UTAH DATA RESEARCH CENTER

Educational and Wage Outcomes Among Nursing Program Graduates

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Abstract

This research describes the postgraduation pathways for Certified Nursing Assistants (CNA), Licensed Practical Nurses (LPN), and Registered Nurses (ADN, BSN) who graduated from a public postsecondary institution in Utah. These pathways include the labor market and the return to school. Labor market outcomes include the time to employment in the nursing industry after graduation, wage growth, employment sector, and leaving the nursing industry. A strong dichotomy exists in labor market outcomes between CNAs and LPNs, ADNs, and BSNs. CNAs are employed in different sectors, such as nursing homes, as opposed to hospitals. The average CNA with five years of experience earns about $20,000 less per year than a new LPN. CNAs also leave nursing at the highest rate; only 50% of CNA graduates in this study were in the nursing field five years after graduation. This dichotomy continues when comparing the educational pathways for CNAs to those of LPNs and ADNs. Under 10% of CNAs earn a Bachelor's degree in nursing, while more than 50% of LPNs and ADNs earn a Bachelor's degree in nursing. CNAs pursue education outside of nursing at a higher rate than LPNs and ADNs, with 21% earning a degree outside nursing compared to 4% and 5%.

Keywords

nursing education, career and technical education, employment, career advancement, Utah System of Higher Education, Utah Department of Workforce Services

1 | Introduction

1.1 | Background/Intro

Understanding the postgraduation pathways for nurses can lead to more informed decisions for those concerned with the labor market and education outcomes of nurses. This research describes Utah's postgraduation labor market and continuing education pathways for postsecondary award holders from a nursing program from a public institution in Utah. The pathways for advanced practice nurses are beyond the scope of this work. This research shows postgraduation wage, employment, and educational dynamics for different initial degrees. Finally, this research addresses early exit from the nursing industry. Demonstrating these possible outcomes may allow interested parties to make informed decisions regarding policy, advocacy, and career choices regardless of initial nursing awards.

This study covers Certified Nursing Assistants (CNA), Licensed Practical Nurses (LPN), Associate Degree in Nursing (ADN), and Bachelor's Degree in Nursing (BSN). While CNAs are technically not nurses, this study includes CNAs for several reasons. First, starting as a nurse aide could encourage one to become a nurse. Second, during the study period, holding a CNA certificate awarded points for admissions decisions to LPN and RN programs. Finally, the public technical colleges are transitioning to holding a CNA certificate as a prerequisite to enter an LPN program.

The education requirements differ for each type of nursing award, and those differences influence labor market and continuing educational outcomes. A CNA program has 100 contact hours and 24 hours of practical training leading to the award of a technical certificate. Graduates must pass the Utah Nursing Assistant Registry (UNAR) State Certification Exam within one year of program completion required to practice as a CNA. An LPN program consists of 26 credit hours of instruction, approximately ten months of enrollment. Upon completing an LPN program, graduates must pass the National Council Licensure Examination (NCLEX-PN) licensing exam to work as an LPN. Three different degrees prepare graduates to practice as an RN: an Associate of Applied Science (AAS), an Associate Degree in Nursing (ADN), and a Bachelor's Degree of Nursing (BSN). An AAS is focused solely on the nursing curriculum and is a faster program (SLCC Nursing, n.d.; Utah State University General Catalog, n.d.). An Associate Degree in Nursing includes more liberal arts courses, so it can transfer to a Bachelor program without additional coursework (UVU Department of Nursing, n.d.). Both must pass the NCLEX-RN, upon completion of to become a Registered Nurse (RN). For the sake of simplicity, this research will consider both associate degrees as equivalent, and they will both be referred to as ADN. Finally, a bachelor's degree in nursing, the highest possible initial award, must also pass the NCLEX-RN and practice as an RN.

The scope of practice differs significantly for each type of nursing award based on the amount of education and training required. CNAs provide basic patient care, including monitoring conditions, feeding, assisting in movement, and assisting with restroom use. These duties are part of the care plan determined by doctors and RNs (U.S. Bureau of Labor Statistics, 2023a). An LPN has a broader scope of practice than a CNA, but they still work under the direction of an RN. Beyond similar tasks as a CNA, an LPN communicates with RNs about the effectiveness of the care plan, can use specialized equipment, arranges tests, and participates in patient education and communication of future care options and pathways (U.S. Bureau of Labor Statistics, 2023b). Finally, RNs have the broadest scope of practice. They provide all levels of physical care while participating in the coordination and design of care. In the hospital setting, RNs can have different specialties depending on the ward in which they work (U.S. Bureau of Labor Statistics, 2022).

Institutional support for the pathway to a BSN impacts on the ability to move up the education ladder. The divergent outcomes between CNAs and LPNs evidence the necessity for institutional support. For many of the early years covered by this study, there was no formal transfer mechanism from a CNA program to LPN, ADN, or BSN program. Conversely, LPNs in the LPN-to-RN program start with the second year of nursing school, and the outcome is an associate degree.

Concerning routes to BSN awards, some LPN programs, such as the one at Utah Tech University, map out additional courses LPN holders need to move to a BSN program after an ADN (Utah Tech University). Additionally, LPN programs are working on transfer agreements with BSN programs so an LPN award earner can transfer directly into a BSN program. There are also direct routes to a BSN for ADN award holders. RNs with an Associate Degree can earn a BSN by entering a specific RN to BSN program. Those with an Associate of Applied Science must first complete general education requirements. Direct and well-defined paths to a BSN exist for many initial non-BSN awards. The well-defined education ladder allows for navigable pathways between LPN, ADN, and BSN. This partially explains the divergent outcomes between CNAs and the other nursing award holders.

1.2 | Literature Review

Prior studies have contextualized nursing in Utah. Two of these studies came from the Utah Medical Education Council (UMEC) (2015, and 2022) and one from the Utah Department of Workforce Services (DWS) (2020). Each study examined various aspects of the Utah nursing labor force. Some studies described graduation cohorts (Utah Medical Education Council, 2015, 2022) using data directly from institutions (Utah Medical Education Council, 2015) or survey data (Utah Medical Education Council, 2022). Other studies described the nurses' labor market outcomes (Utah Department of Workforce Services, 2020; Utah Medical Education Council, 2022).

The UMEC surveyed licensed RNs and LPNs in Utah to address the supply of nurses. This survey was conducted in 2020 and weighted to be representative. The UMEC (2022) report shows that most nurses are white and women. There has been a decrease over the years of nurses under 35. This report also shows that while BSNs are a smaller share of the nursing population, that share has grown since 2015. This report also shows that more nurses are upgrading their skills by earning a bachelor's or graduate degree at some point after entering the workforce. LPNs' gender and racial and ethnic characteristics are similar to those of BSNs, but the largest proportion of LPNS are under 35 (Utah Medical Education Council, 2022).

A prior study by the UMEC described the supply of nurses from 2007 to 2014 through the lens of the training capacity of postsecondary institutions in Utah (Utah Medical Education Council, 2015). The last two years of the UMEC study coincide with the beginning of the current research. Depending on the initial nursing award, public institutions trained between 49% (BSNs) to 100% (LPNs) of nurses who completed an award in Utah in 2014 (Utah Medical Education Council, 2015). Each year, every type of program saw more qualified applicants than programs had space for (Utah Medical Education Council, 2015).

The Department of Workforce Services merged Department of Professional Licensure data with DWS Unemployment Insurance data for a labor supply of nurses. In this study, DWS included all actively licensed nurses during the fourth quarter of 2018. Of the 35,863 actively licensed nurses, 25% did not appear in UI records during the fourth quarter of 2018, and 16% of employed RN license holders were employed outside the healthcare setting (Utah Department of Workforce Services, 2020). The percentage of licensed nurses not on the payroll is only 20% for those under 30 and 23% for those 31-40 (Utah Department of Workforce Services, 2020). Hospitals employed 62% of the youngest cohort, followed by educational institutions, including university hospitals, at 16% (Utah Department of Workforce Services, 2020). Yearly wages for the youngest cohort were close to $46,000 and were $52,000 for the next youngest (Utah Department of Workforce Services, 2020), those most similar to the current research.

The current research differs from the previous studies in several ways. Like the DWS (Utah Department of Workforce Services, 2020) study, this research uses UI wage data to follow nurses through their careers instead of survey responses. The current research adds to the DWS study by including additional education as a component of how nurses supply labor after graduation.

2 | Data

This report focuses on graduates from nursing fields from public technical colleges and degree-granting institutions in Utah between 2011 and 2020 who then entered the workforce in Utah. The Utah Data Research Center's (UDRC) matching algorithm connected Utah System of Higher Education (USHE) nursing program graduates with the DWS unemployment insurance (UI) wage data. USHE data contains program as defined by the Classification of Instructional Program (CIP), award level defined by the Integrated Postsecondary Education Data System (IPEDS), completion date, gender, race or ethnicity, age, and re-enrolment date. DWS UI data contain wages, the year and quarter of earned wages, the employer's name, and the North American Industry Classification System (NAICS) code.

The CIP code determines who is considered a nurse or nurse-adjacent graduate. BSNs are CIP code 51.3801 and IPEDS award level of "5" for a Bachelor's degree. ADNs share a CIP with BSNs, 51.3801, but an IPEDS level of "3" for an Associate's degree. LPNs are solely determined by CIP 51.3901, as are CNAs with CIP 51.3902. Both LPNs and CNAs are technical certificate awards. The earliest award based on the first completion date determines an individual's initial nursing type.

For the purposes of this study, reenrollment is defined as a nursing completer reappearing in the records as enrolled in a semester or a new certificate after the completion date of the initial program. To be counted as completing an additional award, initial award earners had to have another completion date at least one quarter after the initial completion date. Subsequent nursing awards were categorized in the same way as the initial award. Those who did not earn additional nursing awards were marked as such. Each date was converted to a year-quarter format to match the UI data.

UI records include quarterly wages and NAICS of the primary industry as reported by the firms. These records are used to determine the labor market outcomes. Any nursing award holder employed in the three-digit NAICS codes 611 (Educational Services), 621 (Ambulatory Health Care Services), 622 (Hospitals), 623 (Nursing and Residential Care Facilities), 624 (Social Assistance), and 923 (Administration of Human Resources) was marked as employed as a nurse for that quarter. An individual could have more than one employer during a quarter. If an individual had consecutive quarters of multiple employers, the individual is designated as a multiple job holder. The employer that paid the highest wage was considered the primary employer (Rao & Knold, 2021). In contrast, those with single or nonconsecutive quarters of multiple employers were considered job transitioners. When an individual had a job transition and was not employed in a nursing NAICS each subsequent quarter, they were considered to have left the nursing profession.

3 | Results

3.1 | Demographics

Historically, women have dominated the nursing industry, and the graduates in this study continue this trend. Most nursing graduates in all programs are women, but the percentage of female graduates decreases with higher awards. About 83% of CNAs and 85% of LPNs identify as women whereas only 81% of ADNs and 80% of BSNs identify as such (Table 1). All other graduates are male as this data does not include anyone who identifies as another gender.

Most nurses who graduated between 2011 and 2020 are white (Table 2). The proportion of nurses who are white is greatest for LPNs (87%), and it decreased for higher awards. A significant driver of this was an increasing proportion of Asians and those who did not disclose their ethnicity. Only about 73% of CNA graduates identify as white. Compared to state-level demographics, Black award earners are overrepresented as a percentage of CNAs (2%) and underrepresented in every other award (<1%). Those who identified as Asian are underrepresented across the board, as are those who identified as Native Hawaiian or Pacific Islander. Those who identified as multiracial or multiethnic were also generally underrepresented, and aside from LPNs, as were those who identified as American Indian or Alaska Native. Table 2 shows the racial and ethnic make up of each initial nursing award as well as the statewide make up as of the 2020 United States Census (US Census Bureau).

Table 1: Gender composition by nursing award type

Award Type	Female	Male
CNA	83%	17%
LPN	85%	15%
ADN	81%	19%
BSN	80%	20%

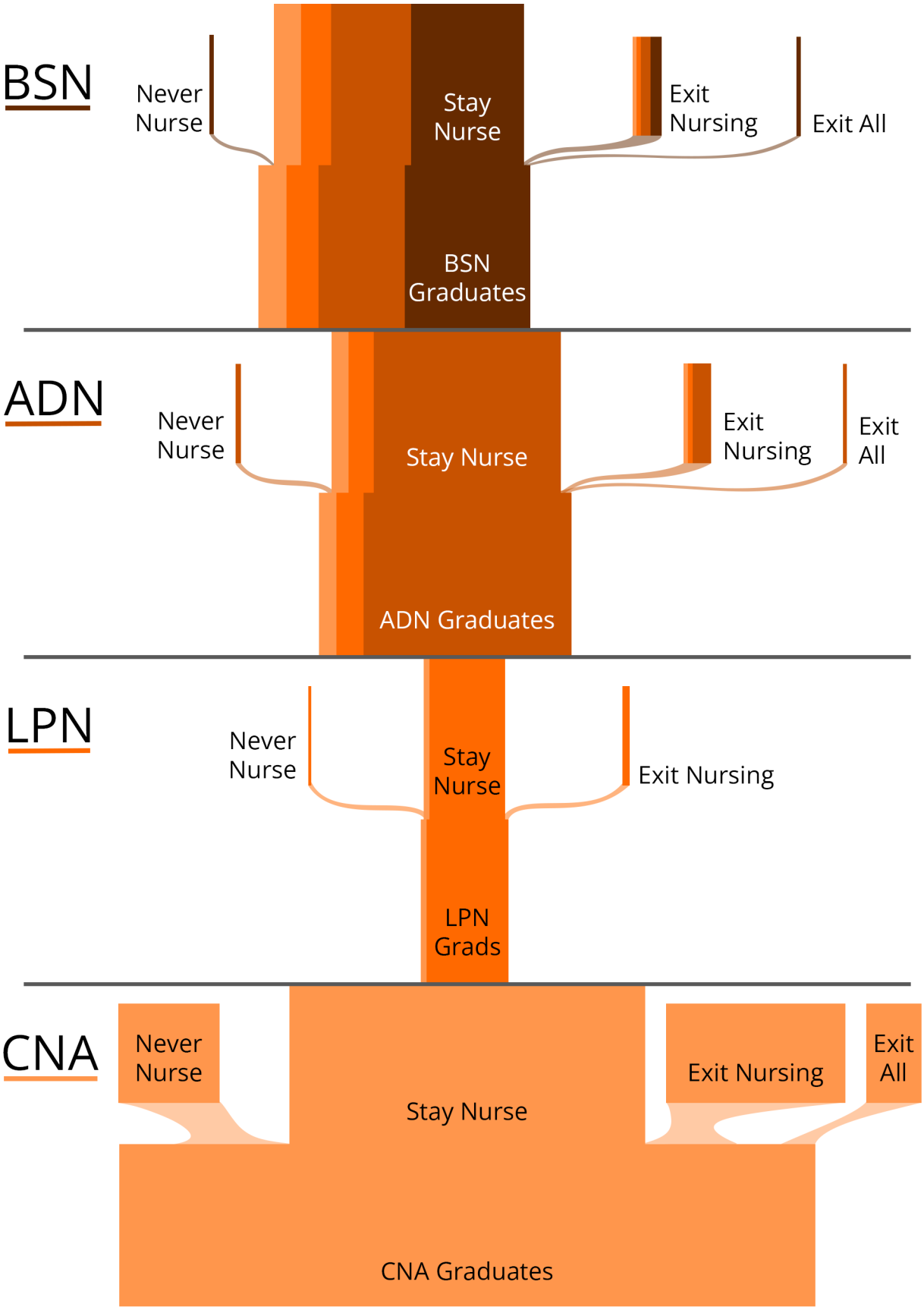
Graduates with a nursing award are older on average than their similarly credentialed peers. As expected, the median age at completion increased with each successively higher initial award. The median age of CNAs completing their certificate is 19, nearly a decade younger than those who graduate with a BSN. The low median age for CNA completers is due to a CNA certificate being a 100-hour certificate, completable in six weeks, and often offered as a concurrent enrollment award, earnable by high school students. The median age at completion for LPNs is 26 years old, increasing to 29 for BSNs. Increasing completion age is consistent with the increased amount of schooling needed for each successive postsecondary award and a shortage of space in each type of nursing program, which forces some to wait to enter a nursing program.

Concerning labor market outcomes, CNA graduates stay in the profession at the lowest rate (51%) followed by BSNs (90%), ADNs (90%), and LPNs (92%). About 14% of CNA graduates never entered the nursing field, and about 25% exited the profession within five years. Approximately eight percent of initial CNA recipients do not appear in the wage records after finishing the credential, but reasons for this could include leaving the labor

Table 2: Race and ethnicity make up of each initial nursing award. Cells containing "-" are suppressed for privacy reasons.

Award Type	Asian	Black	Hispanic	American Indian	Multi	Pacific Islander	Unknown	White
CNA	1.7%	2.0%	13.6%	1.4%	1.9%	0.7%	5.1%	73.4%
LPN	1.4%	-	5.9%	1.7%	1.1%	-	1.6%	87.7%
ADN	1.8%	0.9%	5.2%	0.5%	1.1%	0.4%	4.0%	85.6%
BSN	2.4%	0.5%	4.4%	0.7%	1.8%	-	6.6%	82.8%
Utah	2.5%	1.2%	15.1%	1.3%	8.5%	1.1%	12.0%	78.7%

Figure 1: General Labor Market Dynamics After Initial Graduation



Note: The shade corresponds to the initial award, and the vertical level corresponds to the highest award received. Some students did all levels of nursing while others skipped levels. This graphic only accounts for the first and last awards.

Figure 2: Distribution of First Nursing Industry by Award Level

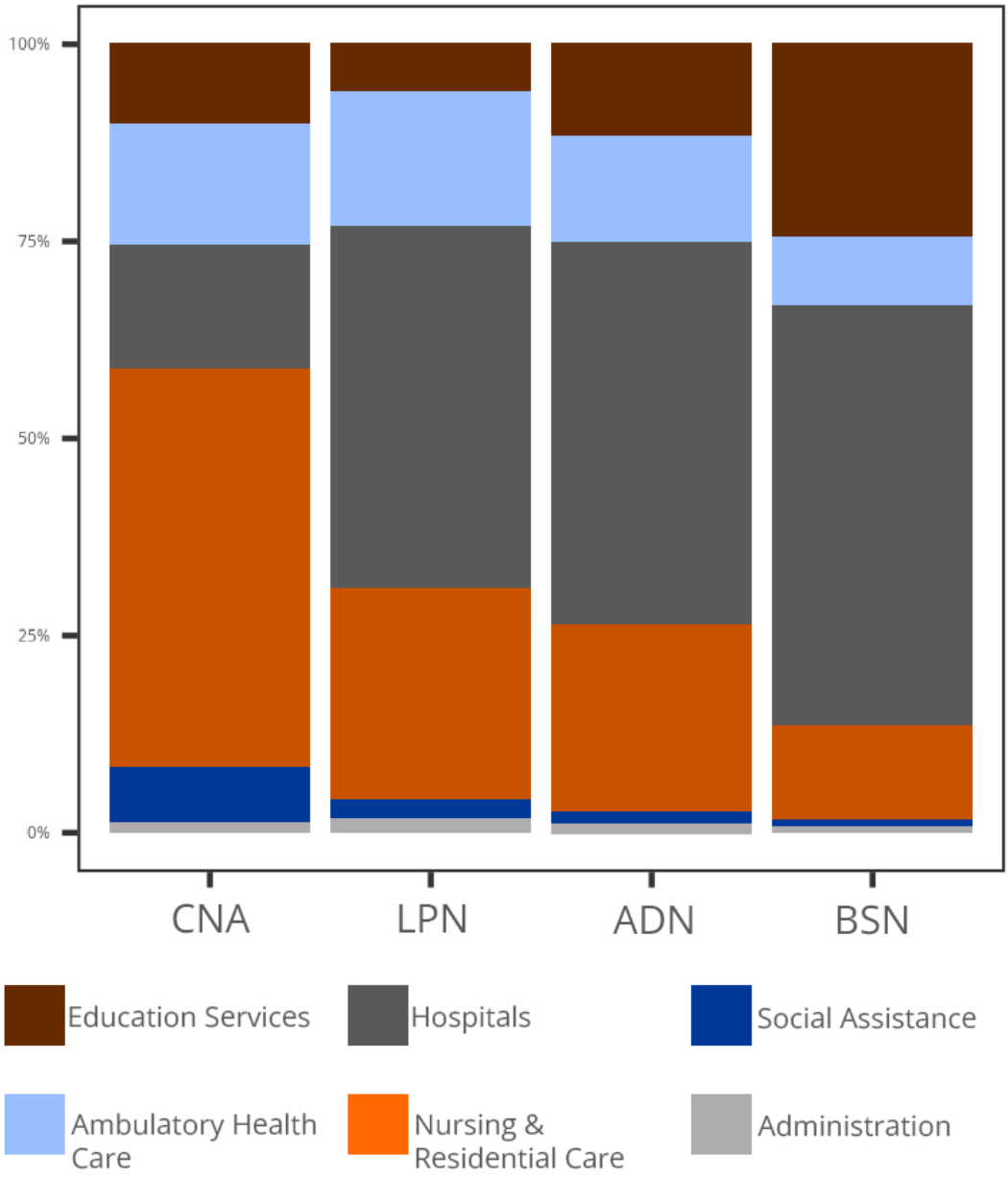


Table 3: Quarters to the first nursing job for those not employed in a nursing NAICS before graduation

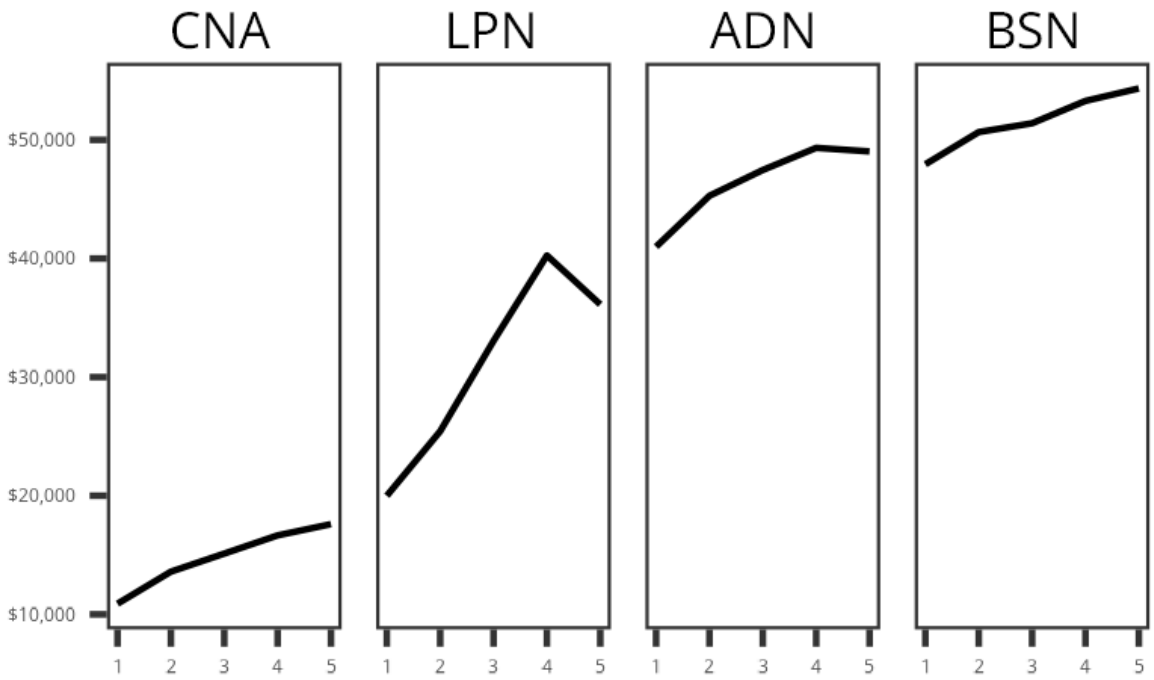
Award	25th	Median	75th	90th
CNA	1	2	6	14
LPN	1	4	6	20
ADN	1	2	7	22
BSN	1	1	6	21

market, moving outside of Utah, or working in a manner that is not captured by the wage records. Conversely, all other graduates had a much lower rate of exit from nursing (6-8%), and very few graduates of the other credential types never became nurses (1-2%) or exited the records (0-2%).

About two percent of CNA graduates were enrolled in a USHE institution at the end of the study period compared to one percent of LPNs, and less than one percent of ADNs and BSNs.

The largest industry of employment differed by award level. Over half of BSN graduates secured their first nursing job is in a hospital. The second largest initial industry was Educational Services at 24% (Figure 2; see Appendix for percentages). However, the percentage in Educational Services may also include a hospital setting, since the University of Utah Health Care is included with the University in NAICS 611. A plurality of ADNs and LPNs are employed in hospitals, 48% and 46%, respectively. The next two largest LPN industries are Hospitals and Ambulatory Health Care Facilities,

Figure 3: Median Nurse Wage by Years of Experience and Award Level



which employed 15% and 16% LPNs as their initial nursing jobs, respectively. For CNAs, most found their first nursing jobs are in Nursing and Residential Care Facilities, which employ one-in-two for their first nursing job. BSNs had the highest median wages, followed by ADNs, LPNs, and CNAs (Table 5). This result holds for all industries except the Administration of Human Resources Programs, where ADNs had the highest median wage.

Wages increased during the first five years of employment in a nursing job for each type of award (Figure 3). For those who did not pursue further education, initial wages for each award level start at similar wages to those with the previous award type and five years of experience.

3.2 | Education Ladder

The nursing education ladder increases based on the length of the award and increased scope of practice starting with CNA followed by LPN, ADN, BSN, and Nurse Practitioner (NP). All levels can be an initial award except for NP, a graduate degree. The number of quarters to return to school is similar for the initial non-BSN nurses. The fastest LPNs reappeared in the records in the same quarter they graduated (Table 4). For CNAs and ADNs, the quickest to return reenrolled one quarter after graduation. The median number of quarters to return for LPNs and ADNs was one quarter. For LPNs, this was two quarters and five quarters for BSNs. In three quarters, 90% of LPNs who would return to school had returned to school; this increased to seven quarters for ADNs and eight quarters for CNAs and lept to 18 quarters for BSNs.

There are distinct differences in progression along the education ladder between CNAs and LPNs/ADNs. About 1% of all initial CNA graduates later completed an LPN, and 2% and 4% finished an ADN or BSN, respectively. Only 6% of CNAs who graduated between 2011 and 2017 completed a bachelor's degree in nursing. Initial LPN graduates

Table 4: Median Nurse Wages by Industry and Award Level

	Education Services	Ambulatory Health Care	Hospitals	Nursing & Residential Care	Social Assistance	Human Resource Programs	Total
CNA	$18,677	$19,857	$27,180	$15,687	$14,164	$28,638	$20,375
LPN	$50,135	$36,216	$46,214	$34,941	$22,058	$49,505	$43,019
ADN	$55,422	$44,788	$50,390	$45,659	$30,551	$54,779	$50,520
BSN	$57,776	$59,346	$56,248	$49,963	$48,425	$53,356	$56,545

Table 5: Time to Return to School by Initial Award Level

Award	25th	Median	75th	90th
CNA	1	2	4	8
LPN	0	1	1	3
ADN	1	1	3	7
BSN	3	5	12	18

received additional awards at much greater rates with about 30% of all initial LPN graduates completing an ADN and 35% finishing a BSN. About half of the LPNs (52%) and ADNs (50%) who graduated between 2011 and 2017 finished the full education ladder by 2020 (Table 5). Additionally, around 12% of those who earned an initial BSN award from 2011 to 2017 completed at least one graduate degree in nursing by 2020.

3.3 | Industry Exit

According to NAICS data, approximately 90% of BSNs, ADNs, and LPNs remain employed in the nursing industry seven years after graduation. CNAs have a very different relationship with attachment to the nursing industry. About 51% of CNAs are employed in the nursing industry during the seven years after initial graduation.

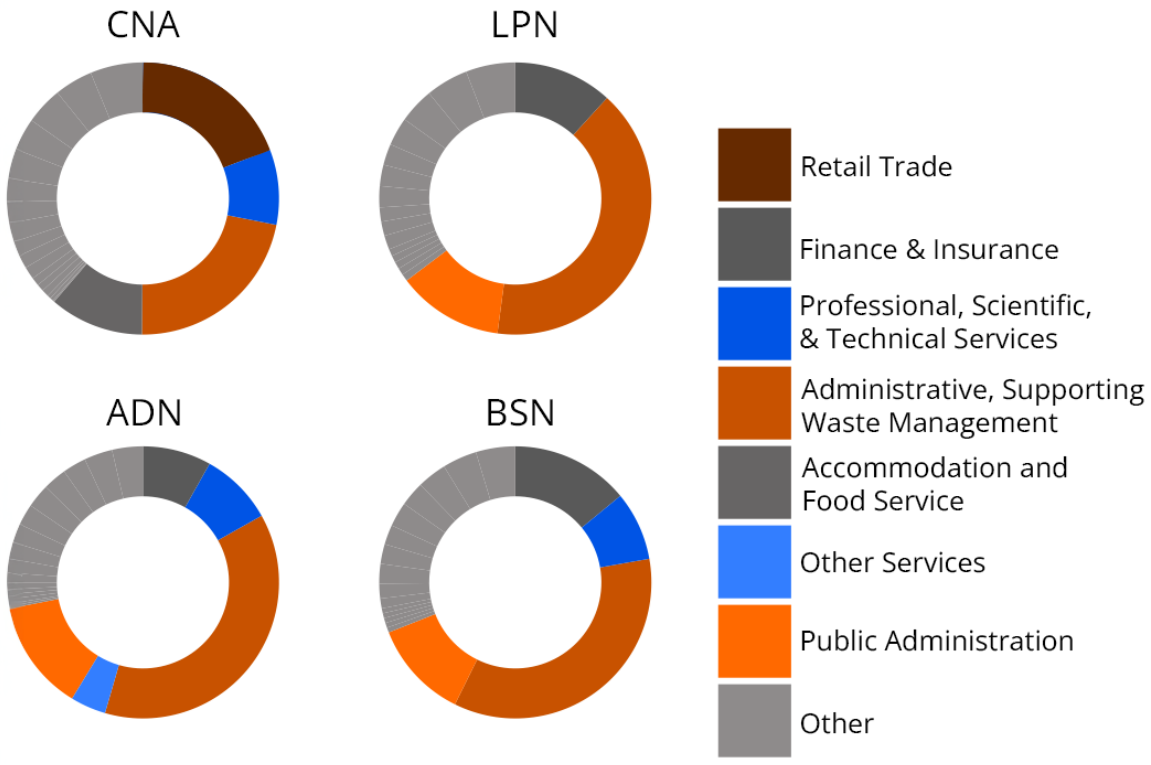
Peak employment in the nursing industry varies by initial award type (see Figure 3). For CNAs, the highest percentage employed in the nursing industry occur during the second and seventh years after completion of the initial program. Employment then remains mostly flat in nursing during the seven years following graduation. For LPNs, the fourth year after graduation marks the peak percentage of initial award earners employed in the nursing industry. For LPNs, employment in nursing increases for four years, followed by a minor decline.

Keeping with prior trends, initial non-nursing employment industry differs for CNAs from the other three types of nursing graduates. Three of the top five industries CNAs find employment in are Food Service (NAICS 72) and Retail Trade (NAICS 44 and 45); these are not top industries for the other nursing types (Figure 2). Public Administration (NAICS 92) and Finance and Insurance (NAICS 52) are leading industries of employment for LPNs, ADNs, and BSNs but they are not among the top five for CNAs. Administrative, Support, Waste Management and Remediation Services is a top five employment industry for all four nursing award types.

Table 6: Percentage of Graduates Who Completed the Nursing Education Ladder by Initial Award

Initial Award	% Completed
CNA	6%
LPN	52%
ADN	50%
BSN	12%

Figure 4: Top five non-nursing industries by award level



Exit from the nursing industry can occur through education in a non-related field. Many who returned to school and completed a degree not in nursing stayed in the Health Professions (Table 4). CNAs had the most who earned a final degree outside of nursing, eight times higher than BSNs, four times higher than LPNs, and close to 3.5 times higher than ADNs. CNAs who earned a degree outside of nursing also had the lowest percentage who earned a degree in Health Professions (that can be reported). Over half of the BSNs who earned a non-nursing degree stayed in the Health Professions, often moving to Health Administration or Public Health. Under half of the ADNs earned a degree in the Health Professions, and many went into General Health and Wellness or Dental Hygiene. Finally, roughly one-third of CNAs who earned a non-nursing degree stayed in the Health Professions. Many completed Phlebotomy, Medical Assistant, EMT, General Health and Wellness, and Surgical Technology programs.

Most nursing graduates who pursue non-nursing non-health degrees are in Liberal Arts. Exit patterns differs by initial award. For CNAs, LPNs, and ADNs, the single largest major of the final degree earned was Liberal Arts (Figure 3). For LPNs and ADNs outside of Liberal Arts, no single major had enough completers to report. CNAs also majored in two care adjacent industries, Education and Psychology.

Table 7: Percentage who returned to college to earn a degree outside of nursing by original nursing degree. Note that cells that contain "-" are suppressed for privacy

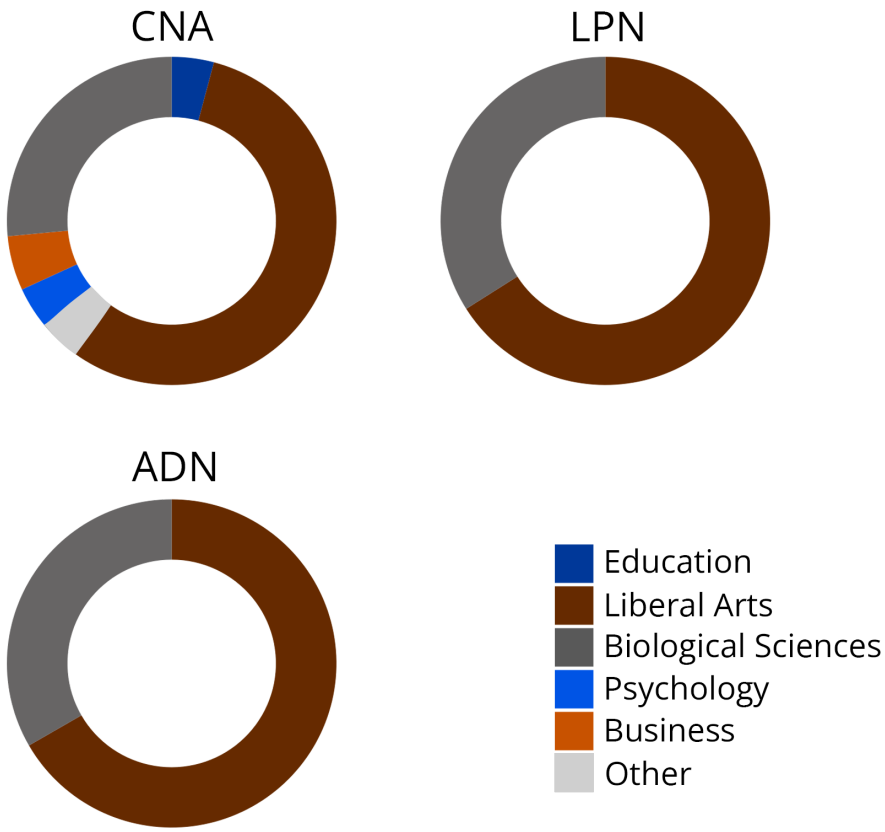
Award Type	Earned non-nursing degree	% of non-nursing degrees in Health Professions
CNA	21%	35%
LPN	4%	-
ADN	5%	46%
BSN	2%	61%

Some CNAs also pursued Biological Sciences. BSNs did share Business as a top major with CNAs. The largest major for BSNs was Interdisciplinary Studies focusing on Gerontology; this does not imply that these individuals focus on geriatric nursing as geriatric nursing has another CIP code.

4 | Discussion

This research demonstrates the differing outcomes between CNA award earners and other nursing award recipients. While this research cannot prove a causal relationship between the education pathways available for each award type, the most notable difference between a CNA award and other nursing

Figure 5: Top non-nursing and non-health Profession majors by initial award level. BSN award holders are not shown due to secondary disclosure reasons



awards for most of this study was the lack of well-established pathways to higher nursing credentials for CNAs. Further, this research demonstrates the importance of a BSN degree.

The absence of established pathways to license related credentials may contribute to CNAs poorer workforce outcomes including an increased likelihood of leaving the nursing field. CNAs with five years of experience also have an average annual wage $3,453 below the federal low-income threshold for the lowest cost of living areas in Utah for all household sizes for FFY 2021 (U.S. DHHS, 2021; U.S. HUD, 2021). The low wages paired with unclear advancement opportunities may contribute to CNAs 49% overall exit rate from the field of nursing.

This research also shows both similarities and differences to previous research in the area of racial and ethnic diversity. The latest cohorts of nurses are more racially and ethnically diverse than the population of nurses in Utah. In 2022, the UMEC found that 92% of RNs and 84% of LPNs were white, while this study found that between 2014 and 2020, 84% of RNs and 85% of LPNS were white. These numbers lack context, as an additional 50% of LPNs from this study are now RNs. More recent cohorts show the pipeline of nurses in Utah is more diverse than previous generations of nurses.

Similar to previous studies, this research show that the majority of RNs find employment at hospitals after graduation. Specifically, 48% of ADNs and 53% of BSNs find initial employment in the hospital industry. This is lower than the 62% and 55% of RNs found by DWS (2020), though this study focuses on the first nursing job. Additionally, the DWS study (2020) found a lower percentage employed in Colleges and Universities. This may have been due to differences in accounting for employment at the University of Utah, which has a significant healthcare system but falls under the NAICS code of Postsecondary Education rather than Hospitals. This result is also lower but closer to the UMEC (2022) study showing that 55% are employed in hospitals.

4.1 | Limitations

This research has several main limitations. Three limitations stem from the data available to the UDRC. The unavailable data exist at three significant yet distinct levels. Only public postsecondary institutions in Utah provide data to the UDRC, the schools that are part of USHE. The UDRC did not have professional licensure data when this study was written. Third, the wage records only have data from firms that pay into unemployment insurance, and these do not include nonprofit religious organizations. Each of these missing data leads to different shortcomings in this research. Finally, recent changes to the institutional settings that shape education pathways limited this study.

First, missing education data means the initial award level may not be correct. At least nine CNA programs in Utah train CNAs but are not part of USHE (Utah Nursing Assistant Registry, n.d.). It is possible that an LPN or RN initially trained as a CNA with one of these unaccounted for programs. There are at least four private ADN programs, which in 2014 accounted for 37% of all ADN students (Utah Medical Education Council, 2015). If a CNA completed one of these programs, that would not appear in the UDRC data, nor would one of these programs appear as the initial degree in the UDRC data. At least one bachelor's program focuses on nurses who have a license but not a BS. In 2014, this program trained 35% of the post-license BSN award earners (Utah Medical Education Council, 2015). At least three non-USHE schools educate pre-license BSN nurses. In 2014, these programs accounted for 50% of pre-license nurses (Utah Medical Education Council, 2015). In 2014, there was one non-USHE pre-license master's program, 100% of the students and 6% of total nursing master's students, two clinical master's programs, 100% of the students and 13% of all master's, and one non-clinical master's program, 63% of non-clinical master's and 55% of total master's students (Utah Medical Education Council, 2015). Total counts due to the unavailable education data are a lower bound; this is true for the initial CNAs, ADNs and BSNs. Additionally, the number of CNAs, LPNs, ADNs, and BSNs that returned to additional education can reasonably be considered as a lower-bound estimate.

Second, the absence of license data made it impossible to determine if a nursing award earner passed the required exam and found employment as a nurse. This report counted that any nursing award earner employed in the nursing industry was a nurse, but there was no concrete evidence that this was the case. Previous studies have not quantified the percentage of graduates who pass the licensure exam; therefore, it is impossible to provide a reasonable estimate for this work.

Next, the wage records only contain information for certain firms. First, it only has information for those employed by Utah firms that pay into the Unemployment Insurance system. Therefore, there is no way to distinguish someone who finds employment outside of Utah from those who stop working but stay in Utah. Previous studies were also unable to estimate the out-of-state migration for nurses as these studies also used Utah specific data. Also, wage records may have different industry codes for similar nursing jobs depending on the industry of the employer, not the day-to-day

experience of the specific job. For example, hospital systems connected to a university like University of Utah Hospital are categorized as Education Services whereas an independent hospital would be listed as Hospital Services. This also means that a nursing graduate could be working at a firm in one of these industries in a non-nursing position and be miscounted as a nurse. This is a limitation of the data, because wage records do not include more granular information about a graduate's title or job description, only the industry code of the firm.

Finally, the LPN programs in Utah are moving towards requiring a CNA certificate. Thus, LPN will no longer be an initial nursing award. This change could alter the demographic composition of the CNA student body. The results presented for both CNAs and LPNs may not be relevant for those who wish to earn either award in the future.

5 | Conclusion

There are distinct differences in the postgraduation pathways based on the initial award level. These differences appear to correlate with robust institutional guidelines and support in the context of additional education. In the case of labor market outcomes, these differences are related to award level. BSNs had the best labor market outcomes, while CNAs had the worst. LPNs and ADNs had similarly good educational outcomes, while CNAs had poor educational outcomes after their initial degree.

BSNs had the best labor market outcomes by the fifth year after graduation; the median wage for a BSN nurse was $56,545. For an ADN who did not return to school, this decreased to $50,520; for an LPN this decreased to $43,019, and finally for a CNA who did not return for additional education, this was $20,370. BSNs had the quickest time to employment in the nursing industry, with the median number of quarters half that of an ADN or LPN, and one-quarter than of a CNA. BSNs exited the nursing profession at the lowest rate, while CNAs exited the nursing profession at the highest rate.

Fifty-two percent of LPNs with a well-defined path to a BSN completed the nursing education ladder. ADNs, who are also RNs upon licensure, completed the education ladder at 50%, while CNAs who do not have a defined education ladder and are not licensed nurses completed the education ladder at six percent. LPNs were the quickest to return to school, with some returning the quarter of completion of their LPN certificate. The median time to return to school was twice as long for CNAs as for LPNs and ADNs.

BSN nurses have the largest scope of practice, and their higher pay and shorter time to employment reflect this. The well-defined bridge programs allow LPNs and ADNs to quickly and efficiently transition to the full scope of nursing practice as a BSN—the differences between CNA and LPN educational outcomes evidence this.

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Appendix A

Table 1A: Distribution of First Nursing Industry by Award Level

	Education Services	Ambulatory Health Care	Hospitals	Nursing & Residential Care	Social Assistance	Human Resource Programs
CNA	10%	15%	16%	50%	7%	1%
LPN	6%	17%	46%	27%	2%	2%
ADN	12%	13%	48%	24%	2%	1%
BSN	24%	9%	53%	12%	1%	1%