

A LABOR STUDY OF REGISTERED NURSES IN UTAH

October 2020



**WORKFORCE
SERVICES**
RESEARCH & ANALYSIS

ACKNOWLEDGEMENTS

This research is conducted by the Workforce Research and Analysis (WRA) Division within the Utah Department of Workforce Services. The emphasis is on profiling the labor force that supports Utah's essential healthcare industry. The direction is guided by concerns and questions supplied by the Utah Medical Education Council (UMEC), a non-profit organization legislated to conduct Utah healthcare workforce research. WRA extends its thanks to the UMEC for its insightful queries and resultant research guidance. The Division of Occupational and Professional Licensing within the Utah Department of Commerce provided critical information for this research. Researchers gleaned additional supporting information from the U.S. Bureau of Labor Statistics and the National Council of State Boards of Nursing. The authors also appreciate the support and feedback from Workforce Services' management team. Mark Knold, chief economist, and Guowang Rao, economist and lead researcher for this project, authored this report.

This research publishes at an unprecedented time when the world is fighting against the COVID-19 pandemic. Care workers, including registered nurses, are making sacrifices to save the lives of patients at risks to themselves and potentially their families. The authors thank all Utah registered nurses, especially those who are saving lives in hospitals, nursing homes and other health facilities. Nurses are part of the team of heroes in this pandemic. We hope this report will raise more attention to the Utah registered nursing workforce and other healthcare workers. Workforce Services will continue working with other stakeholders by analyzing the Utah care workforce to better inform the public.



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EXECUTIVE SUMMARY

- Registered nurse (RN) licenses are administered by the Division of Occupational and Professional Licensing (DOPL), a division within the Utah Department of Commerce. A person does not have to work in the nursing profession in order to obtain a license.
- A license can be obtained at any time, but must be renewed during the first calendar quarter of every odd-numbered year. Licenses not renewed are deactivated.
- By the end of 2018, Utah had approximately 35,900 people licensed as registered nurses.
- Females make up 86 percent of RNs in Utah. This female-heavy percentage is a feature characteristic within the working nursing profession. Besides nursing, only certain education-industry occupations feature this female-heavy characteristic.
- The Department of Workforce Services administers the state's unemployment insurance (UI) program. On a quarterly basis, Utah employers report their payroll information to the UI program.
- Through these UI payroll records, RN license holders are classified for the purpose of this study as either working or not working, finding breaks in employment, identifying them in particular industries and determining payroll earnings.
- Nearly one-quarter of all RN license holders are not found on a Utah payroll record (working), whether in the healthcare industry or other. That is a sizeable 9,000 individuals. This non-working percentage has changed little across time.
- Of the license holders included in the UI payroll records, two-thirds are working within the healthcare industry. That puts active RN

license holders directly involved in the healthcare industry at approximately 23,000 workers.

- Roughly 4,000 RN license holders currently active in the Utah payroll records are not working in the healthcare industry. The licensees who do not work in the healthcare industry may be still employed as nurses in non-traditional healthcare industry settings, such as insurance companies, staffing firms, or government agencies.
- Of those who have let their RN license expire, only 3% to 4% remain working, both inside and outside healthcare industries. An expiring license typically means the holder has disengaged from the labor force or has moved out of state.
- Nearly 60% of all RN license holders have held their license for 15 years or less. Of those, nearly 80% are active and found in the UI payroll records.
- Another 10% of RN license holders have held their license for 30 years or more. Naturally as people age, the percentage who have a license and are active in the UI payroll records declines; but not by a significantly noticeable percentage. Even those who have held a license approaching 40 years are still payroll active to the tune of just over 70%.
- The vast majority of RN license holders who work do so in the healthcare industry. Yet, as the age of a license holder increases, an expanding percentage work in a non-healthcare industry. By age 60, this percentage has increased to roughly 25%.
- Compared to other RN license holders, young licensees (less than 30 years of age) are more concentrated in the general hospital segment. Older RN licensees are also predominantly found there; but with age, there is a tendency to broaden to other healthcare sub-industries. This produces an expanding presence of older nurses in both the home healthcare services industry and the nursing care facilities industry.
- The majority of RNs are female. Therefore, child-bearing is an important aspect in any RN labor force profile.
- Annually, about 10% of RNs aged 40 or younger working in the healthcare industry will experience a work stoppage for at least a calendar quarter. Only about half return to the Utah payroll system within the next three years. With such a large percentage not returning to work, one has to consider that family and child-bearing decisions have an influential part in this dynamic.
- Worker turnover is not an excessive occurrence within the nursing profession. The quarterly churn (turnover) rates per quarter range between 2.1% to 2.8%, with the highest churn occurring in the third quarter of each year. Yearly turnover rates measure 9.4% for 2016, and 9.9% for both 2017 and 2018.
- These are extremely low turnover rates. Quarterly all-industry employment churn rates range from 15% to 19%. These extrapolate to elevated annual rates. Many workers don't change their jobs at all in a year. Others change multiple times. It is the multiple changers who inflate the numbers. That being the case, the low RN churn rates show that the RN workforce does not change employers often or excessively.
- The nursing industry follows a common trend seen in the overall labor force, where as a worker's tenure increases, their wage earnings also increase. Wages peak in the 51- to 60-year age grouping. Thereafter, wage levels diminish; but so does the volume of workers. This signals retirements and retirements tend to pull down earnings after age 60. Those who remain working after 60 oftentimes shift to part-time employment. Retirements coupled with declining working hours are the factors in the earnings decline for workers over 60.

INTRODUCTION

There are certain occupations that go beyond being merely economic vehicles through which people earn a living. Some occupations carry a greater onus — one of societal necessity. If these occupations didn't exist or were to not be fully staffed, the greater societal good would suffer. A prime example is the healthcare industry. The recent COVID-19 pandemic has spotlighted the societal importance of healthcare. The importance of this occupation spurred the Workforce Research and Analysis (WRA) Division within the Utah Department of Workforce Services to undertake this labor study of the nursing profession.

Workforce Services is not alone. The Utah Legislature labels nursing of such social importance that state resources were allocated to conduct Utah healthcare workforce research, to advise on Utah's healthcare training needs and to influence graduate medical education financing policies. To fulfill this objective, the Legislature created and empowered the Utah Medical Education Council (UMEC).

To fulfill its mission, the UMEC undertook its own surveys and research projects, but its reach and resources are limited. Workforce Services' unique administrative records provides a broader picture of Utah's registered nursing workforce.

The healthcare industry is interested in seeing an increase of labor supply to support its fast-growing and socially important nature. Yet, studies conducted by advocacy groups have pointed to training bottlenecks as potentially hindering the nursing supply in Utah.¹ The Legislature finds itself solicited to give both importance to and funding toward the nursing education pipeline.

The pressures creating Utah's nursing demand are twofold: one, replacing existing nursing positions when turnover develops; and two, an industry in expansion where nursing openings develop via growth and that

growth is outpacing the nursing supply. Both factors play their part in fast-growing Utah. It is not clear how much turnover puts pressure upon this perceived nursing need. Workforce Services felt it could shed light on turnover using its unemployment insurance (UI) administrative records. That was Workforce Services' original impetus for undertaking a nursing study — to evaluate turnover.

To avoid operating in isolation, Workforce Services informed UMEC of its nursing turnover undertaking. The UMEC envisioned a deeper Workforce Services ability to answer that institution's nursing curiosities. It proposed that Workforce Services expand its reach and address myriad labor questions intriguing the UMEC. UMEC's general questions center around topics including nursing employment and non-employment, reasons for exiting nursing and whatever demographics profile such, the impact of child-bearing years upon the nursing profession, and the industries where nursing professionals are found outside of healthcare, among others.

The Utah Department of Professional Licensing (DOPL) has the administrative records to identify who holds a registered nursing (RN) license in Utah. With these records, Workforce Services is able to follow these workers over time through its UI payroll administrative records. The resulting analysis can assist UMEC in fulfilling its mission of facilitating and supporting the Utah nursing industry and labor supply.

By approaching various data sources guided by lingering questions surrounding Utah's nursing labor activities, this report hopes to analyze and identify unknown aspects surrounding Utah's RN workforce.

¹ "Utah Nursing Education" <https://umec-nursing.utah.gov/nursing-education/> and "Supply of Nurses in Utah, The 2016 Survey of Utah's Registered Nurses" <https://umec-nursing.utah.gov/wp-content/uploads/RN-report-final-updated5-9-2016.pdf>

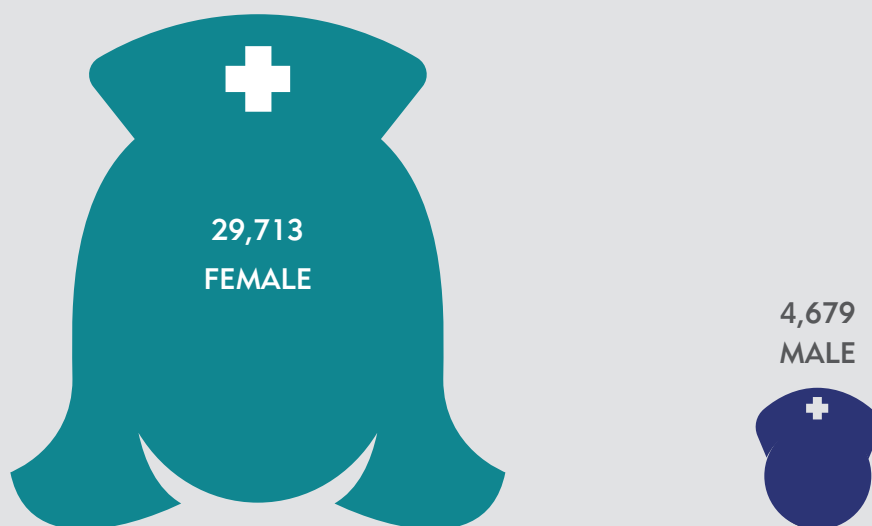
GENERAL OVERVIEW OF UTAH RN LICENSEES

By the end of 2018, there were 34,396 active RN license holders in Utah as measured through the DOPL database. The DOPL data counts active Utah license holders. This does not mean the license holder is labor-force active, only that they have a current license. Nurses are known to become labor-force inactive or nursing-profession inactive for periods of time, but they maintain their license for various reasons. These may include a plan to return to nursing in the future, or to avoid the cost to reactivate a license once it expires. Some may feel that keeping the license active even if it is not being used is worth the cost.²

Nursing is a female-dominated occupation. The DOPL licensing data reveals that females accounted for 86% of Utah RN license holders at the end of 2018. In 2016, UMEC, in its surveying, reported that 89% of the registered licensees were female and 11% male.

There were only two industries that did not lose employment during the Great Recession — healthcare and education. Both are female dominated. Because of this, the Great Recession had less impact on Utah's female labor force than it did the male component. It actually created an environment where the female workers were the backstop within the economy.

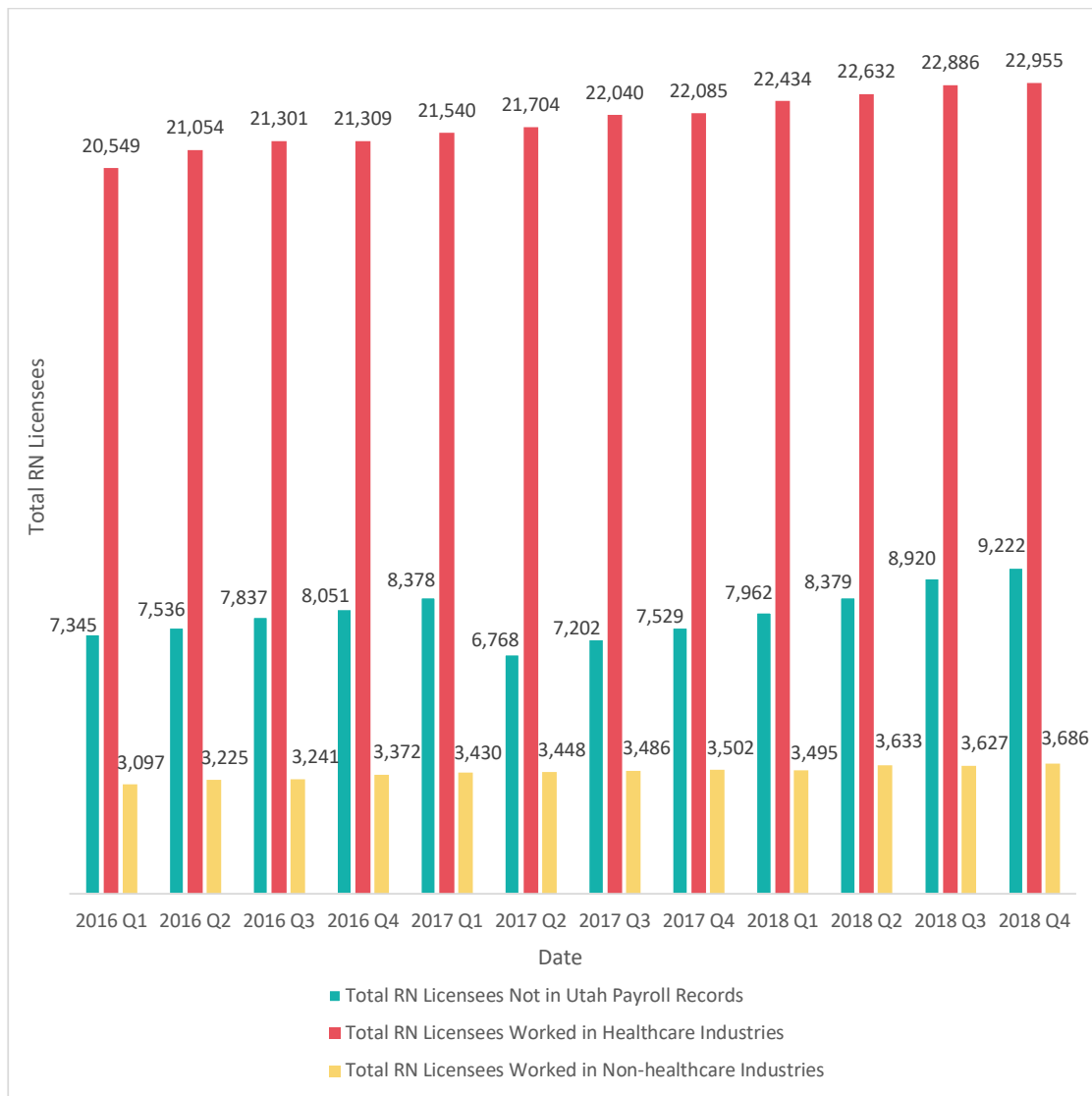
FIGURE 1:
GENDER COMPOSITION OF ACTIVE RN LICENSEES IN 2018 Q4



RN WORKING PROFILE

- Q.** How many Utah RNs maintain a license and are working in the healthcare industry? How many are not working in the healthcare industry? How many are not working at all?
- A.** Figure 2 displays Utah had roughly 35,900 RNs licensed at the end of 2018.³ Nearly one-quarter are not found within the UI payroll records; as in, they are either self-employed or not working in any industry within Utah.⁴

FIGURE 2:
RN LICENSEES WHO WORKED IN HEALTHCARE VS NON-HEALTHCARE INDUSTRIES



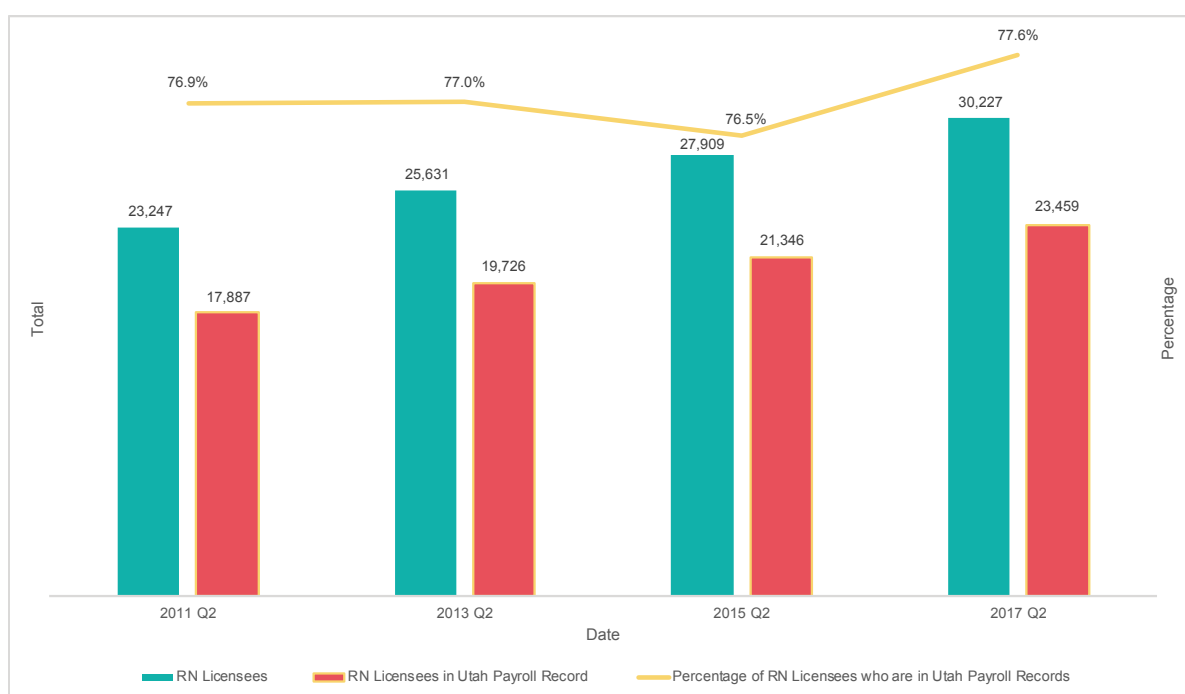
³ Nurses here can be counted more than once if they held jobs in both healthcare and non-healthcare industries.

⁴ Utah is one of the states that have implemented the Enhanced Nurse Licensure Compact. The Enhanced Nursing Licensure Compact (eNLC) enables registered nurses to work, both physically and remotely, in other eNLC states once they receive their licenses from one of the eNLC states.

Roughly two-thirds are found in the UI payroll records and working within the healthcare industry.⁵ The remaining 10% are found on UI payroll records but not working in the healthcare industry. There is not a comprehensive answer as to why some have an RN license and do not work, nor as to why an RN license holder does not work within healthcare. These involve individual choices and therefore individual answers. However, from the point of view of those who monitor the Utah RN labor force and its potential, there is a sizeable percentage of license holders who are potential returnees to Utah's RN labor force in the healthcare industries. That component numbers roughly 12,900 license holders.

- Q.** Does the percentage of RN license holders who aren't in the UI payroll records change with time?
- A.** Figure 3 illustrates the total count of RN licensees and those who were in the UI payroll records during the second quarter in four different years. DOPL requires RN licenses be renewed in the first quarter of every odd-numbered year. To mitigate the impact of idle licenses inflating quarterly profiles, the second quarter of the odd-number years were used as that is the quarter immediately after idle licenses are automatically purged when they are not renewed. The percentage of RN licensees in Utah found in the UI payroll records over time remains fairly consistent at approximately 77%.

FIGURE 3:
TOTAL RN LICENSEES VS TOTAL LICENSEES IN UTAH PAYROLL RECORD

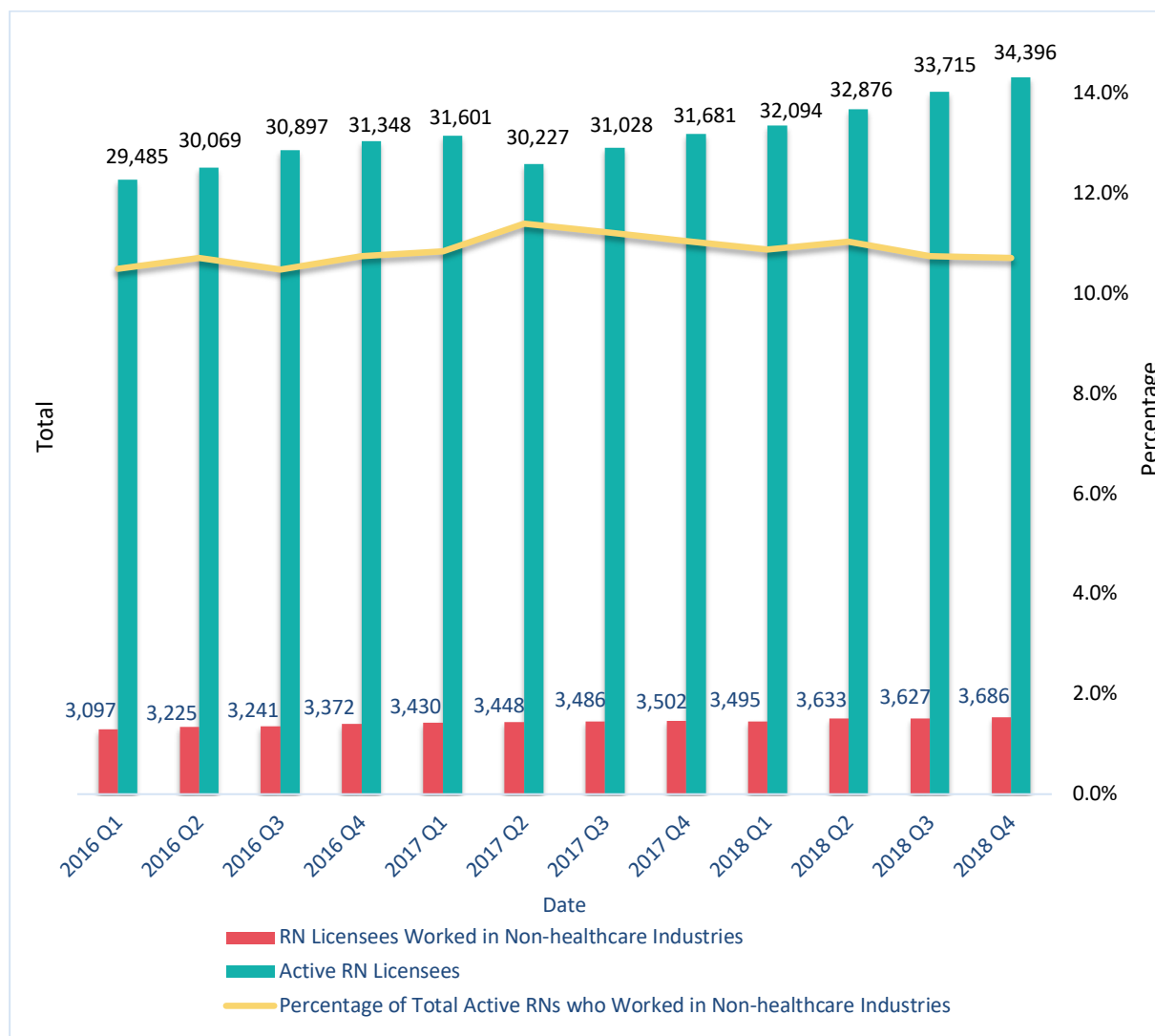


⁵ See Appendix B for “healthcare industries” definition.

Q. How many RNs have a license but do not work in the healthcare industry?

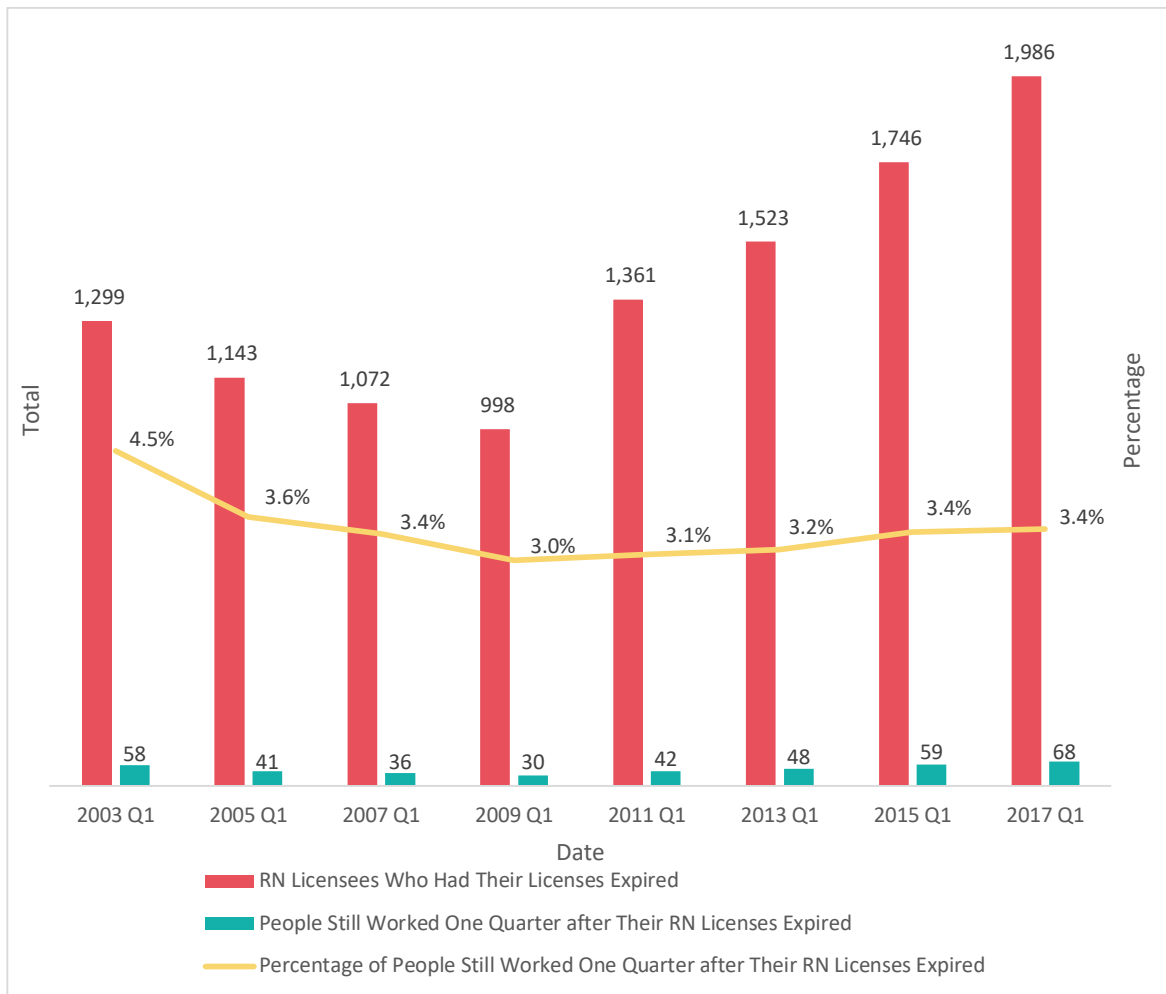
A. Not everyone who has an RN license works in the healthcare industry. Figure 4 shows that the percentage of RN license holders not working in the healthcare industry, but working in some other industry, is roughly one in 10 license holders. The reasons why are as varied as the individual choices; however, there is a sizeable percentage working but not utilizing their nursing license or working as RNs but in non-healthcare industries. Some may simply have made a recent change but their license remains active until the license period expires.

FIGURE 4:
TOTAL RN LICENSEES WHO WORKED IN NON-HEALTHCARE INDUSTRIES



- Q.** How prevalent is it for an expired Utah RN license holder to continue to show up in the UI payroll records?
- A.** There is not a large percentage of Utah RN license holders who let an RN license expire and still appear within Utah's UI payroll records thereafter. Roughly 3% to 4% of expiring RN license holders remain working somewhere within Utah. This implies that most expiring licenses are tied to people who are exiting the Utah labor force, which may include reason such as retirements or other personal idleness, moving out of state, or possibly even death.

FIGURE 5:
TOTAL AND PERCENTAGE EXPIRED RN LICENSEES WHO WORKED ONE QUARTER LATER



Q. What is known about RN licensees who are not in the workforce?

A. Figure 6 includes the total RN licensees that were not on a UI payroll record during the calendar quarters between 2016 and 2018. Total RN licensees who were not in UI payroll records increased from about 7,300 to approximately 9,200 people. In the same 12-quarter period, the total number of RN licensees grew from 29,485 in the first quarter of 2016, to 34,396 in 2018's fourth quarter. As both total licensees and licensees outside the workforce increased, the percentage who were not in the workforce remained relatively constant — approximately a quarter of total licensees. Additionally, there is a pattern that emerges. As previously mentioned, license renewal occurs once every two years — during the first calendar quarter of every odd-numbered year. In Figure 6, license renewal is within the first quarter of 2017. Therefore, the first quarter to reveal the purging of non-renewed licenses is the second quarter of 2017.

FIGURE 6:
PERCENTAGE OF RN LICENSEES NOT IN THE UTAH PAYROLL RECORDS



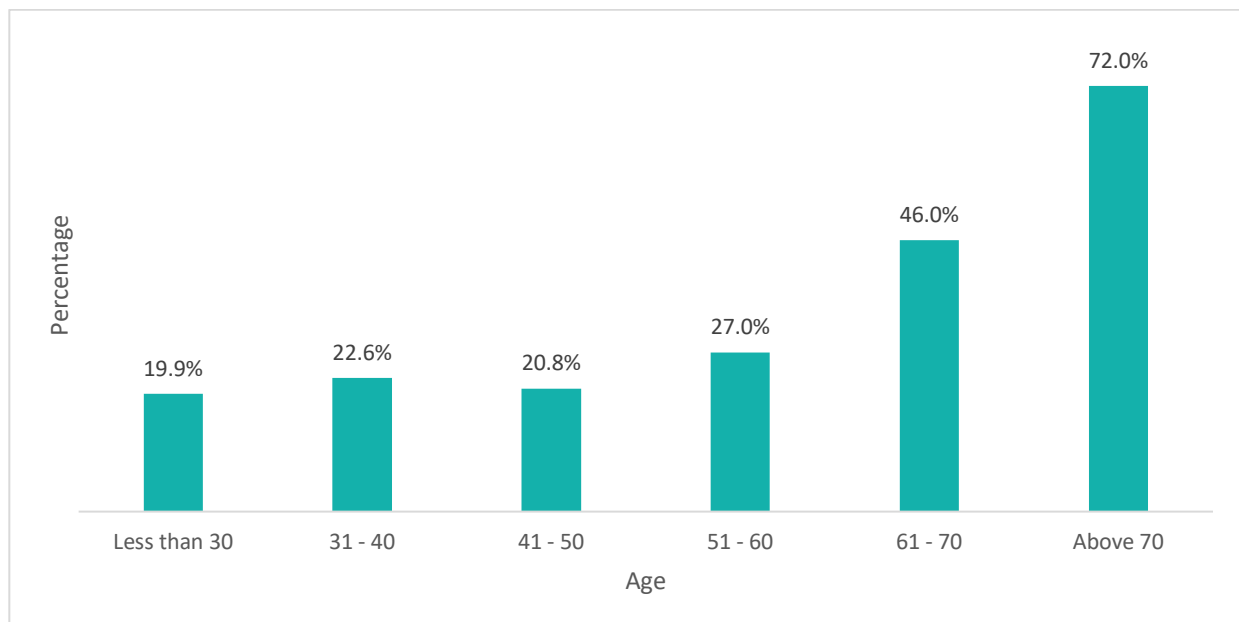
In the quarters leading up to the second quarter of 2017, the volume of idle license holders increases. This is a natural and expected phenomenon. Over time, people make decisions to leave the nursing profession for whatever reason. But the license does not expire when the individual makes the decision to be idle. The license won't expire until sometime within the first quarter of the next odd-numbered year, whether that is a year and a half away or only two months away. During any given two-year time period, the number of idle licensees naturally increases each quarter. Then, when the expiration quarter finally arrives, these idle licenses are removed from the records. Thereafter, as the next two-year period unfolds, the process starts again and the volume of idle licenses slowly increases until the next period of license renewal removes the idled license.

The percentage line speaks to this pattern by showing the percentage of RN license holders not in UI payroll records to the total RN license holders within the given two-year time period. The drop in the second quarter of 2017 from 27% to 22% represents the every-two-year purging of idle licenses. Therefore, the 2017 second quarter represents a baseline of idle license holders. One might think that percentage would be down to zero immediately after a purge quarter, yet it is still above 20%. It therefore represents a “natural” base percentage of RN license holders who are not active in the job market yet continue to maintain and hold an RN license.

- Q.** What percentage of Utah's RN license holders by age group are not in the labor force?
- A.** Figure 7 speaks to the percentage by age group of RN licensees who were not in the UI payroll records. The percentage shown is the average across 12 quarters from first quarter 2016 to 2018's fourth quarter. The percentage generally increases as the age intervals increase.

The less-than-30 age group has the lowest percentage of non-participation. The young are more likely to use their license not long after they obtain that license.

FIGURE 7:
PERCENTAGE OF RN LICENSEES NOT IN THE UTAH PAYROLL RECORDS BY AGE GROUP
(Average across 12 quarters between 2016 Q1 and 2018 Q4)



Beginning at age 50, the percentage holding a license and not showing up on Utah's UI payroll records increases. RN licensees start to retire earlier than many labor force participants in other industries, which may result from occupational fatigue, such as long hours and late-hour shifts or stressful working conditions. Many years of practicing medicine may have both a physical and mental impact. However, any conclusions still need to be further researched, as these also involve personal choices.

This increasing non-participation trend moves into the normal retirement age window (age 61 to 70). When an RN retires from the healthcare industry their license does not automatically expire. It only expires when the DOPL license period demands a license renewal — during the first quarter of each odd-numbered year. So, it is natural for aging RN license holders to show a high non-activity percentage.

It is not excessive, but there is a noted non-participation increase in the 31 to 40 group. It contrasts with the percentages of the groups on either side. This might result from RN licensees in this age group choosing to focus on family during the child-bearing years. There is a possible return to work after the children enter school. This concept will be explored more in a later section.

RN LICENSE HOLDER PROFILE

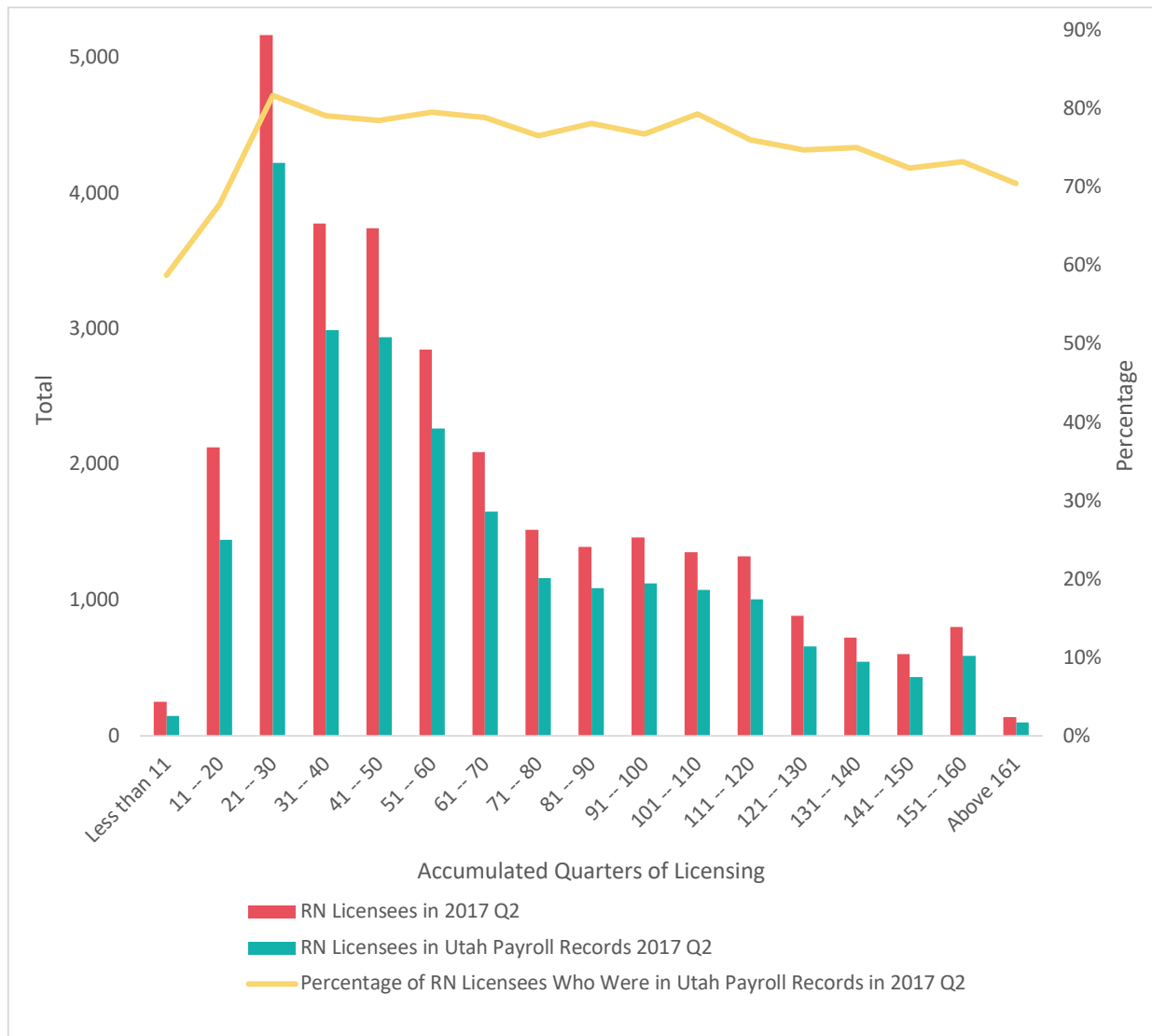
Q. Can RN license holders be profiled more thoroughly — whether active or idle?

A. Figure 8 zooms in on the data of 2017's second quarter and breaks it down by length of time holding the license. Each license holder was evaluated for how long they have held that license. The measurement period was across calendar quarters. For example, the most populated group were those who held their license anywhere from 21 to 30 consecutive quarters prior to the second quarter of 2017. That translates to holding a license between five and seven-and-a-half years. The full gamut of an active license holding length extends to 40 years.

Nearly 60% of all license holders have had their license for 15 years or less (60 quarters or less). Of those, nearly 80% are active and found in the UI payroll records. Interestingly, the least active license holding group are the ones who have had their license for the least amount of time — five years or less (20 quarters or less). This less active RN licensing group may result from varied reasons, such as career and location explorations associated with their short licensing history. Early-stage professionals are more likely to leave the occupation if they discover other career opportunities. As mentioned prior, more than 80% of RN license holders are females. The high inactivity in these less-tenured license holders may be a function of family formations and child bearing years. This will be explored in more detail in a following section.

There is a fair amount of people who hold an RN license for 30 years or more. Naturally as time progresses, the percentage of people who have a license and are active in the UI payroll records declines, but not by a significantly noticeable percentage. Even those who have held a license approaching 40 years are still payroll active to the tune of just over 70%.

FIGURE 8:
PERCENTAGE OF RN LICENSEES IN THE UTAH PAYROLL RECORDS BY LICENSING HISTORY GROUP



RN LICENSE HOLDERS AND INDUSTRY

- Q.** What is the age profile of RN license holders working in both the healthcare and non-healthcare industries?
- A.** Figure 9 segments both the total RN licensees who were working in the healthcare industries and those in non-healthcare industries by age group in the second quarter of 2017. A significant number of RN licensees worked in healthcare industries across all age groups. The percentage who worked in a non-healthcare industry does increase as the RN licensees aged. There is no definitive reason as to why this may be — only speculation. One

might conclude that as RNs put in time in the healthcare industry, there may be a fatigue factor. The stress and physicality within the healthcare industry can be challenging.

It is important to distinguish between RN licensees who are practicing in non-healthcare industries and those who are not. The licensees who do not work in the healthcare industry may be still employed as a nurse. The higher percentage of RN licensees outside healthcare may be attributed to more licensees finding themselves in non-traditional healthcare industry settings, such as insurance companies, staffing firms, or government agencies. Positions in these settings may offer flexible working hours and better working conditions than certain settings in the healthcare industries. Higher numbers of RN licensees may find these settings appealing as they age.

FIGURE 9:
HEALTHCARE VS NON-HEALTHCARE RN LICENSEES BY AGE GROUP IN 2017 Q2

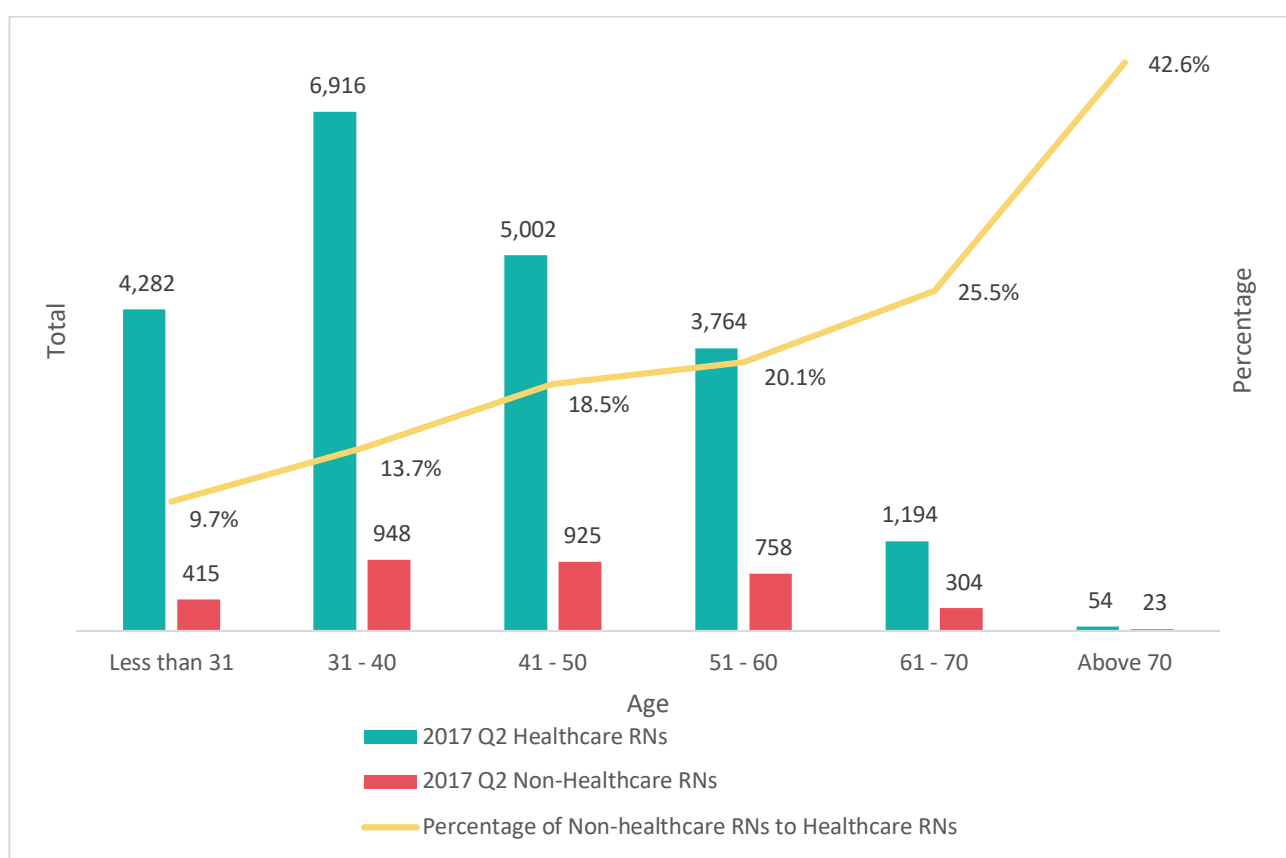
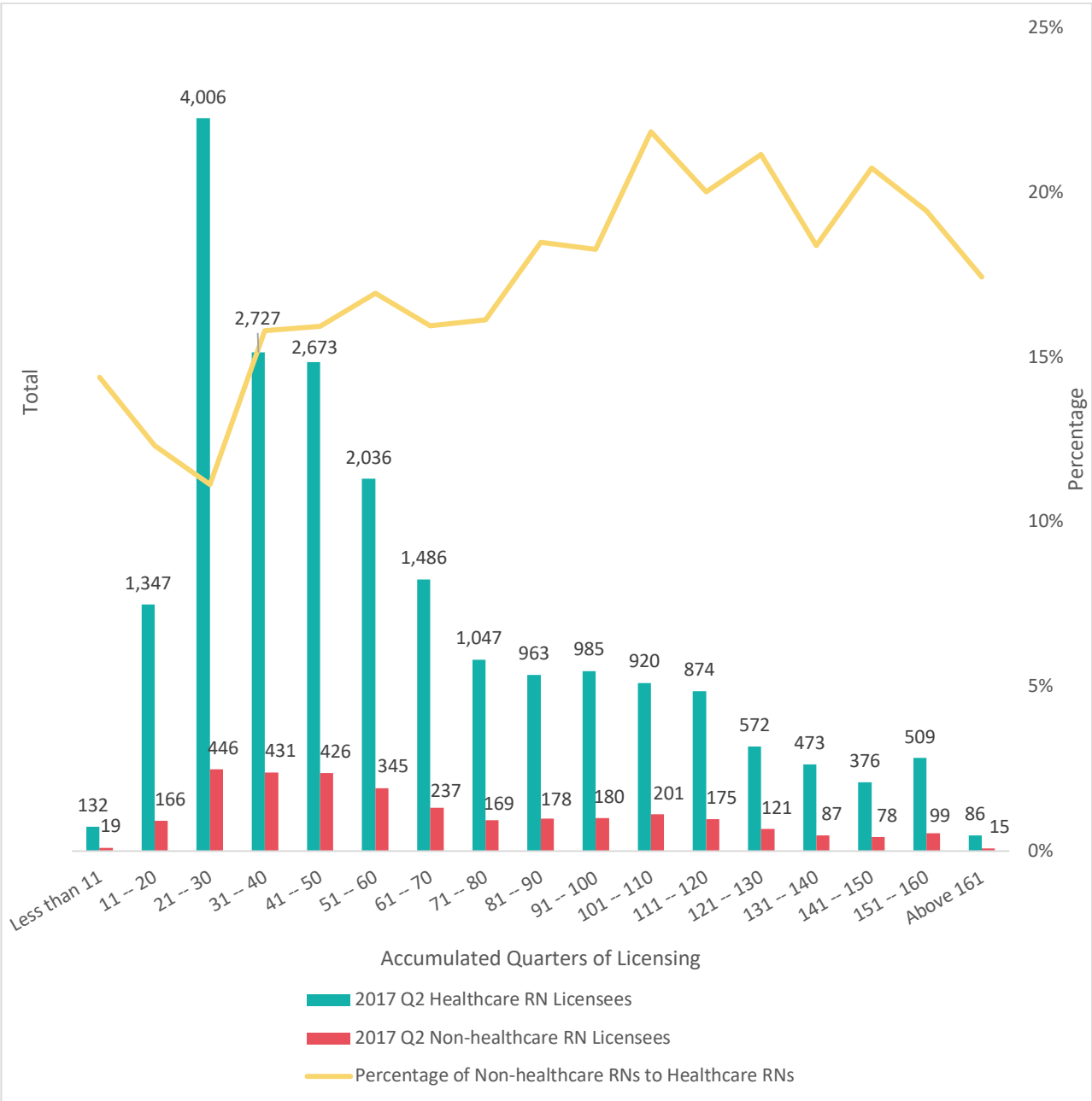


Figure 10 profiles the second quarter of 2017's total RN licensees in both healthcare and non-healthcare by their license-holding tenure. Similar to Figure 8, Figure 10 also places RN licensees in 17 different licensing groups. Recent tenured license holders have the highest working participation in the healthcare industry versus not working in the healthcare industry. But as tenure increases with holding an RN license, the percentage that tend to no longer work in the healthcare industry generally increases. Again, there is no definitive reason as to why this occurs, it's just that the pattern is there. This is driven by individual choices and those reasons are varied.

FIGURE 10:
HEALTHCARE AND NON-HEALTHCARE RN LICENSEE BY LICENSING HISTORY IN 2017 Q2



Q. Which is the most likely industry setting for RN license holders age 30 and under?

A. Figure 11 shows the percentage comparison between young RN licensees (under age 30) and older licensees in four healthcare arenas.⁶ General medical and surgical hospitals naturally predominate (61.7%). Many RNs (15.5%) also work in the college and university category. (This category is necessary to capture the University of Utah healthcare system within the UI payroll records.) Compared to other RN licensees, young licensees are more concentrated in the general medical and surgical hospital segment where they can gain experience. Older RN licensees had a slightly higher presence in both the home health care services industry and the nursing care facilities industry.

FIGURE 11:
PERCENTAGE COMPARISON BETWEEN YOUNG RN LICENSEES AND OTHERS IN THE KEY INDUSTRIES

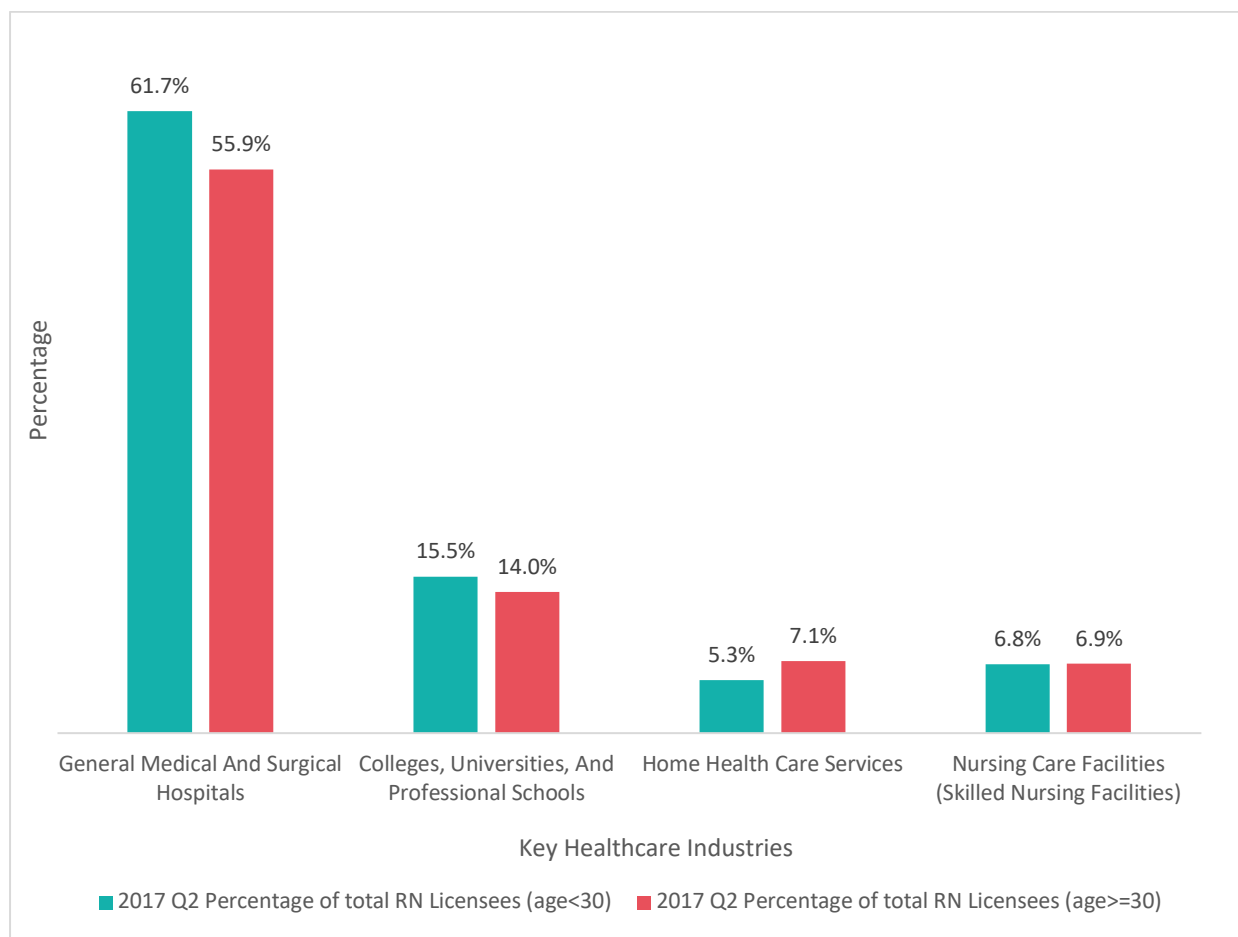
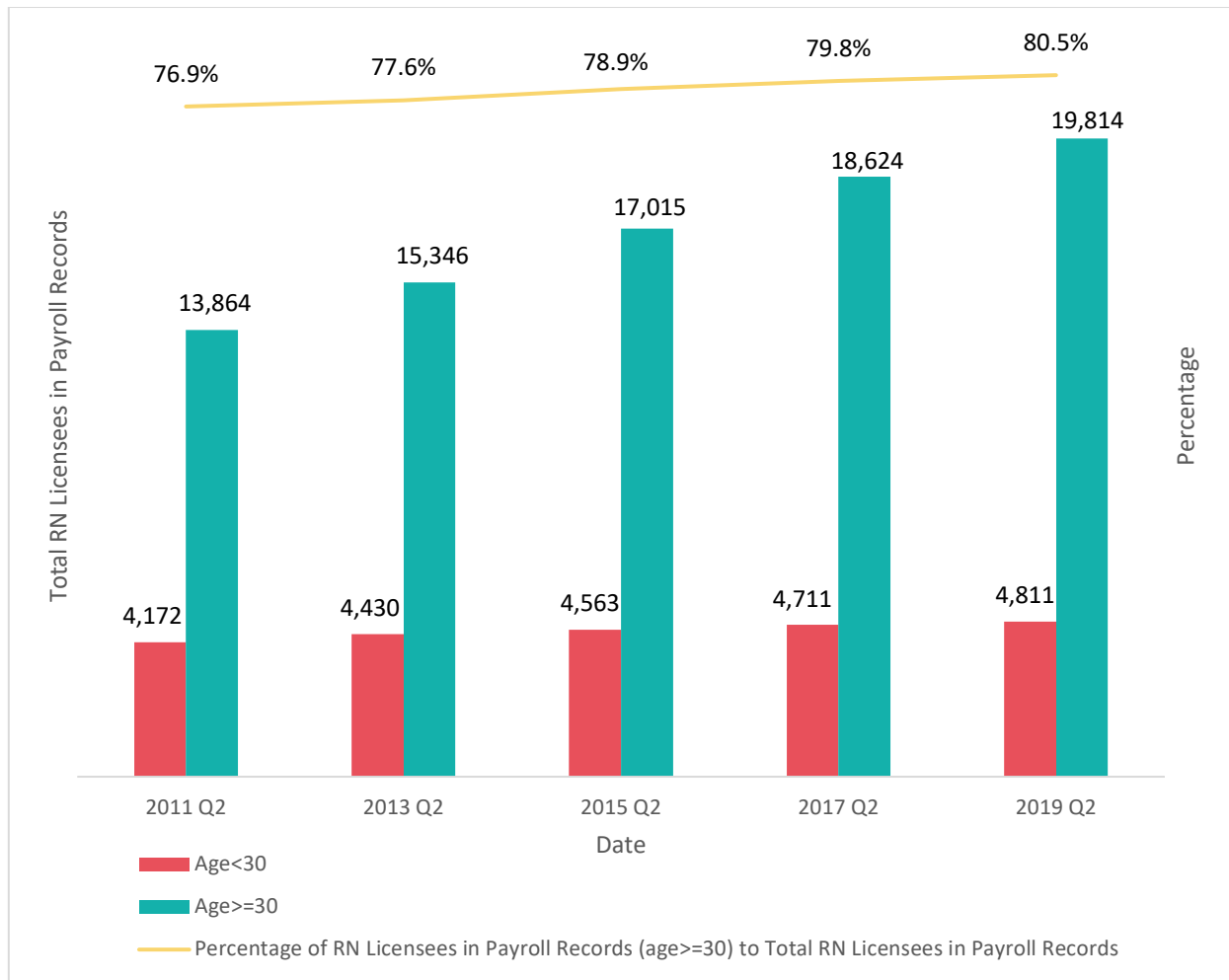


Figure 12 illustrates that the majority of RNs are age 30 or greater. That age group's percentage is increasing with time. In 2011, those aged 30 and older made up 77% of RN license holders. By 2017, this component had increased to 80%. This aging RN population coincides with the same demographic component in many other occupations, as the overall workforce is aging.

FIGURE 12:
TOTAL RN LICENSEES IN PAYROLL RECORDS (LESS THAN 30 YEARS OF AGE) VS
TOTAL RN LICENSEES IN PAYROLL RECORDS



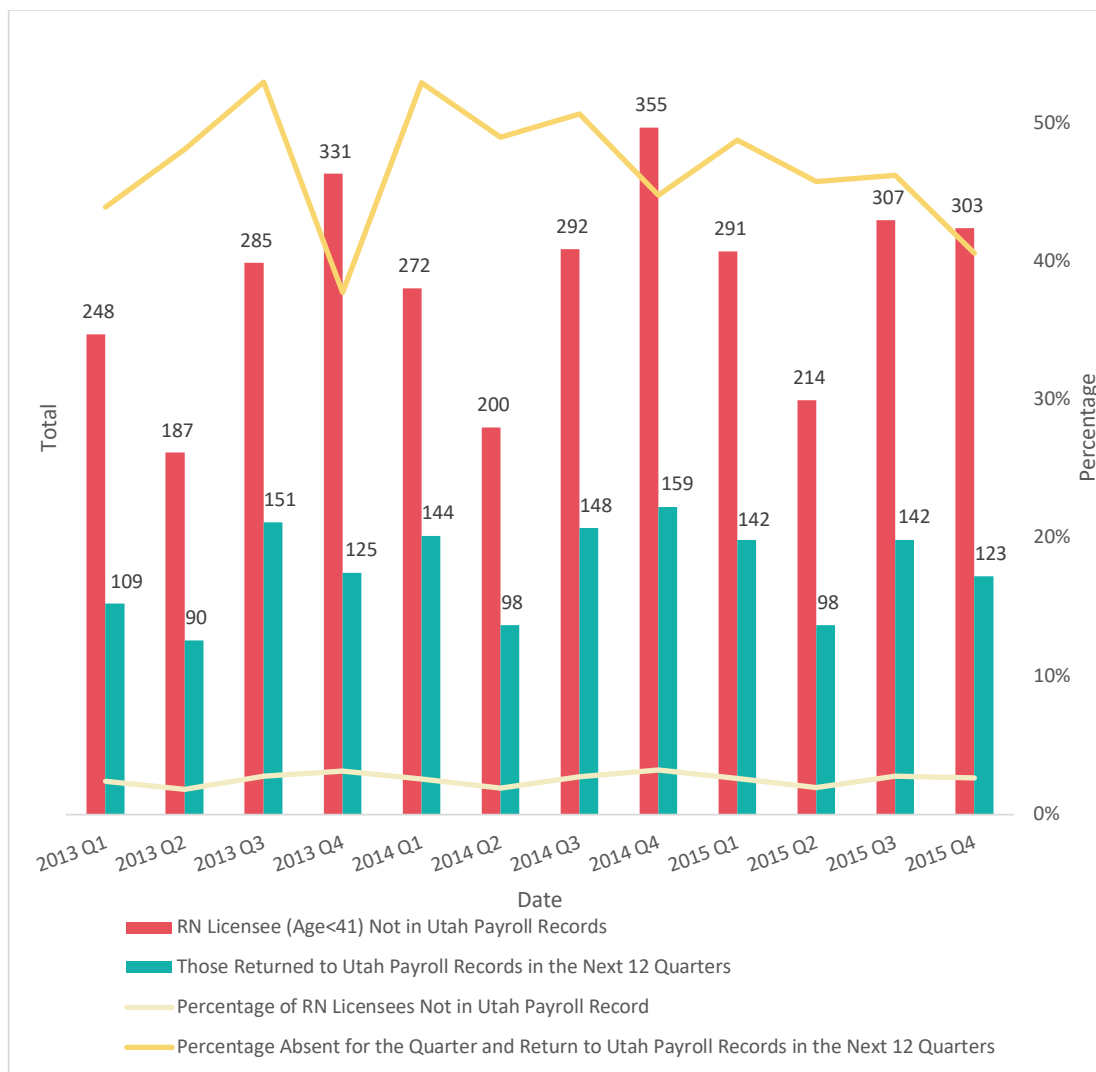
RN LICENSE HOLDERS IN CHILD-BEARING YEARS

Q. Can child-bearing-aged RN licensees be profiled who are not in the UI payroll records?

A. The majority of registered nurses are female.⁷ Therefore, child-bearing and child-rearing becomes an important component in any RN labor force profile. Here “child-bearing” age is defined as less than 41 years old.

Figure 13 includes total RN licensees who were in the child-bearing years and were not in the UI system in each quarter from the first quarter of 2013, to the fourth quarter of 2015. These licensees were working in the previous

FIGURE 13:
TOTAL OF RN LICENSEES NOT IN THE UTAH PAYROLL SYSTEM DURING THE CHILD-BEARING YEAR AND RETURNED IN THE NEXT 12 QUARTERS



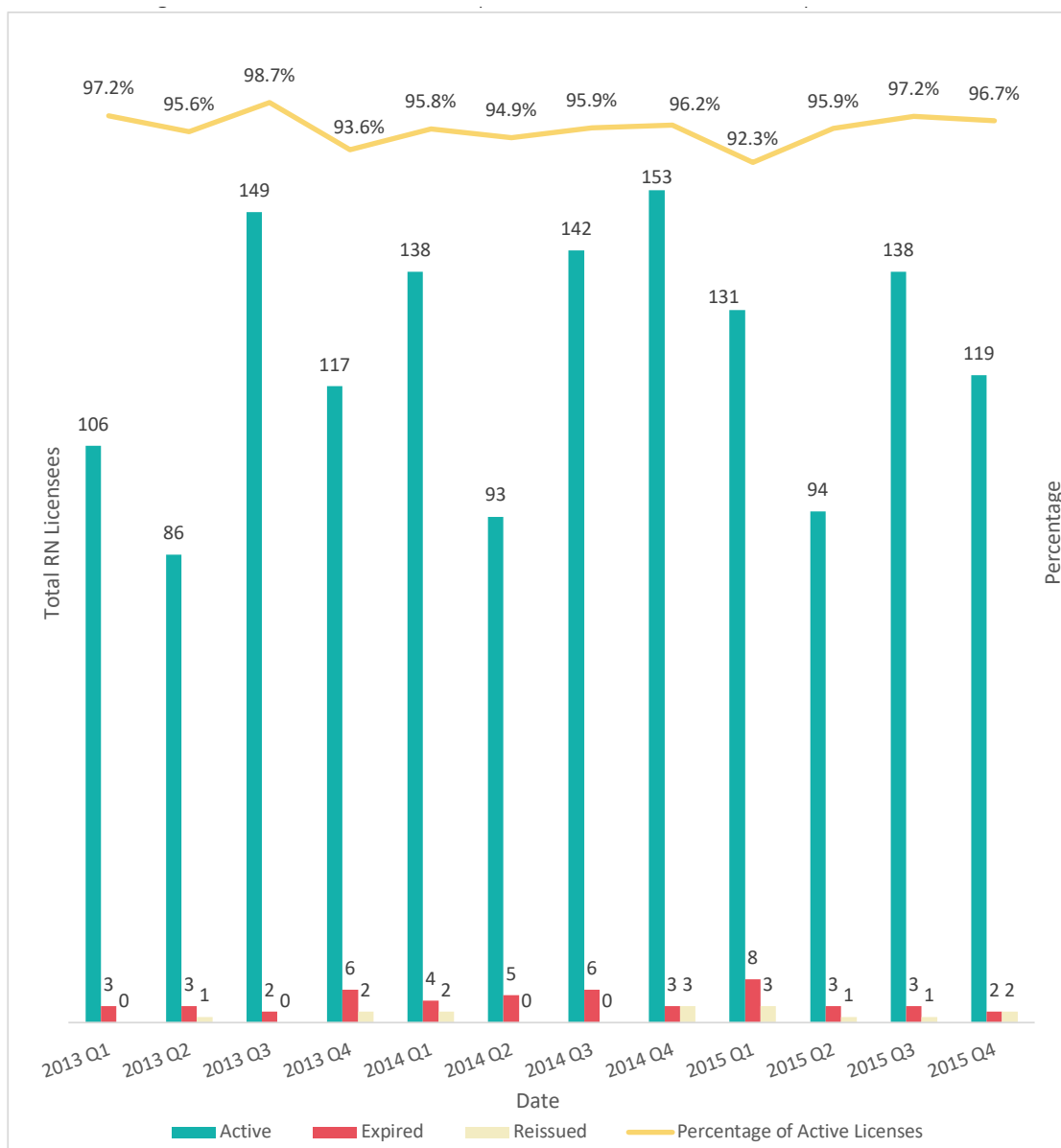
⁷ Supply of Nurses in Utah, The 2016 Survey of Utah's Registered Nurses <https://umec-nursing.utah.gov/wp-content/uploads/RN-report-final-updated5-9-2016.pdf>

quarter but not in the cited current quarter. We also show RN licensees who returned to the UI payroll system anytime in the following 12 quarters (i.e., within the next three years).

In 2013 Q1, there were 248 RN licensees aged less than 41 who were in the UI payroll records in the prior quarter but not in the first quarter of 2013. These 248 RN licensees made up 2.4% of the total active RN licensees who were less than 41 years old in 2013 Q1. (On an annual basis, this is about 10% of RNs less than 41 years old.)

Thereafter, among these 248 licensees, 109 had records reappear in the UI payroll system sometime in the following 12 quarters between the second quarter of 2013, and the first quarter of 2016. Only 44% of these idled

FIGURE 14:
LICENSE STATUS OF PEOPLE WHO RETURNED TO UTAH PAYROLL RECORDS



nurses returned to work within the next three years. These return percentages fluctuate a bit with time; but, at best, around half return to work. Again, all decisions are individual and varied; but, with such a large percentage not returning to work, one may have to consider that family and child-bearing decisions may be an influential part in these decisions.

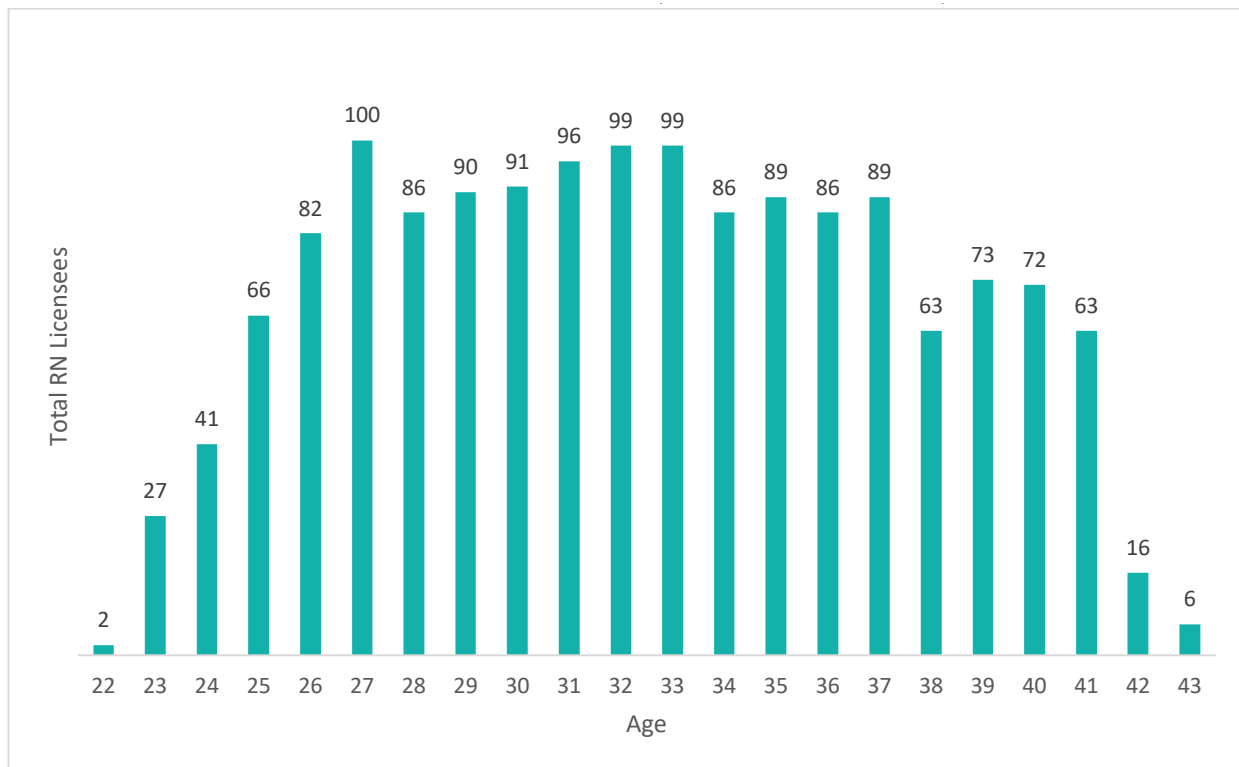
Figure 14 (previous page) analyzes the group of people from the first quarter of 2013, to the fourth quarter of 2015, who did return to the UI payroll records after being absent in the record for at least a quarter. The license status was broken into three categories: “Active,” “Expired” and “Reissued.”

For RN licensees who did not work for at least a quarter during their child-bearing years, about 95% of them held active RN licenses before they returned to the UI payrolls between the second quarter of 2013, and the fourth quarter of 2018.

Continuing with the total people who returned to the UI payroll records from Figure 13, Figure 15 shows the age distributions of these RNs. An increasing trend starts in the early 20s and peaks in the mid-to-late 20s. From there, the return amount is relatively constant around 90 people for each age between 27 and 37. Thereafter, the trend decreases as people reach their late 30s.

Without knowing all reasons why these licensees left the UI payrolls and later returned, we hypothesize from the age pattern that many RNs take a few quarters break to give birth, adopt, or care for new-born children before returning to the healthcare industries.

FIGURE 15:
TOTAL RN LICENSEES WHO LEFT DURING THE CHILD-BEARING AGE (AGE < 41) AND RETURNED TO HEALTHCARE INDUSTRIES IN UTAH PAYROLL RECORDS WITHIN 3 YEARS



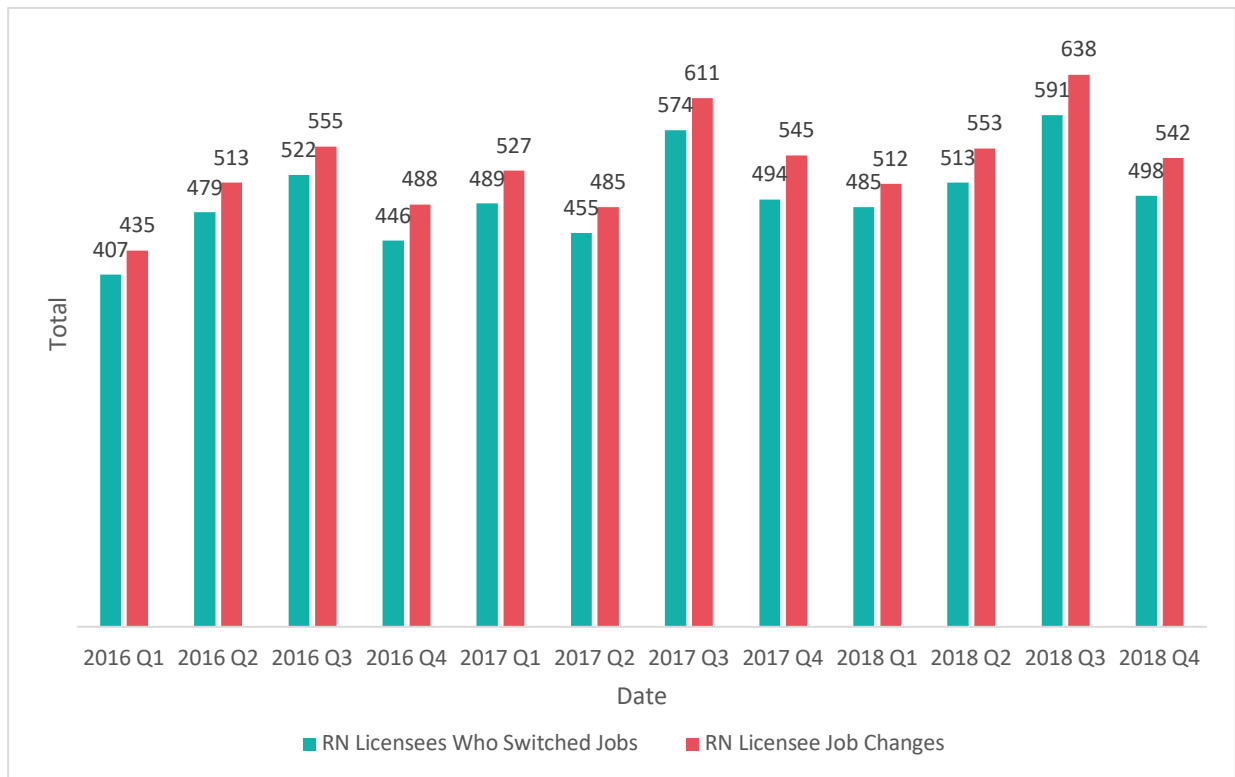
TURNOVER, JOB AND INDUSTRY CHANGES AMONG RN LICENSE HOLDERS

Q. What are the job changes and industry movements by RN license holders?

A. Figure 16 features the total number of RN licensees in the healthcare industry who changed a job (i.e., changing an employer, whether into healthcare or not) and the number of total job changes in each quarter (e.g., a job changer can change jobs more than once in a given quarter) from the first quarter of 2016, to the fourth quarter of 2018. The job changers and job changes both grew with time. However, each quarters' ratio of the total number of job changers to the total number of RN license holders in the healthcare industries held steady over time. This seems natural since overall healthcare employment grew with time. Across the 12 listed quarters, there were roughly 400 to 500 job changers. The number of jobs changed ran about 30 to 40 more than the number of job changers in each quarter. This shows that some RNs will change more than one job within a given calendar quarter. These more-than-once job changers constitute less than 10% of RN license job changers in a given quarter.

There is also a noted seasonal pattern. The most job changes occur in the third quarter of each year. The lowest quarter for change is the first quarter. This could be the educational community's influence within healthcare.

FIGURE 16:
TOTAL RN LICENSEES JOB CHANGERS AND JOB CHANGES WITH HEALTHCARE INDUSTRIES

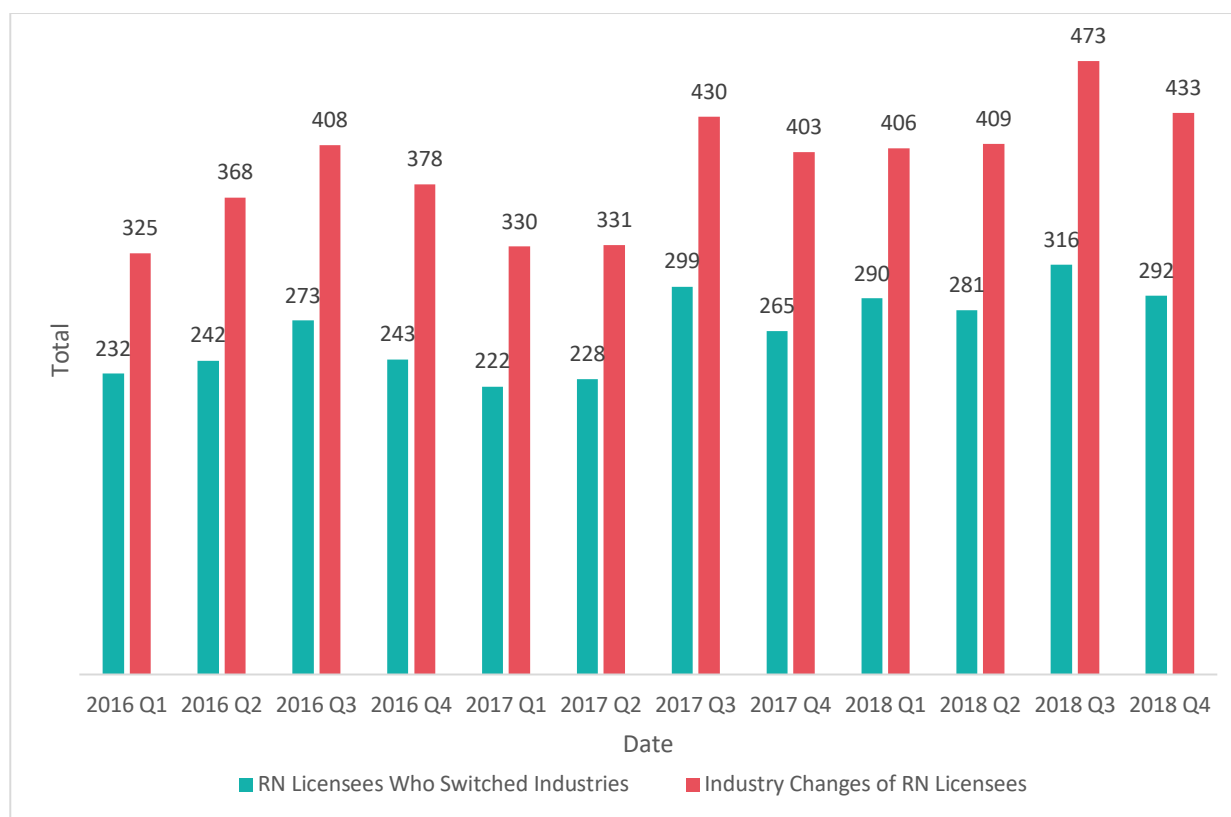


Teaching and research are a subcomponent of the RN profile, especially in the university realm. Graduations and internships generally play out by the end of the second quarter. Impacted RNs would need to find another job thereafter. This may be why changes are highest in the third quarter and lower in other quarters when studies are ongoing.

From this job-change activity, a turnover rate can be generated. The total number of changes per quarter in Figure 16 can be used as a ratio upon the total RN licensees worked in healthcare industries in the same quarters (Figure 2).

The quarterly churn (turnover) rates per quarter range between 2.1% to 2.8%, with the highest churn occurring in the third quarter of each year. These extrapolate to yearly turnover measures of 9.4% for 2016, and 9.9% for both 2017 and 2018.

FIGURE 17:
NUMBER OF RN LICENSEES WHO SWITCHED INDUSTRIES AND THEIR TOTAL NUMBER OF INDUSTRIES CHANGES



These are exceptionally low turnover rates. The U.S. Census Bureau's Longitudinal Employer-Household Dynamics program⁸ provides a means to determine an all-industry churn rate. Across the same 12 quarters shown in Figure 14, quarterly all-industry employment churn rates range from 15% to 19%. These extrapolate

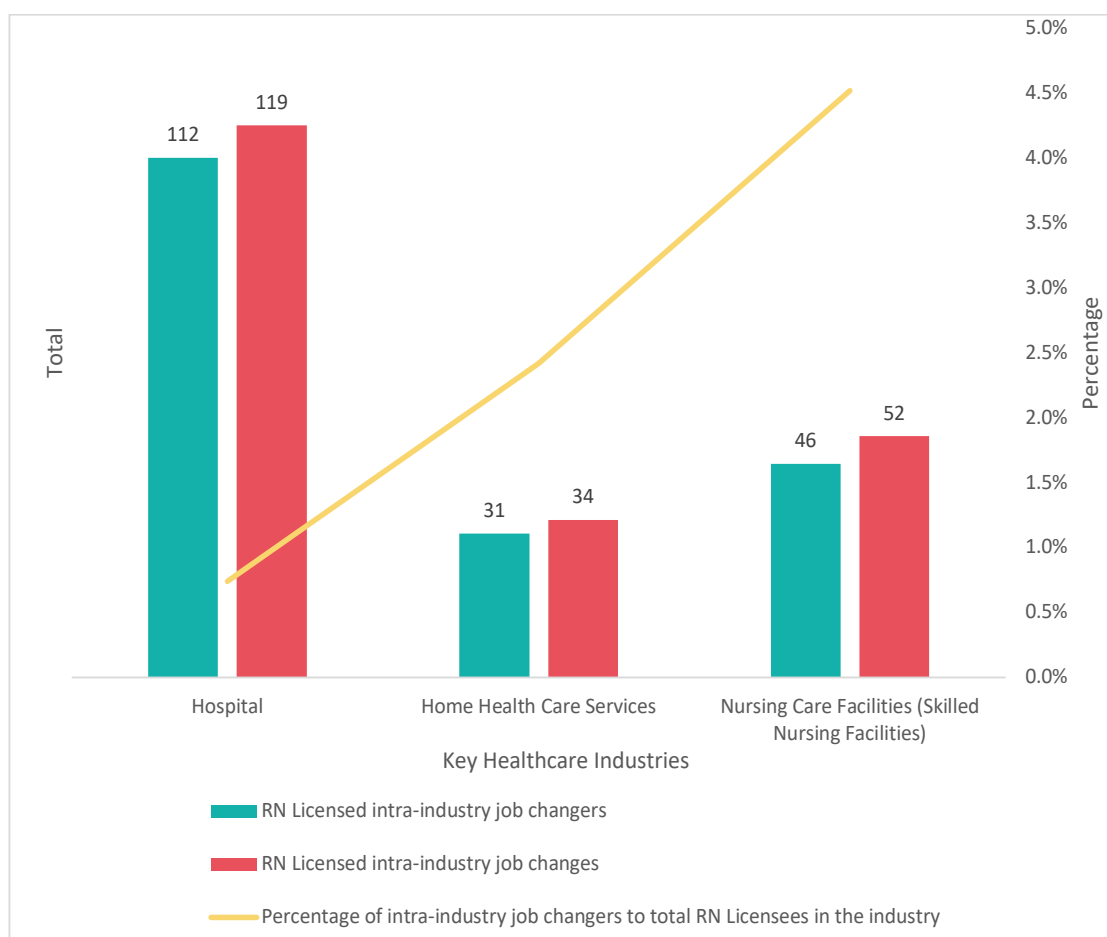
⁸ [https://lehd.ces.census.gov_LED Extraction Tool, variables EmpEnd, HirN, and Sep.](https://lehd.ces.census.gov_LED%20Extraction%20Tool,variables%20EmpEnd,HirN,and%20Sep)

to high annual rates. Many workers don't change their jobs at all in a year. Others change multiple times. It is the multiple changers who inflate the numbers. That being the case, the low RN churn rates show that the RN workforce does not change employers often or excessively.

Figure 16 dealt with RNs in the healthcare industry who changed employers. This could be going from one hospital to another. It could be going from a hospital to a software company. The change does not have to be within healthcare. Figure 17 looks specifically at not just changing employers but also changing industry.⁹ For example, changing from a hospital to something other than a hospital, whether it be a different healthcare setting or a non-healthcare setting, is an industry change. Going from one hospital to another hospital is not counted as an industry change.

Among the 498 job changes seen in the fourth quarter of 2018 (Figure 16), 292 of them switched industries when they switched employers. This means that 59% of RN job changers also moved to a different industry

FIGURE 18:
INTRA-INDUSTRY JOB CHANGES IN KEY HEALTHCARE INDUSTRIES IN 2018 Q4



⁹ See Appendix B for "Industry Change" definition.

in that quarter. Across the shown quarters, the quarterly industry change percentages range from 45% to 60%, but collectively average 54%.

Continuing with 2018 Q4, Figure 18 analyzes the job changes in three large healthcare industries: hospitals,¹⁰ nursing care facilities and home health care services. The changes are only movements within the industries themselves. There were 112 RN job changers within hospitals, 31 within home health care services and 46 within nursing care facilities.

Figure 18 includes the percentage of RN job changers out of total RNs in the industry.¹¹ Less than 1% of RNs changed to another hospital. Annualized, this says that less than 4% of hospital-based RNs change jobs by going to a different hospital.

The movement ratios are higher within the home health care services and the nursing care facilities segments. Home health care movement is 2.4%. It is nearly 10% annually if we multiply this quarterly percentage by 4. In nursing care facilities, the movement is 4.5% or 18% annually. One possible reason these areas have higher turnover is because these facilities usually share staff.¹² Other factors, such as working conditions, levels of care and compensation packages, may also contribute to the difference of these movement ratios.

AVERAGE RN WAGES IN HEALTHCARE INDUSTRIES

Q. What are RN licensees' wages in the various healthcare industries?

A. Table 1 shows the average quarterly wage of RNs for age groupings in fourth quarter 2018. RNs were only quantified if they had wage information with the same employer in 2018 Q3, 2018 Q4 and 2019 Q1. This ensures that the measurement includes only workers with full-quarter employment in fourth quarter 2018.¹³



¹⁰ Hospitals includes both 622110 General Medical and Surgical Hospital and 611310 Colleges, Universities and Professional Schools.

¹¹ In the fourth quarter of 2018, 15,134 RN licensees worked in a hospital, 1,281 RN licensees in home health care services and 1,018 RN licensees in nursing care facilities.

¹² "Nursing-home operators also seek information about COVID-19 cases at other facilities, because they often share staff." https://www.wsj.com/articles/coronavirus-strikes-at-least-2-100-nursing-homes-across-u-s-killing-2-000-residents-11586554096?mod=hp_lead_pos1

¹³ See Appendix B for "RN Licensee Primary Job and Wage" definition.

RN wage profiles by age group follow a typical pattern. Wages grow with tenure and tenure only comes with time. So younger workers have a lower average wage than do older workers.

Like many other industries, the wage peak is in the 50- to 60-year-old age group. Wage measures thereafter deteriorate. Several factors influence this. Retirement's influence can be seen in the declining quantity of workers after the 50- to 60-year-old segment. The more generously paid workers in the 50- to 60-year-old segment may find themselves in a better position to retire sometime before reaching the 60 and older age interval. Therefore, the overall wage average of those who remain in the later intervals may diminish.

Another factor is that full- and part-time employment cannot be identified and separated within Workforce Services' UI payroll records. Each wage record includes total wages paid for the quarter, whether those wages were earned through full- or part-time employment. It seems logical that the older-aged workers who do remain workforce active may be doing it by transitioning from full-time to part-time employment. The overall effect would be to lower the average wage calculation.¹⁴

TABLE 1:
AVERAGE QUARTERLY WAGE OF RN LICENSEES IN HEALTHCARE INDUSTRIES IN 2018 Q4 BY AGE

Age	Total RN Licensees	Percentage of Total RN Licensees	Average Quarterly Wage
20 to 30	3,377	19.7%	\$ 11,646
31 to 40	5,507	32.1%	\$ 13,098
41 to 50	4,089	23.8%	\$ 16,289
51 to 60	2,999	17.5%	\$ 18,217
61 to 70	1,116	6.5%	\$ 17,364
Above 70	58	0.3%	\$ 11,894

Besides age, wage information can be parsed by industry segmentation. Table 2 shows the average quarterly wage for each industry setting where more than 30 RNs worked in fourth quarter 2018. The table is ranked in descending



¹⁴ The UI payroll average wage may differ from other occupational wage sources that are derived from surveys. Surveys have the ability to parse out full- and part-time workers and make wage adjustments accordingly.

order by the total number of RNs employed. Again, UI payroll records do not have the information of working hours. Wage levels across different industries may largely associate with the total amount of RNs who work full time and part time.

TABLE 2:
AVERAGE QUARTERLY WAGE OF RN LICENSEES IN HEALTHCARE INDUSTRIES IN 2018 Q4 BY 6-DIGIT NAICS CODE (LISTED BY DESCENDING ORDER OF TOTAL NUMBER OF RN LICENSEES HIRED)

NAICS	Industry Description	Average Quarterly Wage
622110	General Medical And Surgical Hospitals	\$ 14,113
611310	Colleges, Universities, And Professional Schools	\$ 17,770
621610	Home Health Care Services	\$ 14,143
623110	Nursing Care Facilities (Skilled Nursing Facilities)	\$ 15,663
621111	Offices Of Physicians (Except Mental Health Specialists)	\$ 14,949
611110	Elementary And Secondary Schools	\$ 11,037
621493	Freestanding Ambulatory Surgical And Emergency Centers	\$ 11,750
622310	Specialty (Except Psychiatric And Substance Abuse) Hospitals	\$ 16,829
621399	Offices Of All Other Miscellaneous Health Practitioners	\$ 15,247
623220	Residential Mental Health And Substance Abuse Facilities	\$ 11,349
621492	Kidney Dialysis Centers	\$ 18,378
622210	Psychiatric And Substance Abuse Hospitals	\$ 16,270
623990	Other Residential Care Facilities	\$ 11,584
624190	Other Individual And Family Services	\$ 15,561
611210	Junior Colleges	\$ 12,388
621498	All Other Outpatient Care Centers	\$ 19,272
623311	Continuing Care Retirement Communities	\$ 14,390
624120	Services For The Elderly And Persons With Disabilities	\$ 12,213
621420	Outpatient Mental Health And Substance Abuse Centers	\$ 13,486
621991	Blood And Organ Banks	\$ 17,399

CONCLUSION

Demand for the healthcare industry and its subsequent growth is closely aligned with Utah's overall population growth. Utah is a fast-growing state; therefore, its healthcare and nursing labor force must also grow rapidly. It would be hazardous to have Utah's population and subsequent healthcare needs grow while the nursing supply does not keep pace, leaving nursing positions unfilled.

Profiling Utah's labor demographics and supplementary nursing characteristics strengthens Utah's ability to support and maintain a steady and skilled labor supply. Nursing can be demanding. Therefore, whatever support a society can impart toward a nursing labor supply is knowledge and resources well utilized.

This study is meant to impart added knowledge and understanding toward the Utah nursing labor market. The healthcare industry is experiencing sizeable growth in Utah, including the nursing profession. This industry and its occupations are too important to not be monitored, which is this study's purpose: to reveal findings and impart knowledge to the UMEC and other key stakeholders to help sustain the Utah nursing profession, keeping it strong and thriving.

APPENDIX A: DATA SOURCES

1. Employee wage records within the Unemployment Insurance Tax System

On a calendar quarter basis, Utah employers report their payroll information to the Utah Department of Workforce Services' Unemployment Insurance (UI) tax system. This reporting covers more than 90 percent of Utah employment information.¹⁵ The UI data provides the foundation to track employee movements and earnings. However, the UI data does not provide detailed demographic information about the employee. In addition, the UI system does not provide number of hours worked by the employee, start or end dates of employment, or occupational titles.

2. U.S. Bureau of Labor Statistics' Quarterly Census of Employment and Wages

This reporting system is meant to capture monthly employment and total wages supplied by employers, preferably at the establishment (i.e., individual location) and not the firm level. The Quarterly Census of Employment and Wages (QCEW) includes more than 95 percent of total U.S. jobs.¹⁶ QCEW data identifies employers by industry. The QCEW provides expanded information surrounding the employers identified with healthcare employees in the UI system. QCEW data provides clarity on company accounting changes and mergers and acquisitions. This helps to ensure that the churn and turnover rate calculations are truly based upon job changes and not upon company accounting changes.

3. Division of Occupational and Professional Licensing Registered Nurse Licensees Data

There are occupations that require a license or similar certification for practice within that occupation. The Division of Occupational and Professional Licensing (DOPL) is the Utah agency assigned to administer occupational licenses. This licensing system provides demographic information about RNs that Workforce Services' UI system does not capture. Licensees' name, gender, birthday, license status and issue and expiration dates are valuable additions. DOPL data is made available to WRA through a signed Memorandum of Understanding (MOU).¹⁷ The MOU covers licenses for registered nurses issued from Jan. 3, 1980, to Dec. 31, 2018.

According to DOPL, RN license applicants need to complete a series of steps to become licensed, including passing the National Council Licensure Examination exam by the National Council of State Boards of Nursing, submitting a school transcript and fingerprints, and paying a license fee.¹⁸ RN license renewals are due by January 31 of the following odd-numbered year and are valid for the next two years.¹⁹ Unless RN license holders renew, their license automatically expires on January 31 of every odd-number year. The next expiration date for current active RN licensees will be Jan. 31, 2021. This cut-off for license renewal provides a benchmark to analyze the workforce between the first and second quarters of each odd-numbered year. Many data patterns can be exposed and explained at this license renewal juncture.

15 U.S. Bureau of Labor Statistics: <https://www.bls.gov/cew/cewover.htm>

16 Quarterly Census of Employment and Wages <https://www.bls.gov/cew/>

17 The current MOU agreement will expire on Dec. 31, 2024

18 Utah Department of Commerce Division of Occupational and Professional Licensing <https://dopl.utah.gov/nurse/index.html>

19 Registered Nurse or Licensed Practical Nurse Application Instructions and Information https://dopl.utah.gov/licensing/forms/applications/012_RN_LPN.pdf

APPENDIX B: DEFINITIONS

Child-bearing Year Definition

The majority of registered nurses are female.²⁰ Therefore, child-bearing factors as a significant part of the RN labor force profile. In this study, we have defined the “child-bearing” age as less than 41 and it is license holders in that age range who are examined for labor patterns or decisions possibly influenced by child-bearing/caring.

Healthcare Industry and Key Healthcare Industry

Besides the North American Industry Classification System (NAICS)²¹ code “62” (i.e., Health Care and Social Assistance), we have also included NAICS code “61” (i.e., Educational Services) as part of the general healthcare industry. Education is included as some RNs work for local school districts or university-affiliated health care systems. In Workforce Services’ UI tax system database, workers are listed under the parent company umbrella. For example, the University of Utah hospital payroll records are included with the greater University of Utah master account. This master account is industry coded as education. Therefore, to capture the University of Utah hospital system we had to include the education NAICS code. We assume that licensed nurses found on the University of Utah payroll records are practicing as RNs in the University of Utah hospital system.

Our healthcare industry definition includes both the private and government ownership. In addition, we have broadened the NAICS code industry identification to its most detailed level (6-digit) to identify specific industries employing RNs. The following 6-digit NAICS codes employ the majority of RN licensees in the fourth quarter of 2018.

- 622110 General medical and surgical hospitals
- 611310 Colleges, universities, and professional schools
- 621610 Home health care services
- 623110 Nursing care facilities (skilled nursing facilities)

Industry Change

If the employers before and after an RN job change are in different 6-digit NAICS code, then these job changes are defined as industry changes. Industry changes do not occur with every RN job change.

Job Changes

This report defines RN licensees who had an employer change in any given quarter as a job changer. The QCEW database is used to clarify employer information to determine employer changes. In the UI payroll system, corporate mergers and acquisitions or splits can look like an employee movement to another employer, when in actuality the employee did not change venue. Only the employers’ paperwork changed. The QCEW identifies these non-movements and excludes them from job changes. The QCEW database also helps identify multiple job-holding RNs to avoid counting separate employers as a job change.

20 Supply of Nurses in Utah, The 2016 Survey of Utah’s Registered Nurses <https://umec-nursing.utah.gov/wp-content/uploads/RN-report-final-updated5-9-2016.pdf>

21 North American Industry Classification System <https://www.census.gov/eos/www/naics/>

RN Licensee Primary Job and Wage

RN wage earnings can be gathered from the UI payroll system. But since workers can change jobs or have a job break during a quarter, not all employee wages are full-quarter (and thus maximum) wages. Therefore, when assessing RN wage information, only workers who had a full quarter of employment with the same employer were used. To meet these criteria, the worker had to be with the same employer in the preceding and following quarter ($t-1$, t , $t+1$; where t is the quarter under review). If that requirement is met, then the quarter under consideration (t) the worker is assumed to be with that employer throughout the entire quarter; therefore, the wages recorded are assumed to be full-quarter wages.

Young Registered Nurse

The U.S. Census Bureau identifies Utah as having the nation's youngest population.²² This report defines young RN licensees as those under 30 years of age.

²² Population Estimates Show Aging Across Race Groups Differs <https://www.census.gov/newsroom/press-releases/2019/estimates-characteristics.html?cid=cbsm>