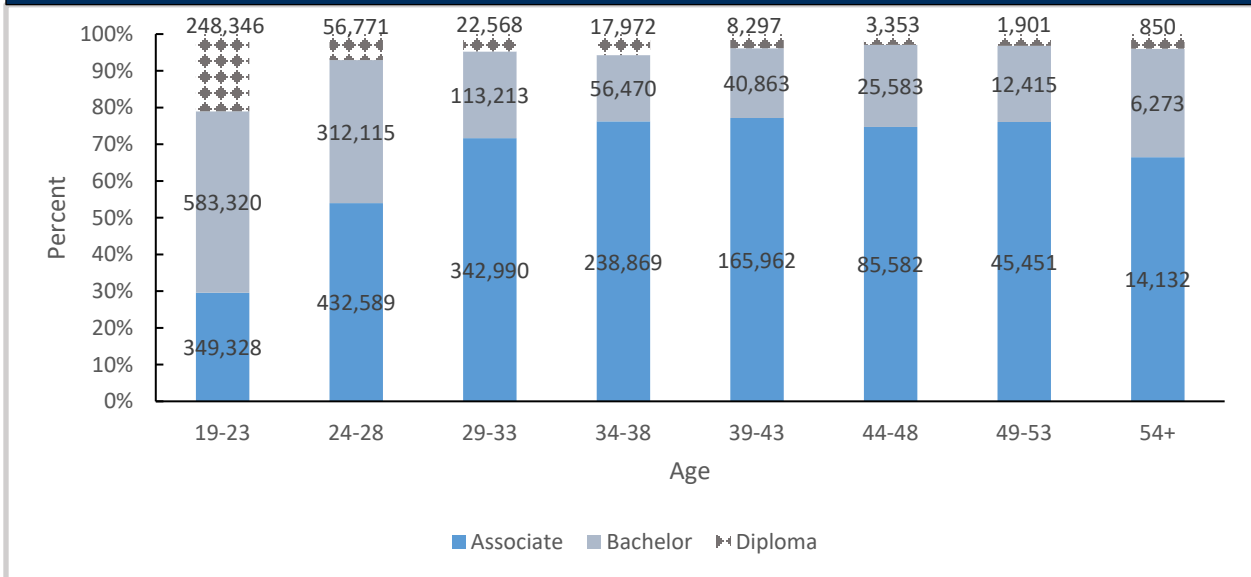


Figure 4: Initial nursing degree by age at graduation (Diploma, Associate Degree, and Bachelor's Degree)



Geographically, approximately 60 percent of nurses received their nursing training from institutions located in the Midwest and South regions of the US. [Appendix B](#) lists the US Census Divisions and the states included in each. While most RNs are trained in the US, an estimated 5.0 percent completed their training outside of the United States and, of these, nearly half of them were from the Philippines, with Canada and India being the next most common countries where nursing education occurred, respectively.

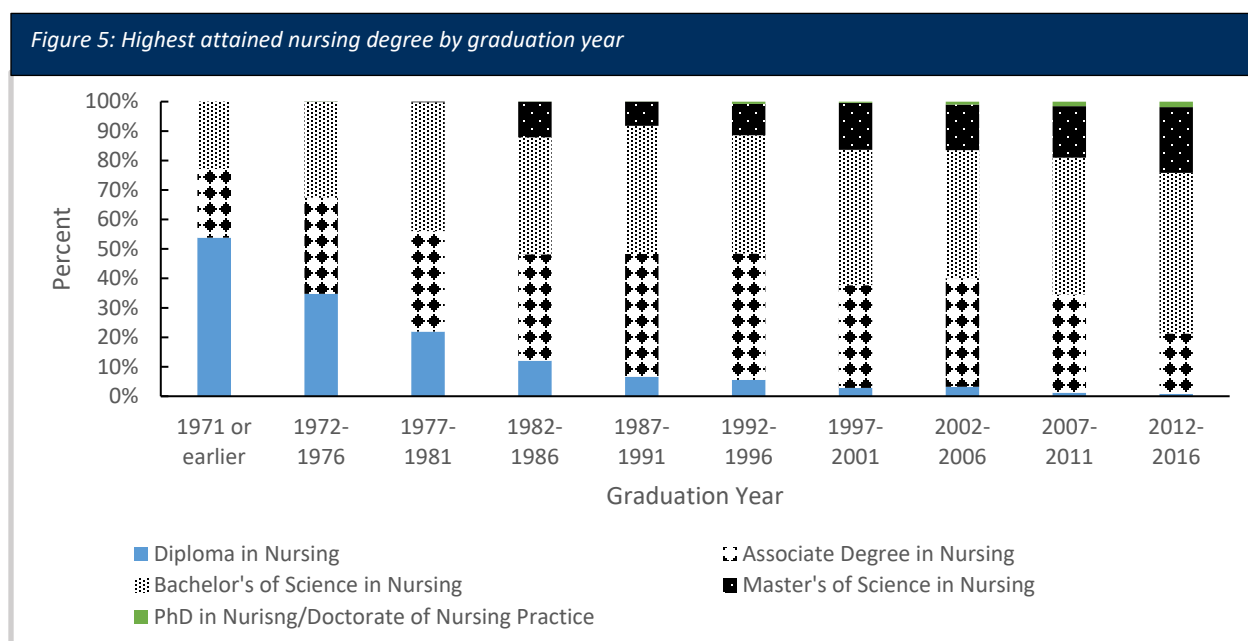


## Nursing Education and Training

### Highest Attained Nursing Degree

Advancements in technologies have made nursing education more accessible to a wide range of individuals and communities.<sup>3</sup> Increasingly, online nursing programs are preparing students for the workforce, although all educational pathways into nursing practice still require clinical training.<sup>4</sup> Approximately 5.7 percent of NSSRN respondents reported that at least half of their nursing coursework was delivered online or through correspondence.

Once an RN completes their initial nursing education and passes the licensure exam, they are able to practice and may decide to pursue subsequent nursing degrees and certifications. Nursing education policies and recommendations have evolved through the years in response to the nursing workforce challenges.<sup>5</sup> Since the 1970s, enrollment and graduates of nursing diploma programs have decreased. However, the proportion of bachelor's prepared nurses have increased considerably (Figure 5). Of the nurses who graduated in 1971 or earlier, 22.9 percent reported having a bachelor's degree as their highest nursing degree, compared to 54.5 percent who graduated from a nursing program between 2012 and 2016 (Figure 5).



In this survey, 43.4 percent of all RNs had bachelor's degrees (in nursing or nursing related field) as their highest attained degree, followed by an associate degree (29.6%), master's degree (17.5%), diploma (6.4%), and doctoral degree (1.9%).

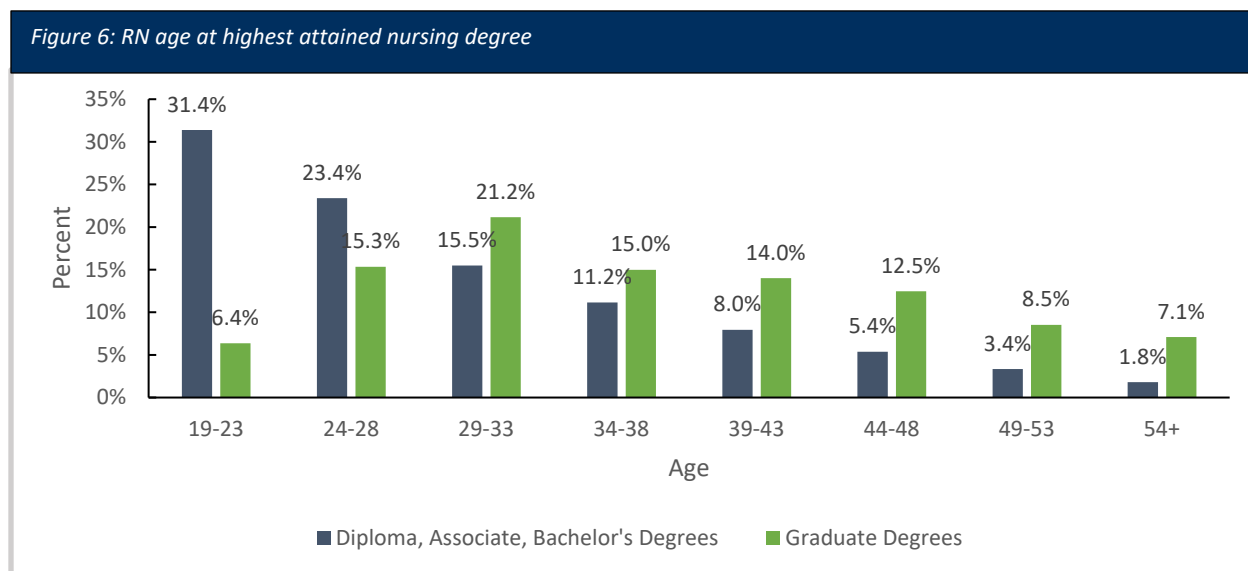
<sup>3</sup> Kozlowski-Gibson M. (2018). Online nursing education: Reform from within our humanity. *Nurse Educ Today*. 2018 Sep;68:75-77. doi: 10.1016/j.nedt.2018.05.031. Epub 2018 Jun 5. PMID: 29890372.

<sup>4</sup> American Association of Colleges of Nursing. (2014). Fact Sheet: Creating a More Highly Qualified Nursing Workforce. Retrieved from <https://www.aacnnursing.org/Portals/42/News/Factsheets/Nursing-Workforce-Fact-Sheet.pdf>

<sup>5</sup> Campaign for Action. (2017). [Nursing education and the decade of change: Strategies to meet America's health needs.](#)

The proportion of nurses with highest attained nursing degree as master’s or doctoral degree was highest among those who graduated between 2007 and 2016. This indicates that nurses are increasingly reaching higher levels of education since the turn of this past century.

Among nurses who earned a diploma, associate, or bachelor’s degree as their highest attained nursing degree (i.e., not a graduate degree), 70.3 percent earned their degree before turning 34 years of age. 31.4 percent were between 19 to 23 years old, 23.4% were 24 to 28, years old, and 15.5 % were ages 29 to 33 years old (Figure 6). For nurses who earned a graduate degree (as their highest attained nursing degree), 21.2 percent were obtained between ages 29 and 33, followed by 15.3 percent for ages 24 to 28, and 15 percent between ages 34 and 38. This trend reflects that individuals in the nursing profession are continuing their educational attainment into later life.



Figures 7 and 8 show age at the time of obtaining highest nursing degree by graduation year for non-graduate and graduate degrees. Prior to 1982, more than 80% of RNs who received a diploma, associate, or bachelor’s degree as their highest attained nursing degree obtained their degrees before age of 30 years old. The proportion of nurses obtaining their degree by age 30 declined to 50 percent between year 1992-1996 and remained steady afterward (Figure 7). For RNs that received a master’s or doctoral degree as their highest attained nursing degree, prior to 1982, the majority obtained their graduate level degrees before age of 30. After 1982; however, the majority of master’s and doctoral degree holders earned those degrees after the age of 30. From 2012-2016, approximately 20 and 25 percent of RNs received their master’s and doctoral degree between age 40-49 years old and after age 50. This trend reflects that individuals in the nursing profession are continuing their educational attainment into later life and is more evident for nurses who have attained their master’s or doctorate degree.

Figure 7: Age at highest attained nursing degree by graduation year (diploma, associate degree, and bachelor's degree)

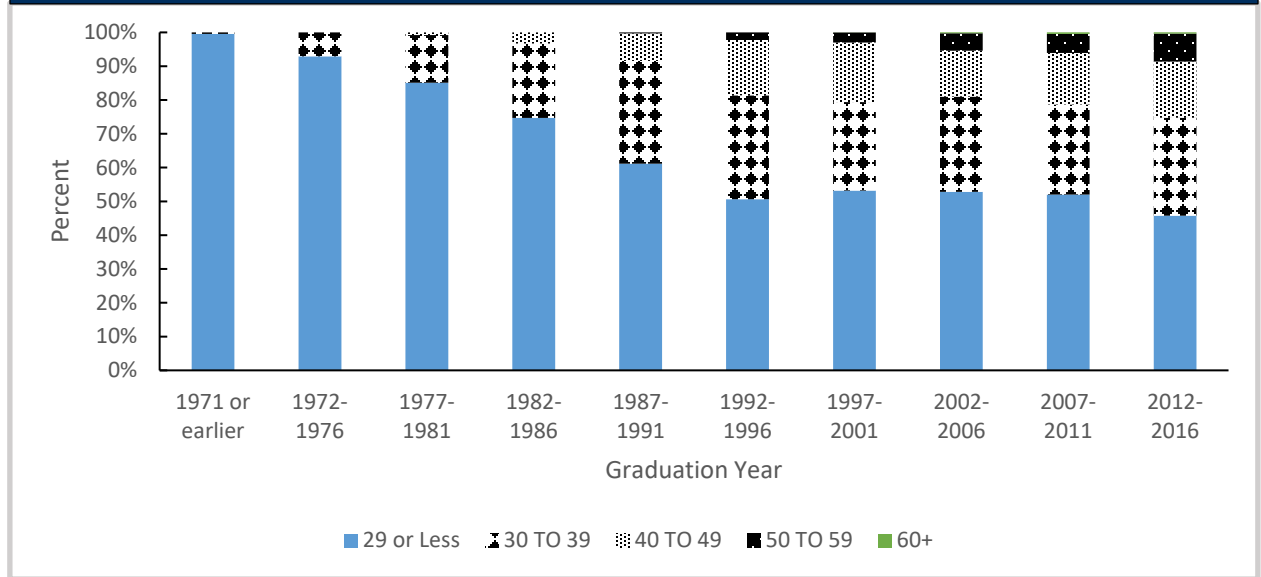
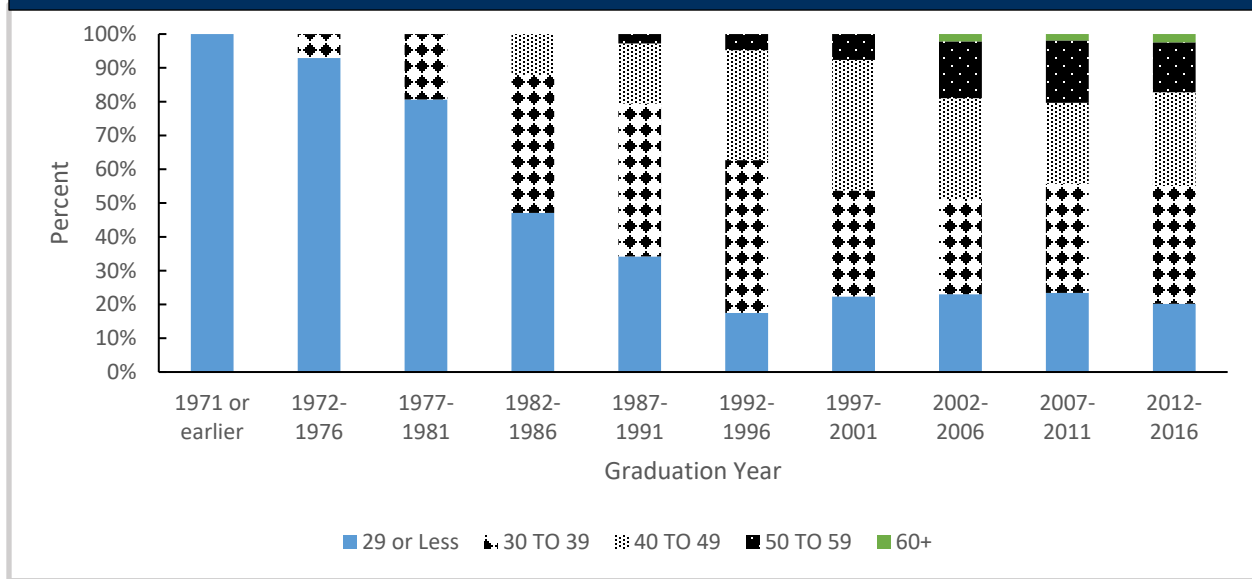


Figure 8: Age at the highest attained nursing degree by graduation year (master's or doctoral degree)



Male nurses accounted for 9.6 percent of total RNs in the 2018 NSSRN, an increase from 7.1 percent in the 2008 NSSRN study. When examining the highest attained nursing or nursing related degree by sex (Figure 9), the distribution of degree types were similar: the most common degree type were bachelor's degrees with the highest proportion (43.3% for male respondents and 44.7% for female respondents), followed by associate degrees (32.7% for male and 29.3% for female), master's degrees (17.9% for male and 17.4% for female), diplomas (3.5% for male and 6.8% for female), and doctoral degrees (2.4% for male and 1.8% for female).

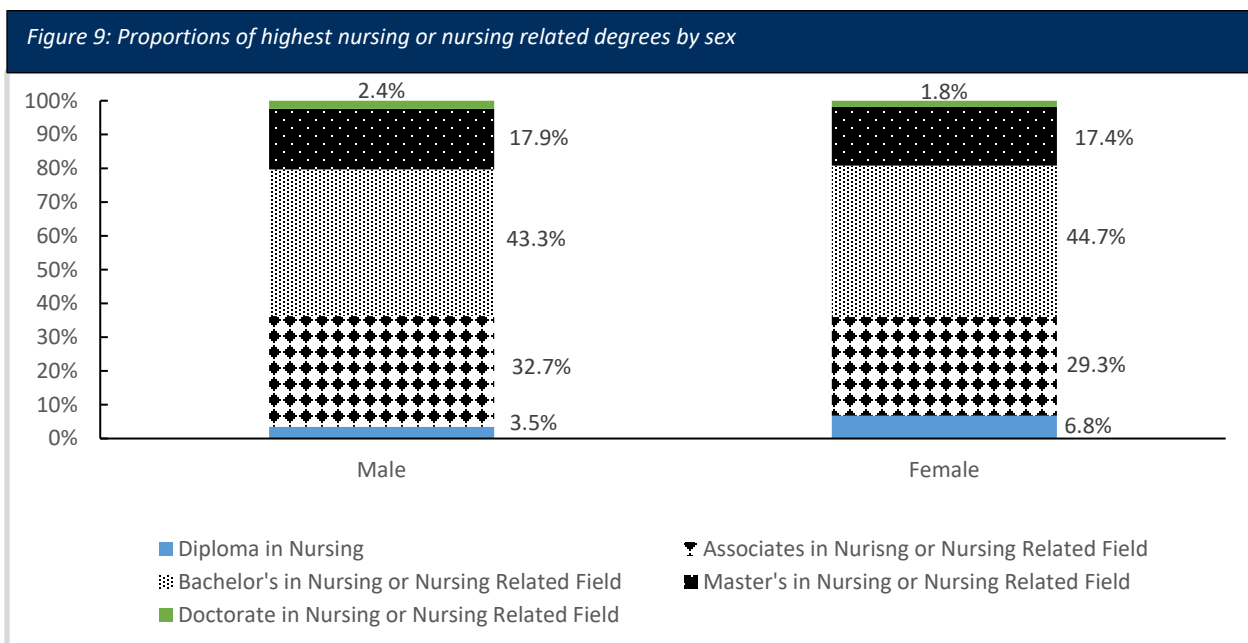


Table 1 below shows the average time (in years) between completion of initial and highest nursing or nursing-related degrees. For nurses who earned their initial RN education with an associate degree, 626,092 earned a bachelor's degree as their highest nursing degree with an average of 5.9 years between degrees. Another 224,099 nurses earned a master's degree with an average of 11.1 year in between. For those who had a bachelor's degree as their initial nursing training, 356,498 completed a master's degree with an average of 8.7 years between degrees, and nearly 40,000 completed a doctoral degree with an average of 13.9 years between degrees. Expectedly, these statistics suggest that nurses who attain their master's degree as their initial nursing education, attain a terminal, doctoral degree in the shortest time (8.3 years) when compared to nurses whose initial nursing education was an associate or bachelor's degree.

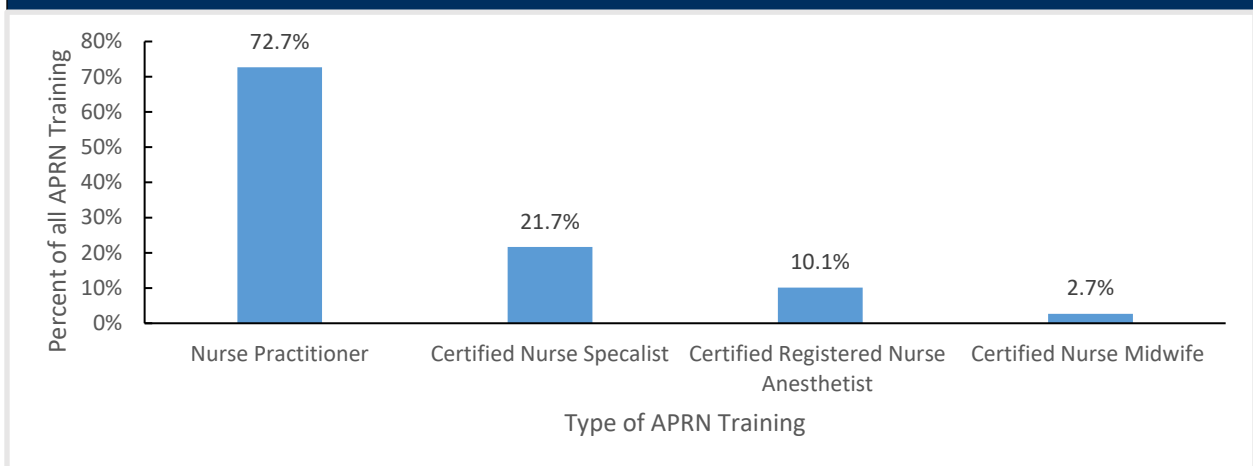
Table 1: Average time between completion of initial and highest nursing or nursing related degrees (in years)

Nursing Education	Highest: Bachelor's Degree	Highest: Master's Degree	Highest: Doctoral Degree
Initial: Associate Degree	5.9 years (n=626,092)	11.1 years (n=224,099)	14 years (n=29,865)
Initial: Bachelor's Degree	—	8.7 years (n=356,498)	13.9 years (n=39,470)
Initial: Master's or Doctoral Degree	—	2.8 years (n=33,012)	8.3 years (n=2,504)

### Advanced Practice Training

Registered nurses may also expand their scope of practice by earning a graduate degree and an advanced practice certification, including Nurse Practitioner (NP), Certified Nurse Specialist (CNS), Certified Registered Nurse Anesthetist (CRNA), and Certified Nurse Midwife (CNM). This survey estimates that 11.1 percent of RNs (n=439,527) have completed their training for advanced practice at least in one type, an increase from 8.1 percent in 2008. Figure 10 highlights the breakdown of all Advanced Practice Registered Nurse (APRN) training. NP training accounted for 72.7 percent of all RNs with APRN training, followed by CNSs (21.7%), CRNAs (10.1%), and CNMs (2.7%).

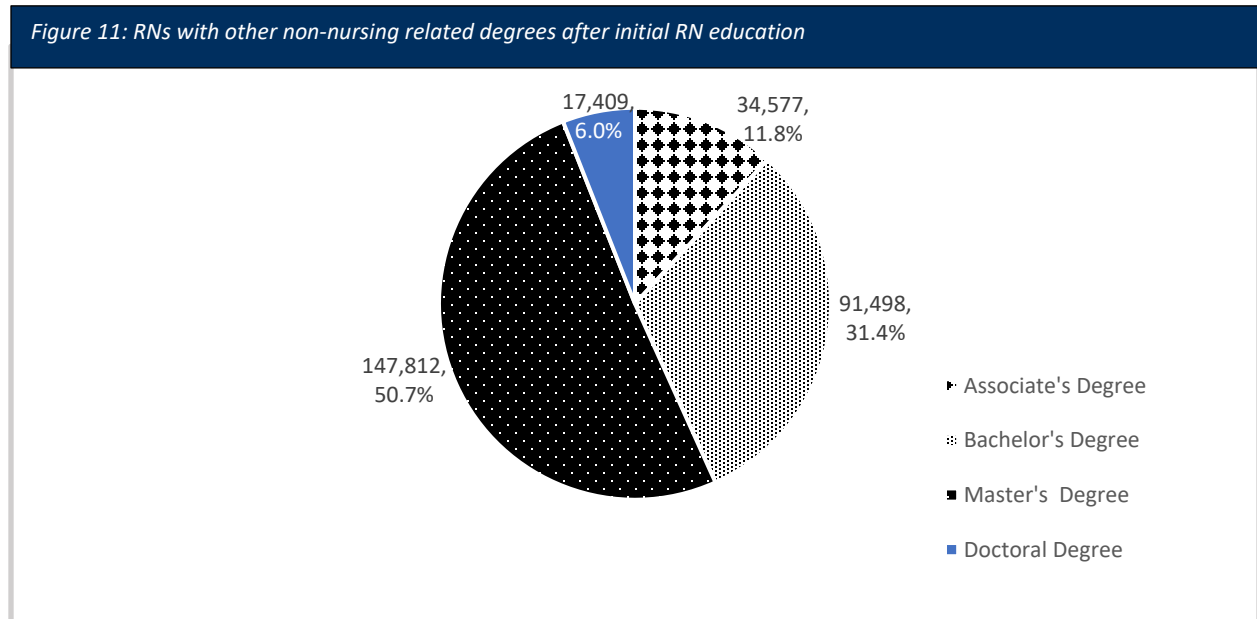
Figure 10: Distribution of Advanced Practice Registered Nurse training



\*The total percentage is over 100% due to some respondents having more than one type of APRN training completed

## Highest Attained Non-nursing Degree

While many respondents continued to study in the field of nursing, some nurses continued their studies in other disciplines. Approximately 291,296 RNs obtained a non-nursing related field after an initial nursing education. Of these degrees, 31.4 percent were bachelor's degrees and 56.7 percent were graduate degrees (*Figure 11*).



## Conclusion

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The 2018 NSSRN provides a glimpse into the nursing profession's education and training characteristics and how these have changed over time. The nursing workforce has continued to evolve over the last 50 years due to shifts in the practice of nursing, changes in policies and regulations, and numerous other factors. The number of nurses with advanced degrees are higher today than ever before. The number of bachelor's level, master's level, and doctoral nursing programs, as well as increasing enrollment in those programs, reflects a commitment to lifelong learning that has always been a cornerstone of the nursing profession. Not only are more nurses completing these programs, but they are also staying in the workforce longer.

Through exploring the education and training characteristics of the nursing workforce, key stakeholders in the nursing profession may continue to develop data-driven strategies to improve health outcomes and best meet the needs of the U.S. healthcare system.

## Appendices

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### Appendix A: About the NSSRN

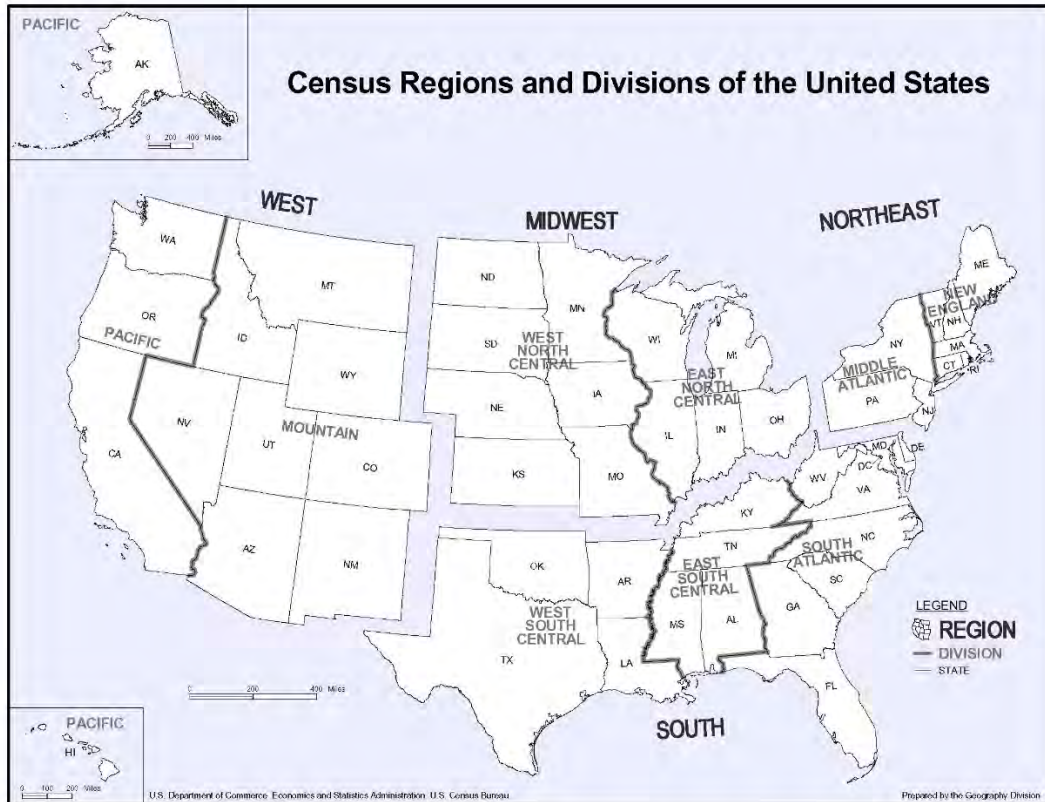
The National Sample Survey of Registered Nurses (NSSRN) is the longest running survey of registered nurses in US. Since the 1970s, NSSRN has served as the cornerstone of nursing workforce data. The NSSRN was previously fielded in 1977, 1980, 1984, 1988, 1992, 1996, 2000, 2004, and 2008. In collaboration with the US Census Bureau, the National Center for Health Workforce Analysis administered the 10<sup>th</sup> NSSRN data collection in 2018. The 2018 NSSRN used a sample of 102,690 RNs who were randomly selected from over 4.6 million licensure records provided by the National Council of the State Boards of Nursing and individual state boards. Of this sample, a total of 50,273 eligible RNs completed this survey.

The 2018 NSSRN is the first release following the redesign and merging of the previous NSSRN and the National Sample Survey of Nurse Practitioners (NSSNP). The latest survey, conducted with registered nurses (RNs) who held an active RN license as of December 31, 2017, utilized a sampling frame built from a list of registered nurses compiled from the National Council of State Board of Nursing (NCSBN) and from individual state Boards of Nursing (BONs). Sampling was done independently within each of the 50 states and the District of Columbia. There were two sampling strata per state: The first group is RNs holding an NP license to represent NPs and the second group is for all other RNs. To ensure the sample estimates are representative of the target populations of NPs and RNs in one or more states in the U.S., weights incorporated the differential probabilities of selection, and an adjustment for duplication in the sample, and nonresponse.

Information on the NSSRN and its data are available on the [National Center for Health Workforce website](#).

## Appendix B: US Census Regions and Divisions

### US Census Regions and Divisions of the United States<sup>6</sup>



#### Region 1: Northeast

Division 1: **New England** (Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, and Vermont)

Division 2: **Mid-Atlantic** (New Jersey, New York, and Pennsylvania)

#### Region 2: Midwest

Division 3: **East North Central** (Illinois, Indiana, Michigan, Ohio, and Wisconsin)

Division 4: **West North Central** (Iowa, Kansas, Minnesota, Missouri, Nebraska, North Dakota, and South Dakota)

#### Region 3: South

Division 5: **South Atlantic** (Delaware, Florida, Georgia, Maryland, North Carolina, South Carolina, Virginia, District of Columbia, and West Virginia)

Division 6: **East South Central** (Alabama, Kentucky, Mississippi, and Tennessee)

Division 7: **West South Central** (Arkansas, Louisiana, Oklahoma, and Texas)

#### Region 4: West

Division 8: **Mountain** (Arizona, Colorado, Idaho, Montana, Nevada, New Mexico, Utah, and Wyoming)

Division 9: **Pacific** (Alaska, California, Hawaii, Oregon, and Washington)

<sup>6</sup> [US Census Regions and Divisions of the United States](#). US Census Bureau, US Department of Commerce.