



Advanced Practice Registered Nurse (APRN) 2016 Workforce Survey

Acknowledgements

The Illinois Nursing Workforce Center would like to express our gratitude to the individuals and organizations that have made this report possible. We would especially like to thank:

- The Governor of Illinois, Bruce Rauner; the Secretary of the Illinois Department of Financial and Professional Regulation (IDFPR), Bryan A. Schneider; and the Director of Professional Regulations, Jessica Baer, for their support and interest in the study of nursing workforce.
- The Illinois Nursing Workforce Center Advisory Board:
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Completed in 2016, under the leadership of the Illinois Nursing Workforce Center Advisory (INWC) Board of Directors, this survey was the first Illinois Advanced Practice Registered Nurse (APRN) workforce study offered with individual on-line licensure renewal. The acquisition of data was accomplished through the collaboration of the following IDFPR sections: Licensing, the Division of Nursing, the Illinois Nursing Workforce Center and the State of Illinois Department of Innovation and Technology.

We owe a special thanks to: the INWC Data Workgroup: Kathleen R. Delaney, PhD, APRN, PMH-NP — Chairperson; Julie Bracken, MSN, RN; Linda D. Taylor, PhD, RN, CNE; and Corinne Haviley, PhD, MS, RN, who provided many hours of time in the production of this report. Thank you as well to IDFPR Michele Bromberg, MSN, RN; Dennis Jung, Katherine A. Parker and Linda B. Roberts, MSN, RN. Finally, thank you to the Illinois Society Advanced Practice Nursing for encouraging their members to complete the survey.

Special thanks to the Advanced Practice Registered Nurses licensed in Illinois who responded to the survey. The feedback provided will make a significant contribution to planning health services in Illinois, specifically those focused on the nursing workforce.

Executive Summary

The results from the 2016 Advanced Practice Registered Nursing workforce survey are reported in this document. The survey captured data on the demographics, education, state distribution, job activities and practice foci of Advanced Practice Registered Nurses (APRNs) in Illinois. The survey was conducted during licensure renewal, with two additional email requests for participation post license renewal. Participation was voluntary, 26.47% or 3,113 of the 11,671 Illinois APRNs completed the survey

General overview: Data on the characteristics, supply, and distribution of APRNs in the State of Illinois is essential to expanding access to care and planning for provision of essential primary and other health care services. This report contains data on the demographics of Illinois' current APRN workforce, including type of APRN, the relative numbers of APRNs in each age group, their cultural diversity, and educational preparation. The data quantifies the services APRNs provide, the process that is used to bill for these services, and how the required collaborative agreement with the Illinois physician(s) is maintained. Finally, the survey captures APRN distribution and type of APRN density throughout the state as well as their work with a broad range of populations.

Aging workforce: The report presents important information about the aging of the Illinois APRN workforce, overall 42.5% respondents are over the age of 55 years. However, the average age varies based on type of APRN. There are four types of APRNs: Certified Registered Nurse Anesthetist (CRNA), Clinical Nurse Specialist (CNS), Certified Nurse Midwife (CNM) and Certified Nurse Practitioner (NP). For example, 42% of Certified Nurse Practitioners (NPs) are less than 45 years of age; 49.3% of CNMs and 52% CRNAs are less than 55 years of age. Interestingly, years of experience as an APRN does not closely correlate with the age of the APRN -- suggesting the diverse career trajectories of APRNs.

<u>Geographic distribution</u>: The report maps out the type of APRN and where they are living in the state, documenting that APRNs generally practice in areas of high population density. This population map was created from the IDFPR licensure database and includes all 11,671 APRNs. While of great interest it is difficult to map APRN practice sites in terms of Medically Underserved Areas (MUAs). The broad county-wide designation of an MUA masks the diversity of underserved areas within the region -- best indicated by a zip code or census track within a county. The current data are an excellent start toward efforts to map the practice of APRNs, and their provision of care to underserved areas of the State.

<u>Increasing diversity</u>: In contrast to the increase in cultural and racial diversity in the state of Illinois, data indicate a less culturally diverse Advanced Practice Registered Nursing workforce.

Though the majority, 86.81% of APRNs are White, a higher per cent of APRNs under the age of 55 years are from cultural and racially diverse backgrounds compared to APRNs in the older age range. For example, 44% Hispanic/Latino APRNs are under the age of 45 years, 52.1% of the Asian APRNs are 45 years or younger, while 39% of Black or African American APRNs are younger than 45 years of age. This differs from the 2015 Illinois APRN survey which did not report this amount of diversity among younger APRNs.

Specialty/Work Place Characteristics/Billing: The survey respondents reported on their nursing specialty, billing arrangements, and workplace setting. The respondents were provided a choice amongst job settings as well as the option to write in settings that were not listed. Approximately 50% of respondents practice in ambulatory settings; at least 30% practice in a hospital/inpatient setting. Some APRNs indicated time was split between hospital and outpatient settings. In line with Illinois regulation, APRNs maintain collaborative agreements but with a range of physician-collaborator relationships. Forty-three percent of respondents bill exclusively under their National Provider Identifier (NPI) number; this was followed by 24% billing under the clinic/facility number.

Summary: The 2016 Illinois APRN survey data will be extremely valuable as health care planners project the human health care capital that will be needed in Illinois. These data will be of great use in estimating the current APRN supply, their demographics, and practice specialties. The anticipated shortage of primary care providers is particularly acute in Illinois. Focused workforce planning is urgently needed to assure access to healthcare for Illinois residents. The full report is available on the Illinois Nursing Workforce Center website http://nursing.illinois.gov/ResearchData.asp

U.S. Department of Health and Human Services, Health Resources and Services Administration, National Center for Health Workforce Analysis. Highlights From the 2012 National Sample Survey of Nurse Practitioners. Rockville, Maryland: U.S. Department of Health and Human Services, 2014.

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About the Data

The primary source of data for this report was a survey offered to individual Advanced Practice Registered Nurses completing the Illinois on-line licensure renewal. The renewal period ran from March 14 – May 31, 2016. There were 11,760 Advanced Practice Registered Nurses/APRNs in Illinois as of June 7, 2016; there was an 8.5% response rate during this renewal period, 1,002 participants.

The Illinois Nursing Workforce Center (formerly the Illinois Center for Nursing) Advisory Board worked with the Illinois Department of Financial and Professional Regulation Licensing section and the DoIT agency to redistribute the survey via email to increase participant response. A request for participation was sent to the 11,000+ Illinois APNs via email twice, on July 29, 2016 and August 11, 2016. The Illinois Society for Advanced Practice Registered Nursing sent email notification to approximately 5,000 members that they would receive a survey participation request on July 29 and September 29, 2016. The survey was closed on October 31, 2016; the combined response rate totaled 3,113 (26.47%) APRNs.

The survey included 63 questions consistent with the Health Resources and Services Administration (HRSA) designed National Sample Survey of Nurse Practitioners (NSSNP) with additions on language proficiency, billing practices, place-of-work zip codes, retirement, and professional collaboration. A full list of survey questions is provided in Appendix A. Information from the survey is categorized into five areas in this report: demographic (including age), human capital (education, specialties, earnings), employment, job characteristics (settings, services, collaboration), and geographic (across all 102 Illinois counties). The geographic distribution of APRNs was completed on December 6, 2017 and includes all 11,671 APRNs licensed in Illinois on that date. Geographic distribution is also divided based on type of APRN.

Demographics

Demographics are "the statistical characteristics of human populations..." https://www.merriam-webster.com/dictionary/demographic. This section examines the breakdown of select characteristics, such as age, sex, race and ethnicity among the population of Advanced Practice Registered Nurses (APRN) in Illinois.

The overall distribution of APRN survey participants by selected age categories is described below. Data were derived from participant responses to a question asking their date of birth (non-response 2.7%). The age ranges of respondents are similar to the APRN age range in the Illinois Department of Financial and Professional Regulation (IDFPR) licensure data base. Since the age ranges differ based on type of APRN, it is useful for each category to be reviewed separately.

Figure 1 apportions age by type of Advanced Practice Registered Nursing category. It illustrates that for three of the four types of APRNs, approximately one third are 44 years of age or younger. For example, 29.8% of Certified Registered Nurse Anesthetists (CRNAs) are under 44 years of age. Among the other categories, 31.43% of the Certified Nurse Midwives (CNMs) are younger than 44 years and a full 42% of Certified Nurse Practitioners (NPs) are younger than 44 years of age. The majority (66.93%) of Clinical Nurse Specialists (CNSs) are over 55 years of age. The growth of the CNS workforce may be impacted by the limited number of Illinois universities and colleges that offer the CNS certification.

Figure 1 Type of Advanced Practice Nurse Registered (APRN) and age

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Type of Advanced	26-34	35-44	45-54	55-64	65-70	71+	Total
Practice Registered Nurse	years	years	years	years	years	years	
Certified Registered	6.94%	23.02%	22.02%	38.33%	9.72%	4.96%	16.86%
Nurse Anesthetist (CRNA)	35	116	111	168	49	25	504
Certified Clinical	2.31%	7.69%	23.08%	47.95%	15.13%	3.85%	13.04%
Nurse Specialist (CNS)	9	30	90	187	59	15	390
Certified Nurse	7.86%	23.57%	17.86%	38.57%	12.14%	0.00%	4.68%
Midwife (CNM)	11	33	25	54	17	0	140
Certified Clinical	16.67%	25.46%	22.19%	26.69%	7.00%	1.99%	65.42%
Nurse Practitioner (CNP)	326	498	434	522	137	39	1,956
Total responses	381	677	660	931	262	79	2,990

Figure 1: No response: age= 84

Figure 1: No response: type of APRN= 77

Diversity, race and ethnicity reported by survey respondents are illustrated in Figure 2 (below). To capture both race and ethnicity respondents answered the question "are you Hispanic or Latino"; followed by the question "What is your race/ethnicity (mark all that apply)". Summary responses are illustrated in Figure 2 below. (Because U.S. Census Bureau regards the Hispanic ethnonym as a culture, irrespective of race, these data may represent duplicate counts. https://suburbanstats.org/population/how-many-people-live-in-illinois)

The distribution of racial and ethnic diversity of the Illinois Advanced Practice Registered Nurse (APRN) workforce is less robust than the diversity of the general population of the state. The United States (U.S.) Census Bureau in July 2016 reported that the Illinois population totaled 12.8 million.

Of the 12.8 million Illinois residents, there are 15% Black/African American. In contrast, Black/African American race was indicated by only 6.3% of APRN respondents. Hispanic/Latinos comprised 17% of the population of Illinois but only 3.1% of survey respondents. Survey responses indicated a vast majority of APRNs are White (86.81%). Schools of nursing and workforce incentives should seek to recruit and retain student cohorts reflective of the diversity of the general population.

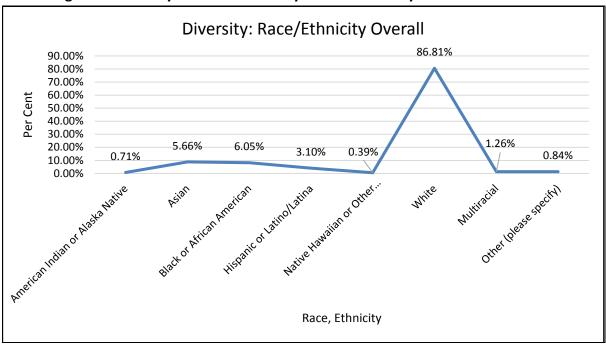


Figure 2: Diversity: race and ethnicity overall summary

Figure 2: No response: ethnicity, Hispanic or Latino= 20

Figure 2: No response: race = 21

Racial and ethnic diversity increased among younger APRN respondents. A higher per cent of APRNs under the age of 55 years are from cultural and racially diverse backgrounds compared to APRNs in older age ranges. For example, 44% Hispanic/Latino APRNs are under the age of 45 years and 39% of Black or African American APRNs are younger than 45 years of age. This is a new result not indicated in the previous 2015 APRN report. The 2015 report did not demonstrate a difference in diversity based on age.

Figure 3: Diversity: Hispanic or Latino ethnicity by age

Diversity: Are you Hispanic or Latino	26-34 years	35-44 years	45-54 years	55-64 years	65-70 years	71+ years	Total N=3,013
Hispanic or Latino Yes (per cent)	11.96%	32.61%	27.17%	19.57%	7.61%	1.09%	3.05%
	11	30	25	18	7	1	92
Hispanic or Latino	12.67%	22.46%	21.98%	31.39%	8.80%	2.70%	96.95%
No (per cent)	370	656	642	917	257	79	2,921
Total responses	381	686	667	935	264	80	3,013

Figure 3 Note. Respondents were asked to mark all that applied for Race/Ethnicity. If multiple options were selected, respondents were coded to be mutually exclusive. Hispanic is a culture regardless of race so respondent options for Hispanic were not included in the Multiracial category and therefore represent duplicate counts. Figure 3: No response = 20.

Figure 4: Diversity: Race by age

Diversity: by Age	26-34	35-44	45-54	55-64	65-70	71+	Total
And Race	years	years	years	years	years	years	N=2,997
American Indian or	9.52%	14.29%	19.05%	38.10%	19.05%	0.00%	0.69%
Alaska Native (percent)	2	3	4	8	4	0	21
Asian	14.37%	37.72%	32.93%	10.18%	2.99%	1.80%	5.49%
	24	63	55	17	5	3	167
Black or	12.09%	27.47%	26.37%	23.63%	9.89%	0.55%	5.98%
African American	22	50	48	43	18	1	182
Native Hawaiian or	16.67%	33.33%	33.33%	8.33%	0.00%	8.33%	0.39%
Other Pacific Islander	2	4	4	1	0	1	12
White	12.61%	21.19%	21.15%	33.23%	8.96%	2.86%	86.20%
	331	556	555	872	235	75	2,624
Multiracial	13.16%	23.68%	28.95%	21.05%	13.16%	0.00%	1.25%
	5	9	11	8	5	0	38
Total responses	378	675	662	939	265	78	2,997

Figure 4: No response = 21

Language proficiency beyond English is a related issue with potential implications for effective healthcare provision to diverse populations. Out of all APRN survey respondents, 22.3% are proficient in a second language and approximately the same number use this second language at work caring for patients.

Respondents were asked "approximately when do you plan to retire?" Responses, below, indicate that more than half of survey participants (57%) plan to stay in the workforce beyond 10 years. Seventeen percent (17%) indicate they will retire within the next 10 years. This is a slight increase from the 2015 Illinois Healthcare Action Coalition APRN Survey report where 46.3% of the respondents indicated a plan to stay in the workforce more than 10 years.

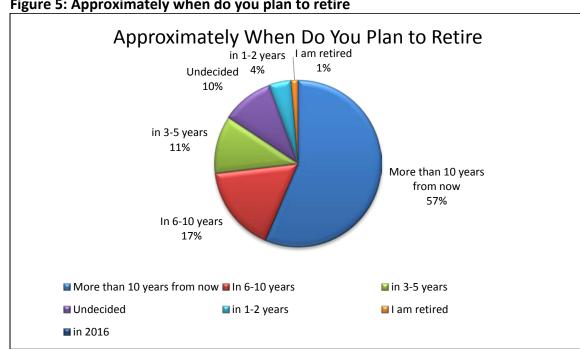


Figure 5: Approximately when do you plan to retire

Figure 5: No response = 524

Human Capital

Human capital refers to the stock of knowledge, education, experience, habits, social and personality attributes, including creativity, embodied in the ability to perform labor so as to produce economic value.

In the highly skilled workplace environment of healthcare delivery, patient cases are more complex than in the past, the population is aging, and the technology is increasingly sophisticated. Taken together, these factors mean that the ongoing development of human capital is increasingly important to ensure high quality of care and positive patient outcomes.

The skills, knowledge, education, talents and experiences of Advanced Practice Registered Nurse (APRN) employees (their human capital) are an extremely important intangible asset to the employer and to the entire healthcare system. Human capital is cultivated from continuing professional development, including academic coursework, conferences, workshops, and experience.

Advanced educational credentials are a requirement of the Advanced Practice Registered Nurse (APRN) workforce. In Illinois a minimum requirement of APRN licensure is a masters' degree in nursing and APRN certification. This is reflected in the survey responses: 99% respondents have APRN certification and 93% have a masters' degree or higher. Less than 7% respondents reported completing a "certificate program" as preparation for licensure as an APRN – these individuals have been grandfathered into Illinois APRN licensure for many years.

In Illinois Advanced Practice Registered Nurses (APRNs) must first be licensed in Illinois as a registered nurse (RN) prior to becoming licensed as an APRN. The Illinois Nurse Practice Act (NPA) mandates for licensure as an advanced practice registered nurse in Illinois, is a minimum of a master's degree in nursing (IL NPA Article 65, Section 65-5(4)). Figure 6 below shows the types of degrees that Illinois APRNs have earned, beginning with the educational degree that was received when first licensed as a RN. Respondents checked off that multiple degrees were earned, the degree obtained with both an RN license and APRN license.

Approximately 35% of APRNs began their nursing education through a community college with an associate degree in nursing. 13% respondents received a diploma in nursing, this low number could be because currently there is only one RN diploma program in Illinois. 86.51% respondents have a bachelor's degree in nursing; for some the bachelor's degree was the first degree obtained prior to becoming licensed as a nurse (RN). For others, who received nursing education through a community college or a diploma program, the bachelor's degree was obtained post-RN licensure. 88.20% of the respondents have a master's degree in

nursing. 11.09% of the respondents have completed additional education resulting in a doctorate degree with 7.05% of those being the Doctorate in Nursing Practice (DNP) a practicefocused doctoral degree that prepare experts in specialized advanced nursing practice. There are a variety of education articulation pathways amongst nursing education programs leading to graduate education to practice as an Advanced Practice Registered Nurse. This is reflected in the number and type of degrees that Illinois APRNs have acquired prior to becoming licensed as an APRN.

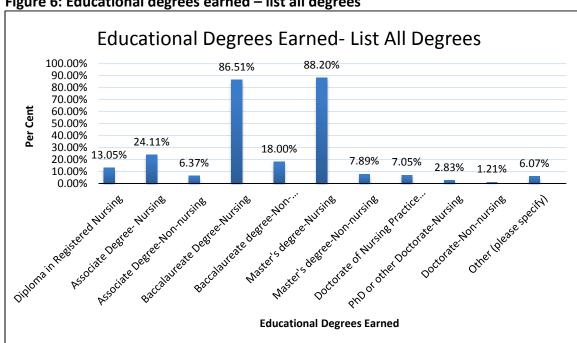


Figure 6: Educational degrees earned – list all degrees

Figure 6: No response = 147

The majority (55.7%) of respondents indicate becoming licensed as an APRN in the past 10 years (Figure 7 below). This growth parallels the entire population of licensed Illinois APRNs. (Illinois Nursing Workforce Center http://nursing.illinois.gov/PDF/2018-01 to 2012 APNReport for Website.pdf). Figure 7 illustrates that in 2008 there were 6,164 Illinois APRNs, as of January 23, 2018 there are 13,819 APRNs, a 44% increase in the total number of active APRN licenses including all APRN specialties.

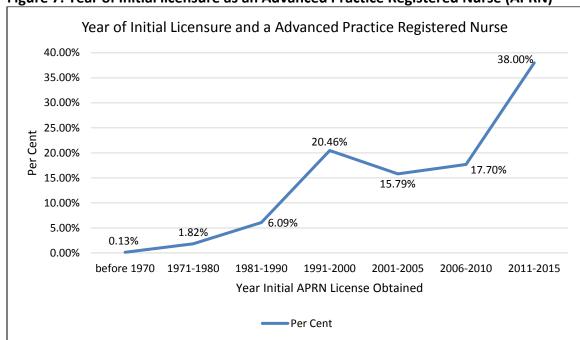


Figure 7: Year of initial licensure as an Advanced Practice Registered Nurse (APRN)

Figure 7: No response = 142

Figure 8: Type of APRN Specialty – data from the Illinois licensure database*

rigure 6. Type of APKN Specialty – data from the lillions licensure database									
Type of APRN Specialty	2001	2007	2012	2013	2014	2015	2016	2017	2018
			Jan	April	Feb	March	Jan	Feb	Jan 23
CNS			1.023	1,018	1,054	1,034	1,081	1,016	1,056
CRNA			1,924	1,746	1,883	1,849	1,997	1,945	2,076
			,	·	•	,	,	,	,
CNM			406	416	447	445	486	489	525
									0_0
CNP			4,682	5,198	5,917	6,411	7,697	8,777	10,162
0.41			.,002	0,.00	0,0	0,	.,	0,	10,102
Tatal ADDNIa	4.070	0.000	7.000	0.070	0.004	0.700	44.004	40.007	40.040
Total APRNs	1,976	6,838	7,833	8,378	9,301	9,739	11,261	12,227	13,819

Figure 8: number of APRNs indicated reflects the total number of APRNs licensed in Illinois on the date listed. Type of APRN was not available until 2012.

Data regarding APRN employment within medical specialty areas were categorized by practice specialties in the areas of Primary Care, Total Subspecialties, Surgical, and Other Specialty. The category of Total Subspecialties includes the most APRNs (37%) (not shown in Figure 9 but calculated below). Similar to the 2015 Illinois Healthcare Action Coalition APRN survey, there are specialty areas of significant need (Psychiatric- Mental Health, Long Term Care) which contain a relatively small number of licensed APRNs.

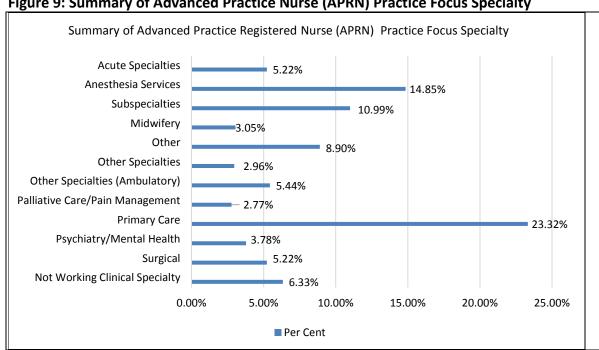


Figure 9: Summary of Advanced Practice Nurse (APRN) Practice Focus Specialty

Figure 9: No response = 258

A summary of Advanced Practice Registered Nurse (APRN) Practice Focus Specialty is described in Figure 9 (above); this summary reflects a combining of practice specialty responses based on similarities in specialty, acuity or geography-where the care is provided. Certain specialties are shown separately due to the uniqueness of their care or setting (e.g. Anesthesia Services, Emergency, Midwifery, Palliative Care, Psychiatry/Mental Health). The specialties that were combined are as follows:

- Acute Specialties: Hospitalist (1.51%), Intensive Care (1.61%), Neonatal (1.75%)
- **Anesthesia Services:** (14.84%)
- Emergency (2.91%)
- **Subspecialties**: Advance Disease Management (0.25%), Cardiology (3.43%), Endocrinology (1.19%), Gastroenterology (1.02%), Hematology/Oncology (2.77%), Infectious Disease (0.74%), Pulmonary/Respiratory (0.74%), Renal/Nephrology (0.67%), Rheumatology (0.18%)
- **Midwifery:** (3.05%)
- Other: respondents listed individual specialty titles (8.90%)

- Other Specialties: Allergy and Immunology (0.11%), Dermatology (0.46%), Interventional Radiology (0.14%), Neurology (1.09%), Wound/Ostomy (1.16%)
- Other Specialties (Ambulatory Settings): Long Term Care (0.95%), Occupational Health (0.88%), Rehabilitation (0.70%), School Health (0.67%), Urgent Care (2.24%)
- Palliative Care (2.77%)
- **Primary Care** includes Pediatrics through Gerontology/Geriatrics: Internal Medicine (5.25%), Family Practice (12.43%), Geriatrics (2.31%), General Pediatrics (2.14%), Pediatric Specialties (1.19%), OB/GYN Women's Health (4.17%)
- Psychiatric/Mental Health (3.78%)
- **Surgical:** General Surgery (1.47), Urological Surgery (0.42%), Orthopedic Surgery (1.05%), Other Surgery (2.28%)
- Not Working in a Clinical specialty: (6.83%)

Overall pre-tax earnings reported by respondents are illustrated in Figure 10. The median income for APRNs in Illinois with full time hours is within the \$90,000 to \$95,000 range. That finding is consistent with national data from the United States Department of Labor, Bureau of Labor Statistics, which reports that the "median annual wage for nurse anesthetists, nurse midwives, and nurse practitioners was \$107,460 in May 2016. The median wage is the wage at which half the workers in an occupation earned more than that amount and half earned less. The lowest 10 percent earned less than \$74,300, and the highest 10 percent earned more than \$175,170." (https://www.bls.gov/ooh/healthcare/nurse-anesthetists-nurse-midwives-and-nurse-practitioners.htm#tab-5)

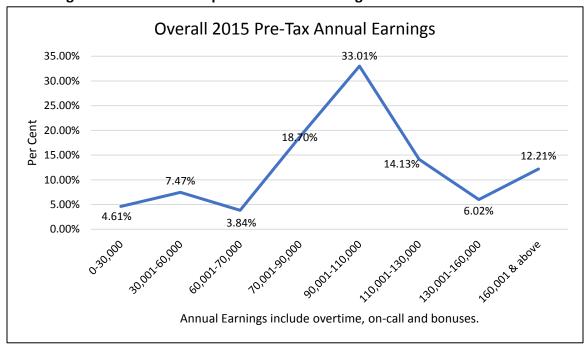


Figure 10: Overall 2015 pre-tax annual earnings

Figure 10: No response = 771

Information about annual salaries was reported by approximately 75% of the survey respondents, and information about typical weekly hours for primary positions was provided by nearly 80% of survey respondents. Among the many survey questions, participants were asked about the number of hours worked in a typical work week, how and when they were paid, the estimated pre-tax annual earnings, and whether or not they worked overtime and on-call hours. The majority (45.15%) of Illinois APRNs reported that they work one job full-time, 31-40 hours per week, and are a salaried employee providing direct patient care. Approximately twenty-eight percent of APRNs work between 41-50 hours per week; 6.15% work more than 50 hours per week. Approximately 21% respondents indicated that they worked a second job.

Of the 3,113 total participants, 2,487 answered this question and 626 did not respond, an 80% response. Salaries at the lower end of the scale are associated with employment at less than full-time hours.

Respondents indicated 2015 pre-tax annual earnings, including overtime, on-call earnings, and bonuses. Those responses were categorized by salary ranges and by APN type.

Figure 11: Type of Advanced Practice Registered Nurse (APRN) and salary range

Type of Adv	Type of Advanced Practice Registered Nurse (APRN) and Salary Range								
Type of Advanced Practice Registered Nurse	\$0- 30,000	\$30,001 -60,000	\$60,001- 70,000	\$70,001- 90,000	\$90,001 -110,000	\$110,001 -130,000	\$130,001 -160,000	\$160,000 and above	Total
Certified Registered Nurse Anesthetist	2.54% 10	2.29% 9	1.27% 5	2.04% 8	5.34% 21	5.09% 20	16.28% 64	65.14% 256	16.78% 393
Clinical Nurse Specialist	2.62% 7	8.99% 24	3.75% 10	23.60% 63	42.70% 114	13.48% 36	3.00% 8	1.87% 5	11.40% 267
Certified Nurse Midwife	2.61% 3	6.09% 7	5.22% 6	24.35% 28	30.43% 35	25.22% 29	2.61% 3	3.48% 4	4.91% 115
Certified Nurse Practitioner	5.62% 88	8.62% 135	4.40% 69	21.63%33 9	38.48% 603	15.70% 246	4.21% 66	1.34% 21	66.91% 1,567
Total Responses	108	175	90	438	773	331	141	286	2,342

Figure 11: No response = 771

Responses to the survey show that Advanced Practice Registered Nurses (APRNs) are typically paid an annual salary. Nearly 70% indicate they receive an annual salary rather than an hourly rate or a percentage of billing. This, too, is consistent with the national trend, according to the U.S. Bureau of Labor. The Bureau of Labor Statistics reports that "most advanced practice registered nurses (APRNs) work full time. APRNs working in physicians' offices typically work during normal business hours. Those working in hospitals and various other healthcare facilities may work in shifts to provide round-the-clock patient care. They may work nights, weekends, and holidays. Some APRNs, especially those who work in critical care or those who deliver babies, also may be required to be on call."

Of those APRNs who responded to working "on call", nearly 39% reported that they do take evening or weekend call. APRNs (73%) also reported that they are either are not compensated for taking evening or weekend call, or taking call is included as part of the annual salary compensation.

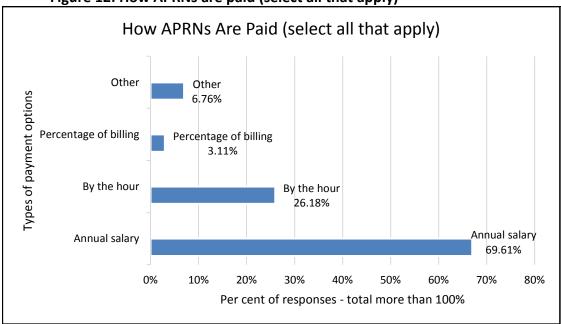


Figure 12: How APRNs are paid (select all that apply)

Figure 12: No response = 569

Geography

Survey participants are asked to provide "the zip code(s) where you practice in your principal position." There are 102 counties in Illinois. While only 349 participants did not respond to the question in 2015 when asked for home zip code, in the 2016 survey 2,671 did not respond to this question when asked for up to three workplace zip codes. To show where Advanced Practice Registered Nurses (APRN)s live in Illinois, the Illinois Nursing Workforce Center partnered with the Illinois Department of Financial and Professional (IDFPR) licensing agency on November 30, 2017, and obtained home zip codes for all 11,671 Illinois APRNs.

The distribution of APRNs overall coincides with the population distribution in the state of Illinois. Figure 13 (below) is a heat map that illustrates the survey respondents reported home locality by county. Appendix B is a numerical grid of all 102 Illinois counties and the distribution of APRNs; this is the weblink to the heatmaps below https://public.tableau.com/shared/8RJD35KRT?:display_count=yes

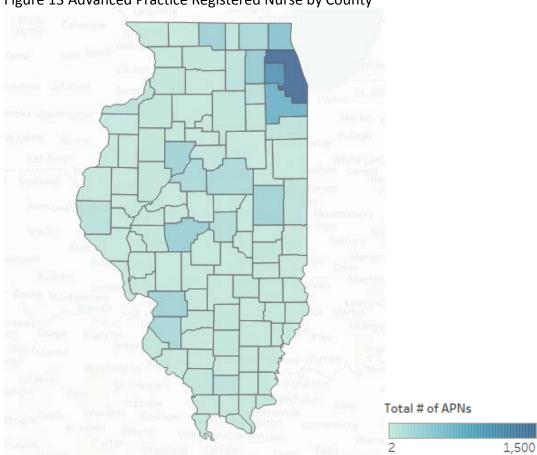


Figure 13 Advanced Practice Registered Nurse by County

The following figures illustrate the distribution of the type of APRNs (CNS, CNM, CNP, CRNA) in the state of Illinois by home address.

Figure 14: CNS by County

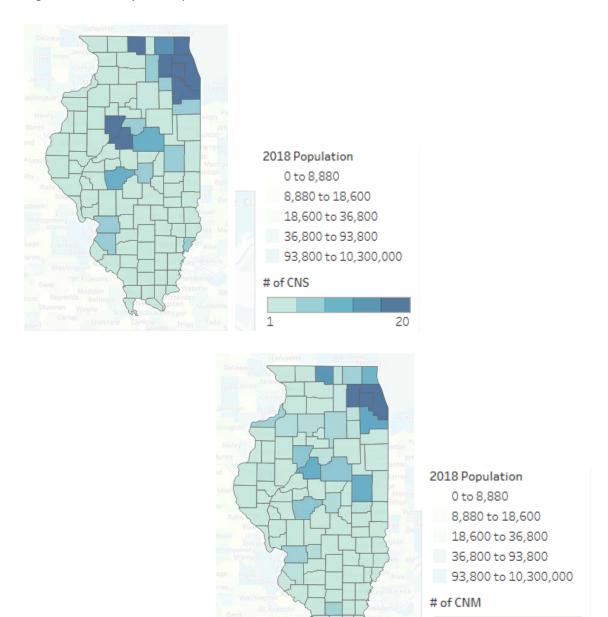
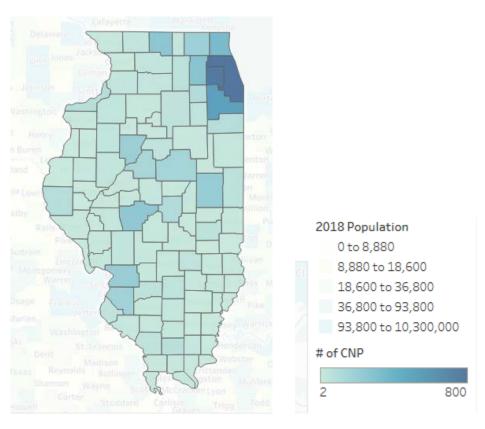
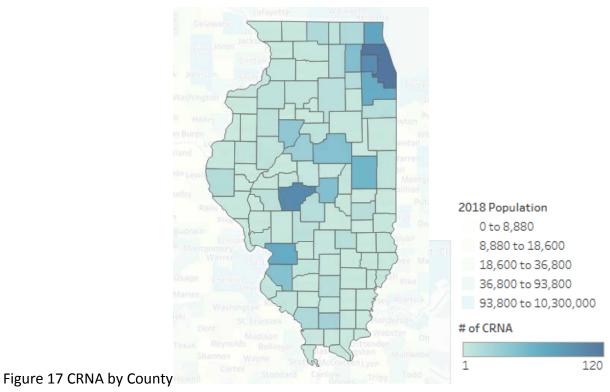


Figure 15 CNM by County

Figure 16 CNP by County





Employment, Job Characteristics

The Advanced Practice Registered Nursing (APRN) workforce survey offers a valuable range of questions about the workplace environment. These include primary job setting, services provided, reimbursement and degree of professional collaboration.

The majority (79.3%) of APRNs have one full-time job, on average work 31-40 hours per week, and are paid by annual salary. The Advanced Practice Registered Nurse (APRN) salary and hours worked can be reviewed in the Human Capital section of this report. This section will focus on the unique aspects such as the scope and role of the APRN.

The majority of APRN respondents, (81.99%), indicated that their primary position as an APRN is in clinical practice providing direct patient care. The position or role with the next highest responses were: APRN faculty requiring APN credential (3.82%), administrator requiring APRN credential (2.44%), APRN clinical educator (2.13%) and other (2.76%) which indicated a few responses in many categories. The patients and communities that the APRNs care for are in many different settings. The APRN specialty or area of expertise (earlier section) is reflected in the many different settings where patients are seen.

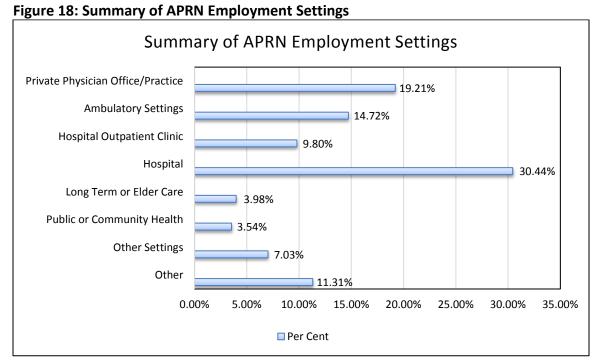


Figure 18: No response = 593

The practice settings in the survey were grouped into five broad categories: ambulatory, hospital, long term and elder care, public or community health and other. A majority of APRNs (30.44%) work in a hospital setting. Amongst the various hospital settings, most APRNs work either in an inpatient unit (9.8%) or emergency department (2.98%).

An ambulatory setting was the practice area indicated by 22.93% of survey respondents. Of those, 9.8% worked in a hospital outpatient clinic; 5.4% worked in a federal clinic (FQHS, VA, Military, HIN, HIS); and the remainder worked in an urgent care clinic, ambulatory surgery center, retail based clinic or nurse managed clinic. A small per cent of APRNs work in the long term or elder care settings (3.98%); these settings include: long term care facility, advance disease management, hospice, palliative care or home care agency. There are 3.54% of APRNs working in a public or community health setting, where survey options included: community clinic, correctional facility, health department, mental health center or rural health clinic. Other options included: academic (university/college) education program (3.69%), school/college health service (1.87%) as well as a few other settings. The final response option to designate a setting allowed the respondent to write a comment (11.31%); approximately a third of the comments indicated the APRN worked in surgery. This response option will be added to the next survey.

The APRN employment settings were combined as follows:

- Private physician office/practice: (19.21%)
- Ambulatory settings: Private APRN practice (1.59%), Nurse Managed clinic (0.63%), Retail based clinic (2.18%), Urgent care clinic (2.10%), Ambulatory surgery center (2.98%), Federal clinic (FQHC, VA, Military, NIH, IHS) (5.24%)
- Hospital outpatient clinic: (not an Emergency department) (9.8%)
- Hospital inpatient settings: Hospital inpatient unit (24.29%), Hospital emergency department (2.98%), Federal hospital (Military, VA, NI, HIS) (1.23%), Hospital administration (0.99%), Hospital educator/education of staff and/or patients (0.95%)
- Long term and elder care: long-term care facility (2.54%), Advance disease management (0.44%), Hospice (0.16%), Palliative care (0.48%), Home care agency (0.36%)
- **Public or Community Health**: Community clinic (1.43%), Correctional facility (0.28%), Health department (0.56%), Mental health center (0.48%), Rural health clinic ().79%)
- Other settings: Academic (university/college) education program (3.69%), Health maintenance organization/managed care (0.60%), Occupational/employee health (0.87%), School/college health service (1.87%)
- Other (written descriptions): (11.31%)

The responses to APRN work settings are similar between the 2015 Illinois Healthcare Action Coalition (IHAC) APRN survey and the 2016 APRN survey. For example, the per cent responses in both surveys for APRNs in private physician practice setting (2015: 25.6%, 2016: 19.21%) and hospital outpatient settings (2015: 10.1%, 2016: 9.8%) were similar. In 2016 there were more APRNs (30.44%) in hospital inpatient settings than in 2015 (19.0%). The overwhelming majority of APRNs work in either private physician practice, hospital inpatient, hospital outpatient or an ambulatory setting. Other settings showed similar results in 2015 and 2016. (The 2015 IHAC APRN report is available on the Illinois Nursing Workforce Center website: www.nursing.illinois.gov).

To determine how APRNs divided their time in the various settings, APRNs were provided four role options to choose from as to how their work time was spent. The total for each respondent was required to add up to 100%. Regardless of workplace setting, the vast majority of time was spent providing patient care/documentation (80%), followed by teaching/precepting/orienting (17%), supervision/administration (15%) and other (20%).

Services provided are summarized in Figure 19. Responses are ordered by frequency in the "most patients" column. The top four responses include; "counsel and educate patients and families", "conduct physical exams and obtain medical histories", "order, perform and interpret tests, diagnostic studies" and "prescribe drugs for acute and chronic illnesses".

Figure 19: Summary of Services Provided by Advanced Practice Registered Nurses (APRNs)

Summary of Services Provided by Advanced Practice Registered Nurses (APRNs)								
Type of Service	Most Patients	Some Patients	Few Patients	No Patients	Total*			
Diagnosis, treatment, management of acute illnesses	54.61% 1,411	20.01% 517	8.32% 215	17.07% 441	2,584			
Diagnosis, treatment, management of chronic illnesses	49.50% 1,276	20.36% 525	11.48% 296	18.56% 481	2,578			
Conduct physical exams, obtain medical histories	76.27% 1,989	10.08% 263	3.34% 87	10.31% 269	2,608			
Order, perform, interpret lab tests, x-rays, EKGs, other diagnostic studies	63.44% 1,652	17.93% 467	6.53% 170	12.10% 315	2,604			
Prescribe drugs for acute and chronic illnesses	59.27% 1,518	11.91% 305	4.26% 109	24.56% 629	2,561			
Provide preventive care including screening and immunizations	38.74% 991	17.28% 442	11.45% 293	32.53% 832	2,588			

Type of Service	Most Patients	Some Patients	Few Patients	No Patients	Total*
Deliver	17.73%	1.743%	4.53%	76.00%	2,583
Anesthesia	458	45	117	1,963	Ť
Provide	4.44%	8.88%	11.38%	75.31%	2,523
psychotherapy	112	224	287	1,900	Ť
Counsel and	74.31%	13.54%	4.85%	7.31%	2,600
educate patients and families	1,932	352	126	190	
Perform	19.99%	27.18%	22.26%	30.57%	2,561
procedures	512	696	570	783	
Type of Service	Most Patients	Some Patients	Few Patients	No Patients	Total*
Provide care	45.21%	28.72%	12.22%	13.85%	2,570
coordination	1,162	738	314	356	
Make referrals	33.99%	37.24%	13.05%	15.72%	2,583
	878	962	337	406	
Participate in	37.37%	31.20%	17.54%	13.89%	2.577
practice	963	804	452	358	
improvement activities					
Type of Service	Most Patients	Some Patients	Few Patients	No Patients	Total*

^{*}Total indicates the number of respondents that perform a service; the number may vary from line to line depending on the number of respondents that answered affirmatively

Figure 19: no response = 437

The APRNs were asked how many patients they provided services to in a typical week, providing care as described above. Most APRNs indicated the number of patients seen in a week, (29.42%) see more than 50 patients per week, 35.98% see between 11-30 patients per week. A panel of patients is the number of individual patients under the care of a specific provider, in this survey, the provider is an Advanced Practice Registered Nurse (APRN). A small percentage, approximately 30% of respondents indicated they have a panel of patients to manage. Of those with a panel, 28.63% see 200 patients, and approximately 19% see between 75-200 patients.

One survey question asked: "Do you have prescriptive authority, the ability and authority to prescribe medications and treatments to patients?" Seventy six percent (76.60%) of APRNs do have prescriptive authority. Approximately 25% of those who do not are CRNAs who work primarily in an inpatient setting providing anesthesia services and do not need to prescribe medications. About half of the respondents who answered that they did not have prescriptive authority indicated that they did not need it to perform their job. They worked in administration, research, education. Clinical Nurse Specialists (CNS) often work in inpatient settings where they may not need prescriptive authority. Of those nurses who have prescriptive authority, 64.97% have a controlled substance license, approximately the same number (66.02%) also have a DEA number, which allows the APRN to prescribe certain controlled substances.

In 2016 when these data were collected, according to Illinois statute, APRNs were required to work with a physician in a collaborative agreement unless they were practicing in hospital settings, ambulatory surgical treatment centers, or hospital affiliates (Illinois Nurse Practice Act, Article 65, Section 65-45). This is reflected in the responses as to how often a physician is present on site to discuss patient problems as they occur. Fifty three percent (52.75%) responded that physicians are present 75-100% of the time. See Figure 20 (below) for a summary of the amount of time physicians are present with the APRNs.

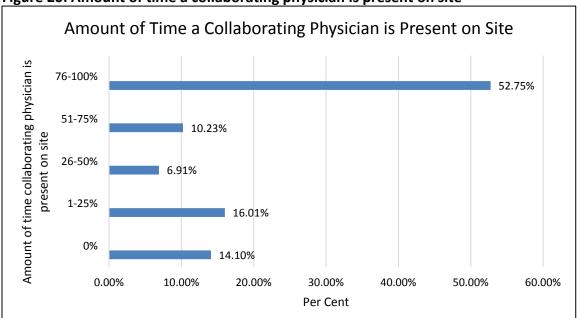


Figure 20: Amount of time a collaborating physician is present on site

Figure 20: No response = 552

The majority of APRNs (85.15%) do not pay the collaborating physician or physicians a fee. Only 5% of respondents indicated they do pay the collaborating physician a fee. The survey requested the specific type of professional relationship the APRN has with the collaborating physician. The majority (60.30%) responded collaborating with a physician on site. The next top three collaborations arrangements were: the collaborating physician is the medical director who oversees the practice (18.48% of APRNs), 17.36% collaborate with a physician at another site and for (13.76%) there is no hierarchy, physician and APRN are equal colleagues.

The respondents were asked "to what extent would you agree or disagree that you are allowed to practice to the fullest extent of your state's legal scope of practice?" The second question asks about the extent of agreement with "...my APRN skills are being fully utilized." (See Figure 21). The Illinois Nurse Practice Act sunset in 2017 and one of the changes in the Act expands independent practice for Advanced Practice Registered Nurses (APRNs). The responses to these last two questions may change with the 2020 Illinois APRN survey.

Figure 21: Agreement regarding being allowed to practice to fullest extent of state's legal scope of practice and belief that APRN skills are being fully utilized

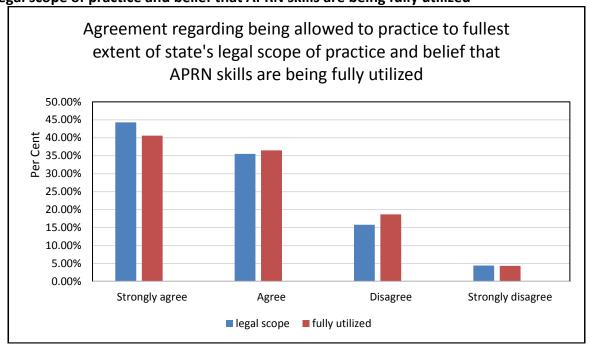


Figure 21: No response: "practice to the fullest extent of state's legal scope" = 583

Figure 21: No response: "my APRN skills are being fully utilized" = 582

Survey responses to billing arrangements and the use of a National Provider Identifier (NPI) number were derived from two questions. The response rate to the first question, "Do you have a NPI number?", was 92.24% (in 2015 - 73.5%). The second question asked, "Which of the following best describes your billing arrangements for your principal APRN position?" Options include "Bill under a physician's number", "Bill under my clinic/ facility number", "Bill under my provider number", "No billing, cash only", and "No, billing, grant supported/ free clinic". For clarity of presentation the two questions were combined into one graphic, Figure 22.

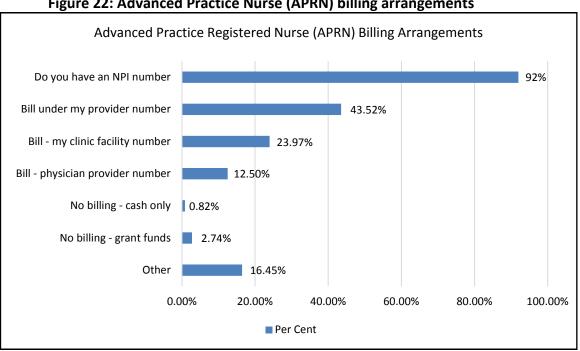


Figure 22: Advanced Practice Nurse (APRN) billing arrangements

Figure 22: No response: do you have a National Provider Identifier (NPI) number = 587

Figure 22: No response: billing arrangements = 560

Survey respondents indicated reimbursement for APRN services is from Medicare (34.50%), Medicaid (24.36%), private insurance (31.42%), no insurance (3.08%) and a small percent of APRNs are not involved in direct patient care (6.65%.). Services provided to Medicaid recipients are particularly important since it is anticipated that one-third of MDs will not accept any new Medicaid Patients. 1

Limitations

There are several limitations to this survey report. First, there was an initial low response rate (8.5%) during the license renewal period, 1,002 respondents. The renewal period ran from March 14 – May 31, 2016. During that time period, there were 11,760 Advanced Practice Registered Nurses (APRNs) in Illinois (as of June 7, 2016). The Illinois Nursing Workforce Center requested additional distribution of the survey, and the request for participation was sent by the Illinois Department of Financial and Professional Regulation (IDFPR) Licensing Section to the 11,000+ Illinois APRNs via email twice. The survey was closed to data collection on October 31, 2016; the overall response rate was 3,113 (26.47%).

The survey data were compared to the IDFPR licensure database for validity. The voluntary responses were reflective of the Illinois APRNs with respect to age, with one exception. Approximately 20% of the APRNs in the Illinois licensure database are between the ages of 26-34 years old, and only approximately 11% of survey respondents were between this same age range. For all other categories the percentage of respondents in each age range was similar.

Discussion

The 2016 Illinois Advanced Practice Registered Nursing survey report provides valuable data on this important workforce. The size of the Illinois APRN workforce grew by approximately 26% since 2014. The majority of this increase can be attributed to the Certified Nurse Practitioner (NP) specialty group which increased by 30% (from 5,914 in 2014 to 7,697 in 2016). The other three APRN specialties (Certified Registered Nurse Anesthetist, Clinical Nurse Specialist and Certified Nurse Midwives) each changed by less than 4%.²

Yet even with this growth, Illinois NPs remain at approximately 60 per 100,000 population. Considering that 42% of the APRN population is over 55 years of age, there is reason for concern about the availability of APRNs to address the needs of Illinois citizens, particularly within Illinois' 229 Health Professional Shortage Areas .³ These concerns heighten considering Psychiatric Mental Health (PMH) NPs; a small percent of NPs (3.8%) challenged to address the 126 Illinois Mental Health Professional Shortage areas. With our ever increasing 65 years and over group (14.6%),⁴ also concerning is the small percent of APRNs practicing in Geriatrics (2.3%) and in longterm care (0.95%). The complex needs of theses populations and the growing shortages of physicians compound the workforce needs for this group. ⁵

Schools/Colleges of Nursing must continue efforts to recruit and enroll diverse student cohorts. While cultural diversity is improving slightly in younger APRN age groups, the workforce remains largely female and the majority Caucasian/White (86. 8%). This is of particular concern

considering the cultural and racial diversity of the State: 17 % Hispanic or Latino and 14.7 % Black or African American; and 5% Asian.⁴

The majority of APRNs provide direct care (82%) in a variety of ambulatory and inpatient services. APRNS are providing the basics of primary care, diagnosis/treatment/management, physical exams and prescribing medications. A large part of their role is also educating families and providing care coordination. Most see more than 50 patients per week; indicating that these APRNS are valuable providers for basic health needs of Illinois Citizens. In addition, a large portion of APRN services are to Medicare (34.5%) and Medicaid (23. 36%) recipients, which research demonstrates is of high quality yet with a less intensive use of costly health services.⁶

Finally, with the anticipated change in the Illinois practice laws, these data serve as an important baseline for gauging the impact of increased practice authority. Billing may be one area to monitor. While 92% of APRNs have an NPI number only 43% bill under this provider number. Data indicate a greater percent of APRNs who do not work within an MD practice use their NPI number. Currently 60% of APRNs collaborate with a physician on site, so it will be interesting to monitor how this changes with independent practice and how this change impacts billing practices and patient panels.

The 2016 Illinois APRN survey results indicate low numbers of APRNs and primary care providers in the state. It is important to continue to recruit and train a diverse APRN workforce to address the human health care capital that will be needed in Illinois. This will be critical to low income and low access areas of the state. Continued data collection and focused workforce planning are vital to assure access to healthcare for all Illinois residents.

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 http://nursing.illinois.gov/PDF/2018-01 to 2012 APNReport for Website.pdf
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- 5. Buerhaus, P. I., Skinner, L. E., Auerbach, D. I., & Staiger, D. O. (2017). Four challenges facing the nursing workforce in the United States. *Journal of Nursing Regulation*, *8*(2), 40-46.
- 6. DesRoches, C. M., Clarke, S., Perloff, J., O'Reilly-Jacob, M., & Buerhaus, P. (2017). The quality of primary care provided by nurse practitioners to vulnerable Medicare beneficiaries. *Nursing Outlook*, *65*, 679-688.
- 6. Buerhaus, P. I., DesRoches, C. M., Dittus, R., & Donelan, K. (2015). Practice characteristics of primary care nurse practitioners and physicians. Nursing Outlook, 63(2), 144-153.

Appendix A

Questions from the 2016 APRN Voluntary License Renewal Survey

- 1. What is your gender?
- 2. Are you of Hispanic/Latino? (Yes or No)
- 3. Select one or more of the following races that apply to you: (Mark all that apply).
- 4. Are you proficient in a language other than English?
- 5. Please list all languages in which you are proficient.
- 6. If you are proficient in a language other than English, do you utilize this language in your current position?
- 7. What is your year of birth?
- 8. What is your marital status?
- 9. Do you have a current certification, and/or licensure, from a State Board of Nursing to practice as an Advanced Practice Nurse (APN)?
- 10. Which educational program(s) did you complete for your APN preparation? (Check all that apply)
- 11. What is your APN license?
- 12. In which state(s) or U.S. territories do you currently have certification/licensure/recognition to practice as an APN? (Select up to 3)
- 13. In which area(s) have you ever received certification from a national certifying organization for APNs? (Check all that apply)
- 14. In what year did you complete your initial APN education program?
- 15. In what year did you receive your initial APN license?
- 16. In what year did you obtain your initial RN/registered nurse license?
- 17. Please check all educational degrees that you have earned:
- 18. Do you work for pay as an APN?
- 19. Do you volunteer as an APN?
- 20. If you are not working as an APN, what are the reasons? (Check all that apply)
- 21. Functioning in your primary APN position, check the one term below that best describes the focus of your practice/facility. Choose from Primary Care, Subspecialties, Surgical Specialties, Other Specialties or check "Not working in a clinical specialty".
- 22. Functioning in your primary APN position, do you provide direct patient care?
- 23. In your primary APN position, do you have the title of "Hospitalist?"
- 24. Functioning in your primary APN position, what percentage of your time is spent in each of the following roles? The total must equal 100%.
- 25. Regarding your primary APN position, for how many patients do you provide the following services?
- 26. Which of the following best describes your billing arrangements for your primary APN position?
- 27. How often is a physician present on site to discuss patient problems as they occur in your primary APN position?
- 28. What type of professional relationship do you have with the physician(s) in your primary APN position? (Select all that apply)

- 29. Do you pay your collaborating physician a fee?
- 30. If you do pay your collaborating physician a fee, how would you define the fee schedule (Check all that apply)? Is it:
- 31. Are you privileged and credentialed at your primary place of employment?
- 32. To what extent would you agree or disagree with the following: In my primary APN position I am allowed to practice to the fullest extent of my state's legal scope of practice.
- 33. To what extent would you agree or disagree with the following: In my primary APN position, my APN skills are being fully utilized.
- 34. How are you paid in your primary APN position?
- 35. Considering all of your APN positions, how many patients do you see in a typical week?
- 36. Considering all of your APN positions, do you have a panel of patients you manage and for whom you are the primary provider?
- 37. If you have a panel, how many patients are on your panel? (If you do not have a panel, leave question blank)
- 38. Are you compensated for taking evening or weekend call for any of your APN positions?
- 39. Do you take evening or weekend call for any of your APN positions?
- 40. Do you have hospital admitting privileges?
- 41. Do you have prescriptive authority?
- 42. Why don't you have prescriptive authority?
- 43. Are you covered by malpractice insurance?
- 44. Who pays for your malpractice insurance?
- 45. Do you currently have a personal drug enforcement administration (DEA) number?
- 46. Do you have a controlled substance license in Illinois?
- 47. Regarding patients for whom you provide care, who pays the majority of the cost?
- 48. Do you and/or your practice accept Medicaid?
- 49. Do you have a National Provider Identifier (NPI) number?
- 50. In a typical week, how many hours do you work in your principal position?
- 51. If you volunteer as an APN, how many total hours per month do you volunteer as an APN?
- 52. Do you work for pay in nursing, as a Registered Nurse (RN) or as an Advanced Practice Nurse (APN)?
- 53. Please estimate your 2015 pre-tax annual earnings from your principal position. Include overtime, on-call earnings, and bonuses.
- 54. For this survey, your primary position refers to the RN or APN position in which you work the most hours per week and are compensated monetarily. Please report *only* nursing positions for which you are paid. Do not include volunteer positions or adjunct faculty status. Describe your primary position? *Check only one*.
- 55. In what type of setting do you work in your primary RN or APN position? (*Please select only one*)
- 56. What is the ZIP code(s) where you practice your APN primary position? You can enter up to three zip codes, each followed by a comma.

- 57. Aside from your primary position, are you working for compensation in any other nursing (RN or APN) positions?
- 58. For this survey, your secondary position refers to the RN or APN position in which you work the second most hours per week and are compensated monetarily. Do not include volunteer positions or adjunct faculty status. Which is your secondary position?
- 59. In what type of setting do you work in your secondary position? (Check only one)

Appendix B

Distribution of Illinois Advanced Practice Registered Nurses by County*

County	CNS	CNM	CNP	CRNA	Total APRNs
Adams	3	1	75	14	93
Alexander	2				2
Bond		3	16	2	21
Boone	3	2	21	6	32
Brown			4	1	5
Bureau	1	3	13	6	23
Calhoun			2		2
Carroll			4	1	5
Cass			9		9
Champaign	8	11	207	58	284
Christian			18	13	31
Clark			4	3	7
Clay			10	1	11
Clinton		1	39	5	45
Coles	3		41	11	55
Cook	412	240	3370	511	4533
Crawford			13	3	16
Cumberland			5		5
DeKalb	5		53	11	69
De Witt			7	2	9
Douglas		2	7	1	10
DuPage	121	40	767	97	1025
Edgar			9	1	10
Edwards			4		4
Effingham	1	1	42	12	56
Fayette		1	11	4	16
Ford	2		10	1	13
Franklin		1	15	3	19
Fulton	2	1	31	7	41
Gallatin	4				4
Greene		1	9	2	12
Grundy	1	2	36		39
Hamilton	1		6	1	8
Hancock		1	6	2	9
Hardin			5		5
Henderson			2		2
Henry		3	29	7	39

County	CNS	CNM	CNP	CRNA	Total ARPNs
Iroquois	3	1	19	2	25
Jackson	2	1	36	18	57
Jasper			11		11
Jefferson	1	1	19	12	33
Jersey	1		15	5	21
Jo Daviess			8	1	9
Johnson	1		10	1	12
Kane	28	20	271	47	366
Kankakee	6		73	12	91
Kendall	7	2	87	13	109
Knox		1	28	8	37
Lake	46	10	341	72	469
La Salle	2	4	39	9	54
Lawrence			5		5
Lee		1	24	1	26
Livingston	1	1	12	3	17
Logan	1		20	5	26
McDonough		2	16	6	24
McHenry	15	5	179	16	215
McLean	10	7	142	45	204
Macon	5	3	87	46	141
Macoupin	1		22	1	24
Madison	6	5	203	67	281
Marion	3	1	36	2	42
Marshall			9	1	10
Mason			8		8
Massac			6	1	7
Menard			10	4	14
Mercer			10		10
Monroe	2		36	5	43
Montgomery	2		17	9	28
Morgan	2		22	9	33
Moultrie			10	2	12
Ogle	2		30	3	35
Peoria	56	7	187	38	288
Perry			9	1	10
Piatt	1		21	5	27
Pike			13	2	15
Pope			3	1	4
Pulaski	0	0	0	0	0

County	CNS	CNM	CNP	CRNA	Total APRNs
Putnam			3	1	4
Randolph			16	5	21
Richland			9	2	11
Rock Island	2	5	69	2	78
St. Clair	6	2	161	44	213
Saline		1	16	3	20
Sangamon	9	7	240	101	357
Schuyler			3	1	4
Scott			5	1	6
Shelby			13	1	14
Stark	4		8	1	13
Stephenson	2	1	25		28
Tazewell	43	11	127	29	210
Union			6	2	8
Vermilion	2		54	6	62
Wabash	5			3	8
Warren	1		2	1	4
Washington	2		17	1	20
Wayne			4	3	7
White			5		5
Whiteside	2		26	4	32
Will	85	12	516	66	679
Williamson	2	5	56	25	88
Winnebago	29	15	254	17	315
Woodford	8	2	35	7	52
Total	975	447	8664	1585	11671
	CNS	CNM	CNP	CRNA	Total APRNs

^{*}Data was collected on November 30, 2017 from the Illinois Department of Financial and Professional Regulation licensure database based on Advanced Practice Registered Nurse (APRN) home zip code. Distribution is divided by county and type of APRN. There are four types of APNs: CNS: Clinical Nurse Specialist; CNM: Certified Nurse Midwife; CNP: Certified Nurse Practitioner; CRNA: Certified Registered Nurse Anesthetist.