Saskatchewan Registered Nursing Labour Market Analysis

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Saskatchewan Ministry of Health

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Registered Nursing Labour Market Analysis

INTRODUCTION

This is the third registered nursing labour market report since 2017. The goal of the original review was to conduct a labour market analysis of Registered Nurse (RN) occupations in Saskatchewan. This analysis may be used to assess the adequacy of the current (690) RN training seat capacity and whether or not it meets Saskatchewan's urban, rural and remote needs. Registered Psychiatric Nurse (RPN), Nurse Practitioner (NP), and Licensed Practical Nurse (LPN) occupations were excluded in most of the analysis. However, data on RN/NP or RN/RPN were included in cases where information exclusively on RNs was not available. This study was intended to develop a common set of understandings about the current situation within which further discussions and policy decisions can be made.

Section 1.1 shows trends of the basic counts of Saskatchewan Registered Nurses over time.

Section 1.2 looks at paid FTE trends for RNs/RPNs over time, as well as the distributions of paid FTEs and counts by the former regional health authorities (RHAs) and the Saskatchewan Cancer Agency (SCA).

Section 2.1 shows the number of registered nursing program graduates. New graduates do not represent all of the new supply, but they represent one of the major sources.

The education levels of RNs, their ages, and geographic areas where they work are addressed in sections 2.2, 2.3 and 2.5, respectively.

Section 2.4 looks at the proportion of RNs who remain in the province for five years.

One of the major factors affecting supply of nursing professionals is the number of retirements. These retirements are both in the traditional sense and in terms of pre-retirement attrition from the professions into non-nursing employment or out of the labour force entirely on a temporary or permanent basis. Section 2.6 looks at the percentage of RNs who were 55-59 and 60+ years of age.

Inter-provincial migration is another major factor in the supply of nursing professionals in Saskatchewan and these trends are examined in Section 2.7.

In the sections 3.1 to 3.3, employment is used as the measure of demand. This assumes that there are more workers available to fill positions than there are positions so employers could hire as many people as they needed. Employment might become an unreliable measure for a tight labour market where the demand exceeds the supply.

Sections 3.1 and 3.2 look at who employs RNs and their positions or area of responsibilities of work. These are important pieces of information for the demand analysis because the delivery models and priorities that government chooses indirectly affects the demand for nurses.

Section 3.3 looks at the average annual employment rate and proportions of RNs employment as full-time, part-time or casual. The variation in the number of full-time employments could result in the relatively large variation in part-time or casual employment.

Section 3.4 provides details about wage rates and earnings as indicators of demand – occupations in short supply normally attract higher wage rates. It also influences the economic pressures for interprovincial migration.

Section 4.1 shows the assumptions on which the health human resource (HHR) forecast model is based.

Sections 4.2 and 4.3 focus on components of supply and demand.

Finally, Section 4.4 documents the limitations to the forecast model utilized in the report.

TRENDS OVER TIME IN COUNTS AND FULL TIME EQUIVALENTS

1.1 Basic Counts

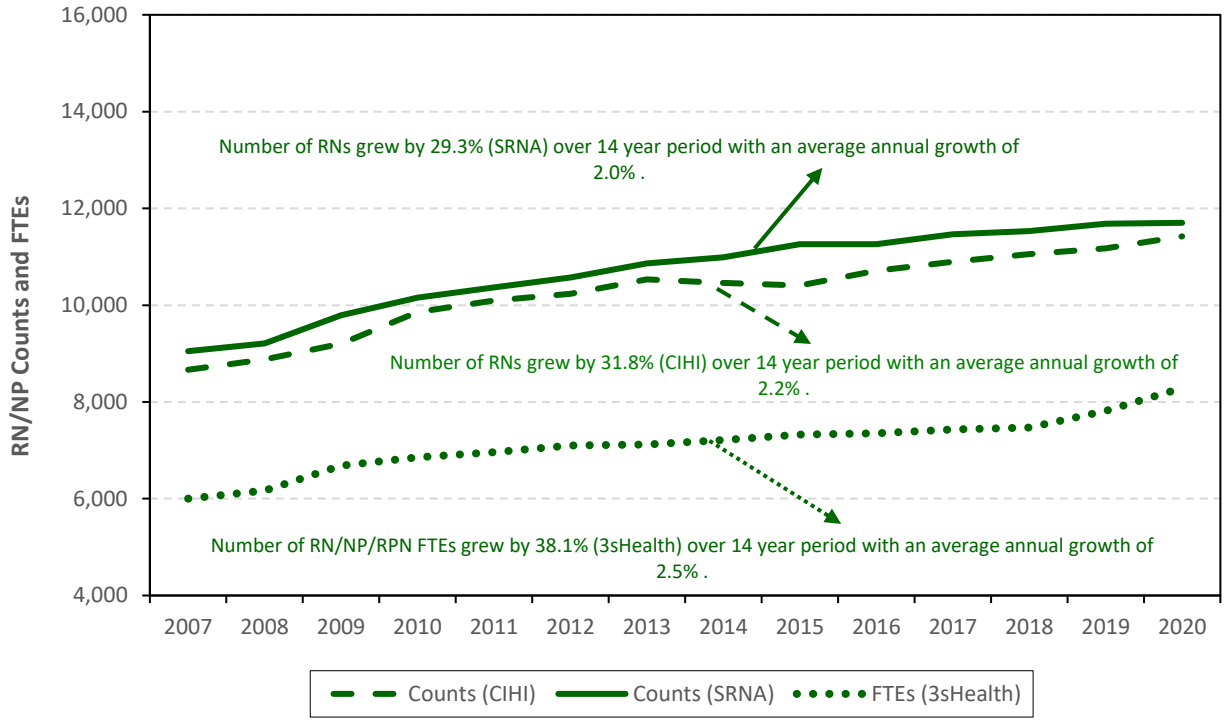
The most comprehensive source of historical data about absolute number of Registered Nurses (RNs) working in the province are the administrative databases for Saskatchewan Registered Nurses Association (SRNA). This is reliable information on absolute numbers because membership is a condition of employment.
The statistics reported by the Canadian Institute for Health Information (CIHI) may differ from those reported by the regulatory authorities, even though the source of the data (annual registration forms) is the same. Differences are due to the population of reference[1], the collection period, exclusions from CIHI data and CIHI's editing and processing methodologies.

According to SRNA, the number of individual RNs practicing in Saskatchewan grew by 29.3% from 9,049 in 2007 to 11,702 in 2020 with an average annual growth of 2.0%.

According to the CIHI data, in 2020 the number of RNs grew by 31.8% over the 2007-2020 period with an average annual growth of 2.2% from 8,665 in 2007 to 11,422 in 2020 (Figure 1.1).

[1] CIHI collects data prior to the end of the 12-month registration period in each jurisdiction. Therefore, the population of reference for the nursing data is all regulated nurses who submit an active practicing registration in a Canadian province or territory in the first 6 months of the registration year. The 12-month registration period varies among the provinces and territories, as each jurisdiction is responsible for setting the start and end dates of its own registration period.

Figure 1.1: Saskatchewan Registered Nursing Counts and FTEs, 2007 to 2020



Sources: *Regulated Nurses, 2017 and Nursing in Canada, 2020*: Canadian Institute for Health Information (CIHI), 2018 and 2021.
Saskatchewan Registered Nurses Association (SRNA) *Annual Reports*, 2013 and 2020.
Paid FTE data obtained from 3sHealth Payroll is based on the time frame April 1 - March 31 of each fiscal year.

1.2 Registered Nursing Paid FTEs

Full-time equivalent (FTE) numbers are a better indicator of staffing levels than employee counts. In the use of employee counts, individual people are often counted more than one time as they may work in more than one classification and in more than one location. The FTE values only include the actual time worked in each location and classification, so do not contain the same issues.
Based on Health Shared Services Saskatchewan (3sHealth) payroll data, the number of FTEs from former RHAs and SCA, which comprise RNs/NPs and RPNs (out-of-scope nurse managers excluded) grew by 38.1% from 6,002 in 2007 to 8,287 in 2020 with an average annual growth of 2.5% (Figure 1.1).

The growth of FTEs was not distributed evenly across the former health regions. As shown in the Table 1.1, while the former Regina Qu'Appelle, Saskatoon, P.A. Parkland, Prairie North and Mamawetan Churchill River health regions saw over a 35% increase in FTEs, the former Heartland and Kelsey Trail health regions saw less than a 10% increase in FTEs between 2007 and 2020.

Similar to FTEs, the total headcount of RNs/NPs/RPNs grew by 31.1% in the same span of the fourteen years. However, the headcount of RNs/NPs/RPNs employees declined in the former Keewatin Yatthé health regions (Table 1.2).

Table 1.1: RNs/RPNs/NPs FTEs by Former RHAs and SCA

Former RHAs and SCA	Fiscal 2007~	Fiscal 2020	% change 2007-08 to 2020-21
Sun Country	205.3	225.8	10.0%
Five Hills	262.6	301.4	14.8%
Regina Qu'Appelle	170.8	179.5	5.1%
Sunrise	35.8	42.1	17.6%
Saskatoon	184.5	201.6	9.3%
Heartland	30.2	45.2	49.6%
Prince Albert Parkland	386.9	532.1	37.5%
Prairie North	316.0	506.8	60.4%
Cypress	1690.5	2296.6	35.9%
Kelsey Trail	2042.7	3124.2	52.9%
Mamawetan Churchill River	250.7	300.5	19.9%
Keewatin Yatthé	364.3	410.3	12.6%
Saskatchewan Cancer Agency	61.2	121.2	98.0%
Total	**6,001.5**	**8,287.3**	**38.1%**

Source: Data obtained in June, 2021 from 3sHealth Payroll by fiscal year.
Notes: Data includes former RHA/SCA and affiliates that are on 3sHealth payroll system and includes in scope only.
~ Nurses working in out-of-scope positions are not included as not all out-of-scope nurse managers are nurses. Where an employee works in more than one classification, they are only counted once in the data, and not in each classification. Paid FTEs are based on job classifications.

Table 1.2: RNs/RPNs/NPs Head Counts by Former RHAs and SCA

Former RHAs and SCA	Fiscal 2007	Fiscal 2020	% change 2007-08 to 2020-21
Sun Country	279	302	8.2%
Five Hills	375	440	17.3%
Regina Qu'Appelle	258	299	15.9%
Sunrise	63	55	(12.7)%
Saskatoon	235	285	21.3%
Heartland	63	69	9.5%
Prince Albert Parkland	535	706	32.0%
Prairie North	454	662	45.8%
Cypress	2238	2926	30.7%
Kelsey Trail	2975	4191	40.9%
Mamawetan Churchill River	435	446	2.5%
Keewatin Yatthé	442	517	17.0%
Saskatchewan Cancer Agency	92	176	91.3%
Total	**8,444**	**11,074**	**31.1%**

Source: Paid FTE data obtained from Summary of RN LPN CCA NP and RPN data by RHA 2007 to 2020: 3sHealth Payroll based on the time frame April 1 - March 31 of each fiscal year.
Notes: Data includes former RHA/SCA and affiliates that are on 3sHealth payroll system and includes in scope only. Nurses working in out-of-scope positions are not included as not all out-of-scope nurse managers are nurses. Where an employee works in more than one classification, they are only counted once in the data, and not in each classification. The use of Employee Count data is often subjective, and data varies based on how the question is asked.

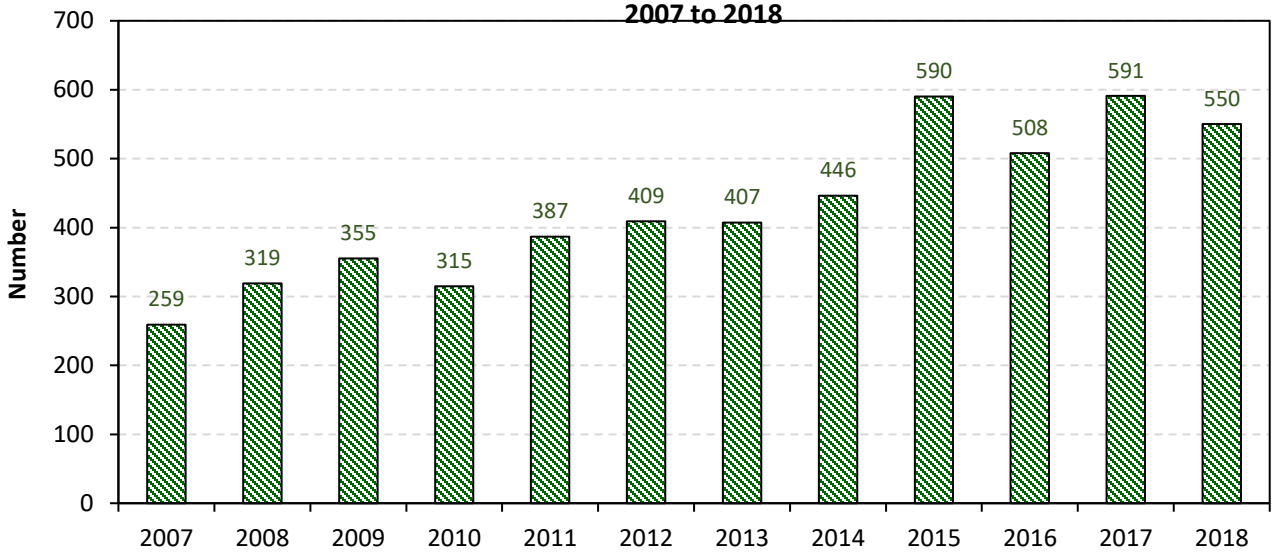
SUPPLY MEASURES

In considering supply of RNs, measures that are considered include graduation trends, education and location of training, age, retention or retirements, geographic distribution, migration and projected supply.

2.1 Graduation Trends

Figure 2.1 shows the number of registered nursing program graduates in the 2007-2018 period according to CIHI. Between 2007 and 2018, the number of entry-to-practice[2] graduates from registered nursing programs grew at an average annual rate of 8.1%, reaching 550 in 2018 from 259 in 2007. The number of graduates decreased from 591 in 2017 to 550 in 2018. The anomaly in the decrease between 2015 and 2016 was due to the implementation of new programs in preparation for the disillusion of the old U of Saskatchewan/SIAST collaboration and the establishment of the new U of Regina/SIAST collaborative partnership. This resulted in a year (2015) when there were far more students graduating than in the past as they completed the phased out programs while the new programs graduated their first class.

Figure 2.1:Registered Registered nursing program graduates (entry to practice), 2007 to 2018



Source: *Regulated Nurses, 2016 and Nursing in Canada, 2020*: Canadian Institute for Health Information (CIHI), 2017 and 2021.

[2] Entry-to-practice programs include pre-licensure nursing education entitling successful graduates to apply for initial licensure/registration as a nurse.

2.2 RN Education, Training Location and Years since Graduation

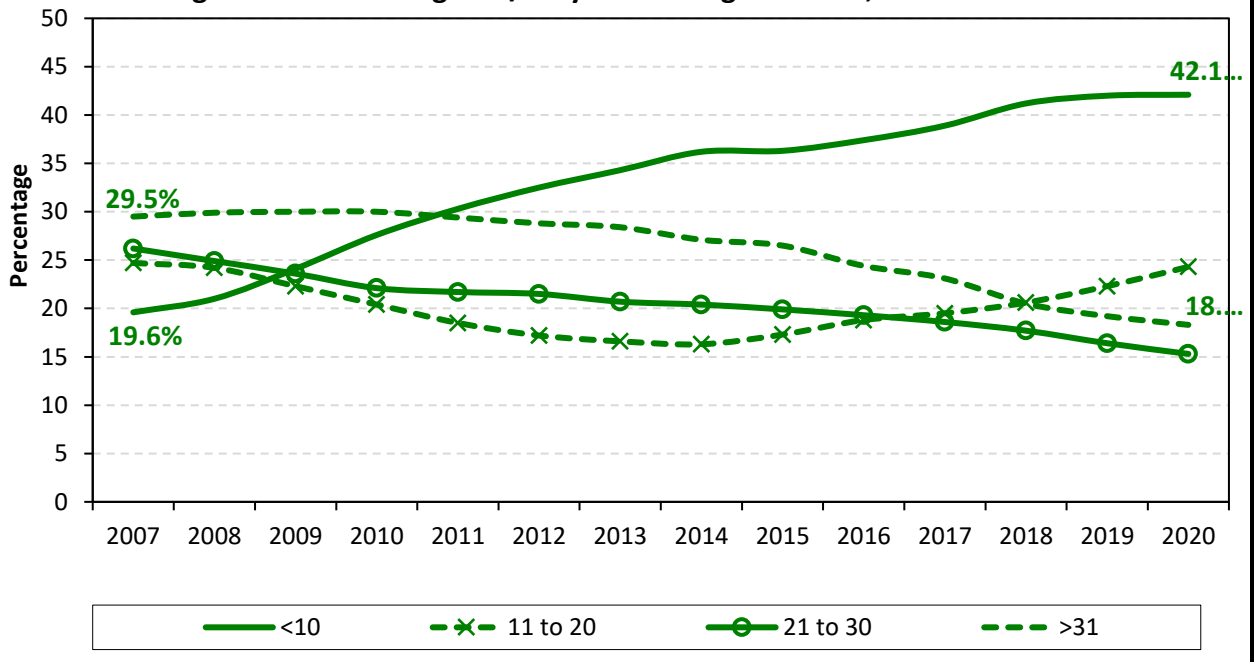
In 2007, about one in three (34.8%) of RNs reported having a university degree. By 2020, the proportion of RNs with a university degree doubled (70.1%).

Of all nurses educated in Saskatchewan and registered to practice in Canada in 2020, 93.0% graduated and registered in the province. An additional 3.5% graduated and registered in Alberta, 1.5% in British Columbia, 0.9% in Ontario and 1.1% in other jurisdictions.

The number of years since an RN graduated is an important indicator in nursing labour market analysis. Characteristically, recent graduates are younger, have attained higher educational levels with less work experience. Those who completed their nursing education many years ago have more work experience and are more likely to be diploma than degree holders.

Figure 2.2 shows the percentage of RN years since graduation between 2007 and 2020. Overall, those who graduated less than ten years ago outnumbered those who graduated more than ten years ago since 2011. The percentage of RNs who graduated less than ten years ago has increased over the years from 20% in 2007 to 42% in 2020.

Figure 2.2: Percentage RN/NP years since graduation, 2007 to 2020



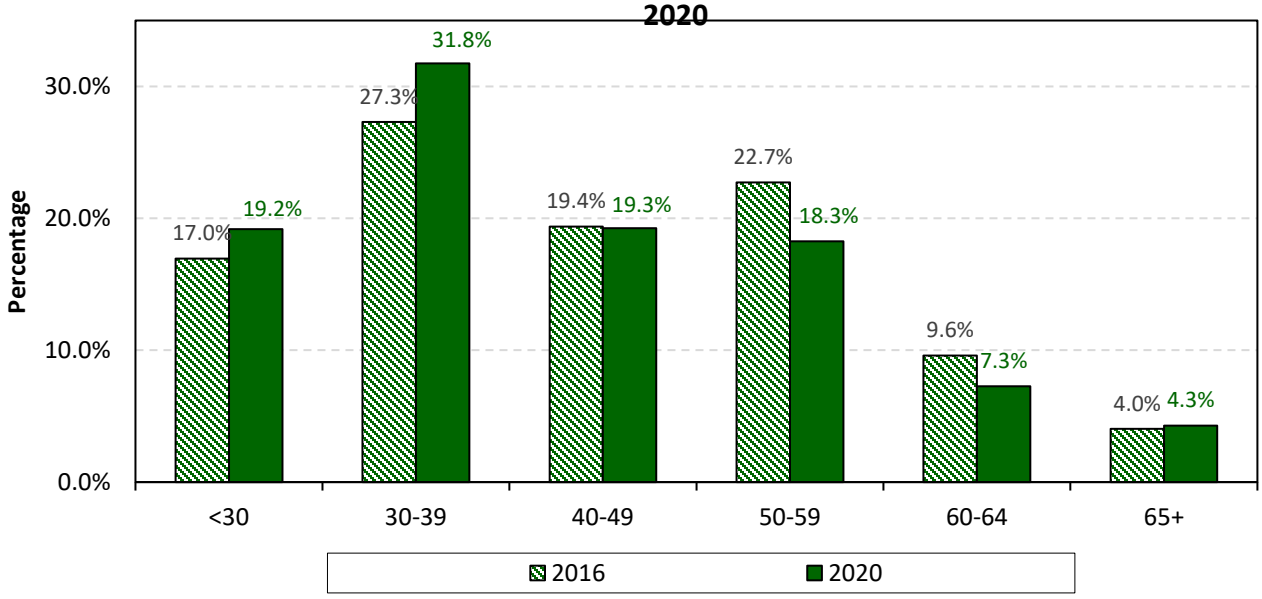
Sources: *Regulated Nurses, 2017* and *Nursing in Canada, 2020*: Canadian Institute for Health Information (CIHI), 2018 and 2021.

2.3 Age

Changes in the age distribution over time are important in understanding how many RNs enter and exit the profession. Figure 2.3 shows the percentage number of RNs by age groups in 2016 and 2020. Over the five-year period, there were increases in the number of those under 40 years of age. On the contrary, there were percentage decreases in the RNs aged 40 to 64 years of age.

In 2020, 50.0% of the registered nurses were younger than 40 years old compared to 44% in 2016. This age group likely represents mainly recent entrants to the profession. There was a 6% decrease in RNs older than 50 years of age from 36.3% in 2016 to 29.9% in 2020.

Figure 2.3: Changes in Age Distribution, Saskatchewan RN Supply, 2016 and 2020



Source: *Nursing in Canada, 2020*: Canadian Institute for Health Information (CIHI), 2021.

2.4 Retention Rates by Age Group

The data in Figure 2.4 is used in determining retention rates. Retention rate is the proportion of RNs who remain in the province for ten years. Factors that may affect retention rates are a combination of migrations (interprovincial and international) and temporary and permanent exits from the profession.

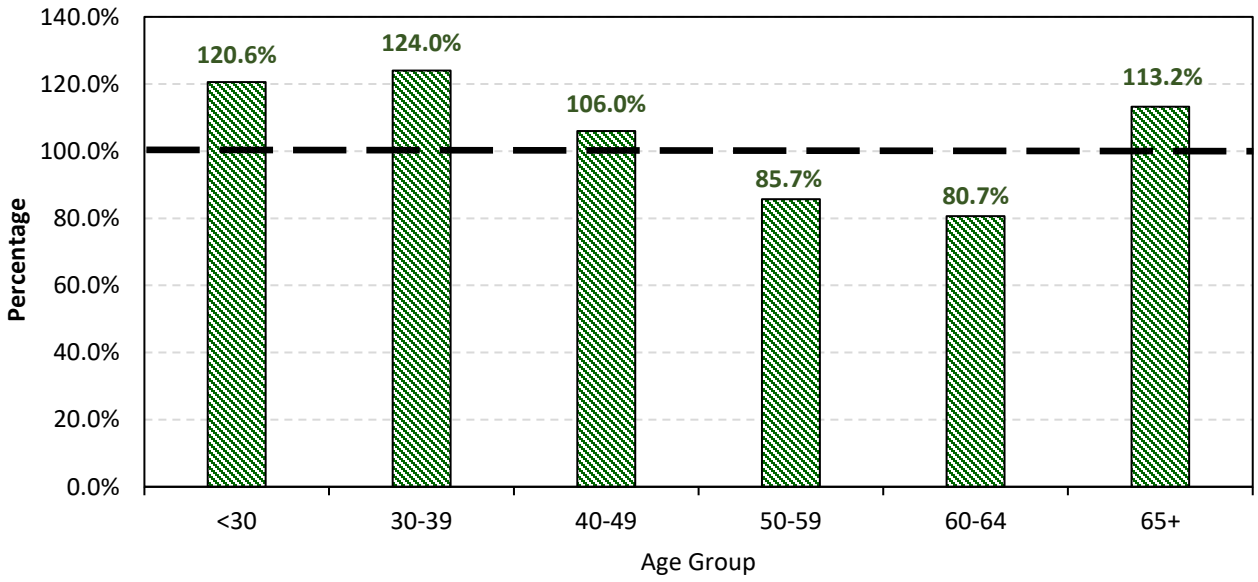
In 2016, there were 2,435 RNs in the 50 to 59 age group and 1,461 RNs in the 60 and older age group. The net flow over the ten years was a decrease of 974 persons. In 2020, there were 2,086 RNs in the 50 to 59 age group. Therefore, the ten-year retention rate in the 50 to 59 age group is 2,086 ÷ 2,435 or 85.7%. This implies a ten-year net retention rate of 86%.

The province has been able to attract a large number of young RNs as shown by the increase among those under 40 years of age (Figure 2.3). Generally, there has been success in retaining them as demonstrated by the retention rates, which are over 100%. There should be caution in interpreting the retention rate for those younger than 40 years old. Retention rates may be overstated given that there are new graduates, especially those that enter the profession embedded in the data.

It is acceptable for retention rates to exceed 100%, particularly in the younger age groups. At these age groups registered nurses are likely to re-enter the profession after a period of absence for child-bearing, pursuit of further educational career or because net in-migration adds more registered nurses to the population than the number leaving the profession.

Lower retention rates (below 100%) in the 50 to 64 age groups may likely be because of interprovincial migrations, retirements and moves to jobs outside of nursing.

Figure 2.4: Calculated Retention Rates, RNs/NPs, 2016 and 2020



Source: *Nursing in Canada, 2020*: Canadian Institute for Health Information (CIHI), 2021.

2.5 Geographic distribution- urban, rural/remote

According to CIHI, the RN workforce employed in urban[3] areas increased between 2007 and 2020 (Figure 2.5). In 2007, there were 6,727 registered nurses employed in urban areas and in 2020, the number rose to 9,010.

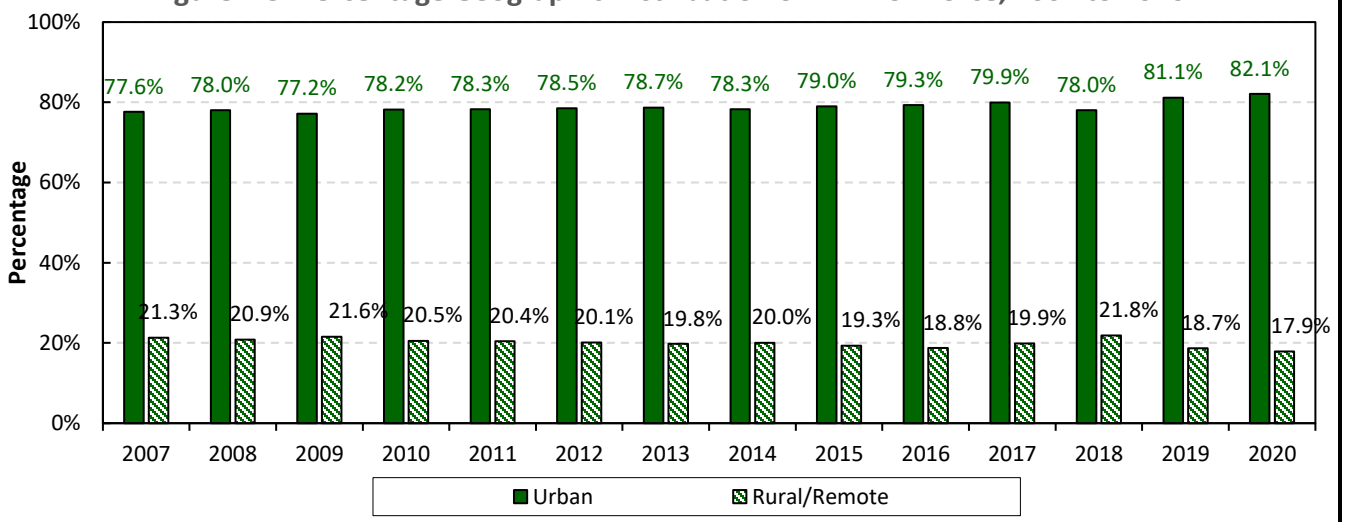
The percentage of Saskatchewan RNs employed in rural or remote areas declined from 21.3% in 2007 to 17.9% in 2020.

According to the 2017 Health Careers in Saskatchewan (HCIS) survey on *Provider Priorities and Needs Assessment 2017-18*, rural communities have the highest need for RNs. Key recruitment challenges in 2017 and anticipated in the next 3 years include competing demands with urban areas, short-term leaves, such as maternity leave and the temporary, casual and less than full time positions which, are often difficult to fill.

Key retention challenges in 2017 and anticipated in the next 3 years include high percentage of workforce nearing retirement, preference of work type (e.g. casual, temporary, shift work) and unfavourable working conditions (e.g. safety and security, extended hours).

Other workforce recruitment and retention challenges for rural and remote communities include higher demand for health services due to aging, younger and growing population in First Nations communities, and difficulties in replacing retiring workers.

Figure 2.5: Percentage Geographic Distribution of RN Workforce, 2007 to 2020



Note: Percentages may not total to 100% due to unstated geographic location.

Sources: *Regulated Nurses, 2017* and *Nursing in Canada, 2020*: Canadian Institute for Health Information (CIHI), 2018 and

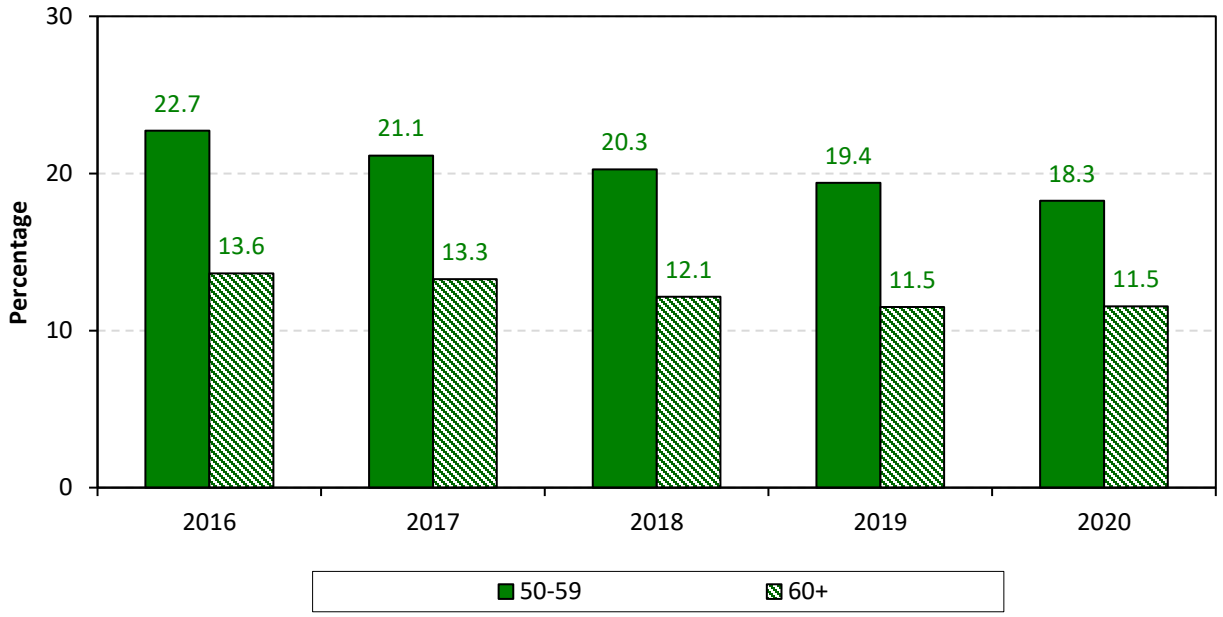
[3] Urban areas are defined (in part) by Statistics Canada as communities with populations greater than 10,000 people; rural/remote is equated with communities outside the urban boundaries and is referred to as rural and small town (RST) by Statistics Canada.

2.6 Retirement

Typically, after reaching the age of 55, it is anticipated that RNs would consider retiring within the following five to ten years. An emerging challenge is the increase in registered nurses nearing retirement eligibility. Figure 2.6 shows the percentage supply of RNs aged 50-59 and 60 years and older in the 2016-2020 period. Since 2016, the percentage of RNs 50 years and older have been declining.

According to the CIHI 2020 *Nursing in Canada* report, in 2016, 36.3% of RNs were 50 years and older compared to 29.8% in 2020. Of the total number of RNs in 2016 (10,713), 2,434 were between the ages of 50 and 59 and another 1,461 were age 60 and older. By 2020, the number of RNs between the ages of 50 and 59 declined to 2,086 and for those aged 60 and older the number declined to 1,316.

Figure 2.6: Percentage RN Supply 50-59 and 60+ years of age, 2016 to 2020



Source: *Nursing in Canada, 2020*: Canadian Institute for Health Information (CIHI), 2021.

2.7 Migration – Inflow and Outflow

Changes in the RN/NP supply reflect the number of registrants entering (inflows) and leaving (outflows) the profession (*Nursing in Canada, 2020*: CIHI, 2021).

Inflow refers to the number of registrants entering the nursing profession. It happens when a registered nurse registers to practice in a jurisdiction in which he/she did not register the previous year.

Inflow = the number of new registrants not registered to practice in the jurisdiction
the total number of registrants in the same year

Inflow can include new graduates, registered nurses who migrate in from other Canadian jurisdictions or foreign countries and those who return to the workforce after extended leave such as family responsibilities or further education.

Outflow refers to the number of registrants leaving the profession. It occurs when a registered nurse fails to renew his/her registration in a jurisdiction the following year.

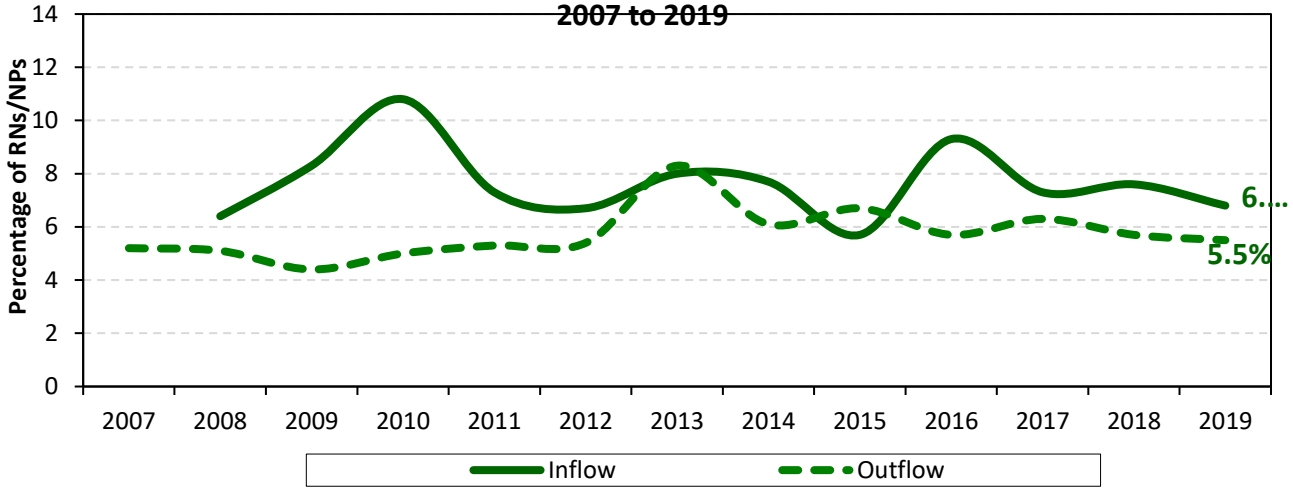
Outflow = the number of registrants not renewing their license to practice in the same jurisdiction
the total number of registrants in the previous year

Outflow is influenced by factors such as social, political, economic, environmental and familial issues. Registered nurses age 60 and older; failing to renew their registration may be a signal that they have retired. Nurses younger than 39 years may fail to renew their registration for better or different job opportunity outside their jurisdiction, taking parental leave and fulfilling family responsibilities, returning to school for additional education or leaving the profession.

Many factors may influence an increase in both the inflow and outflow of RNs. One important factor is the number of new RN graduates (Figure 2.1) who obtain licence to practice nursing in the province. Trends among new graduates may be influenced by various factors, including the number of seats and graduates from entry-to-practice nursing programs, regulatory and licensure requirements.

According to the CIHI 2020 *Nursing in Canada* report, in 2020, 856 registered nurses registered to practice in the province for the first time, representing an inflow of 6.8%. After the 2019 registration year, 610 registered nurses failed to renew their registration with the province, representing an outflow of 5.5% (Figure 2.7).

Figure 2.7: Inflow and outflow of registered nurse supply, Saskatchewan, 2007 to 2019



Source: *Nursing in Canada, 2020*: Canadian Institute for Health Information (CIHI), 2021.

DEMAND MEASURES

In the sections 3.1 to 3.3, employment is used as the measure of demand. This assumes that there are more workers available to fill positions than there are positions so employers could hire as many people as they needed. Employment might become an unreliable measure for a tight labour market where the demand exceeds the supply.

Sections 3.1 and 3.2 look at who employs RNs and the positions or area of responsibilities where RNs work. These are important pieces of information for the analysis of demand because the delivery models and priorities that government chooses indirectly affects the demand for nurses.

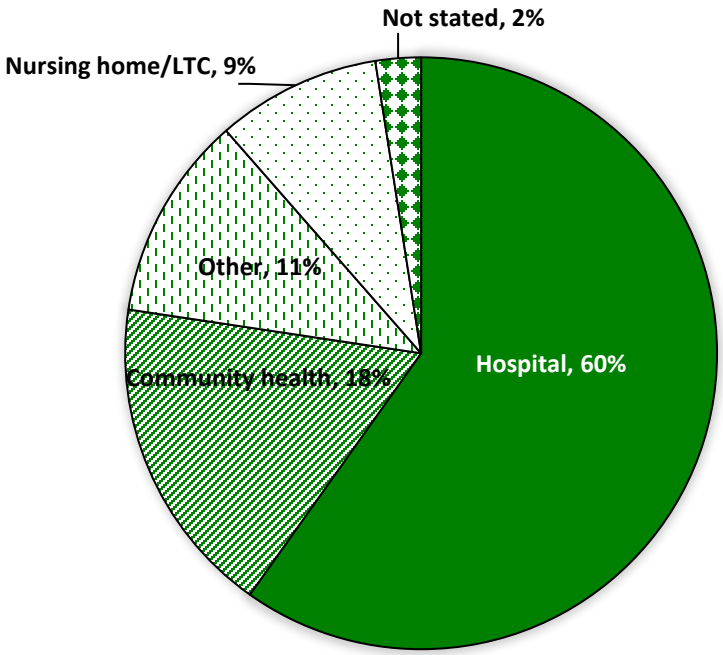
Section 3.3 looks at the proportions of RNs employed as full-time, part-time or casual. The variation in the number of full-time employments could result in the relatively large variation in part-time or casual employment.

Section 3.4 provides detail about wage rates and earnings, which is an indicator of demand – occupations in short supply normally, attract higher wage rates. It also influences the economic pressures for interprovincial migration.

3.1 Place of Employment

While RNs are employed in a variety of practice settings, in 2020, hospitals remain the top (60%) location of employment (Figure 3.1). In addition, the overall proportion of RNs employed in each setting remained relatively unchanged from 2011 to 2020. In the 10-year period, 58-60% of RNs were employed in a hospital setting, 17-18% in a community health setting, 9-11% in a nursing home/long-term care setting, and 11-12% in other settings such as occupational health offices, private nursing agencies, educational institutions, associations, government, as well as self-employed.

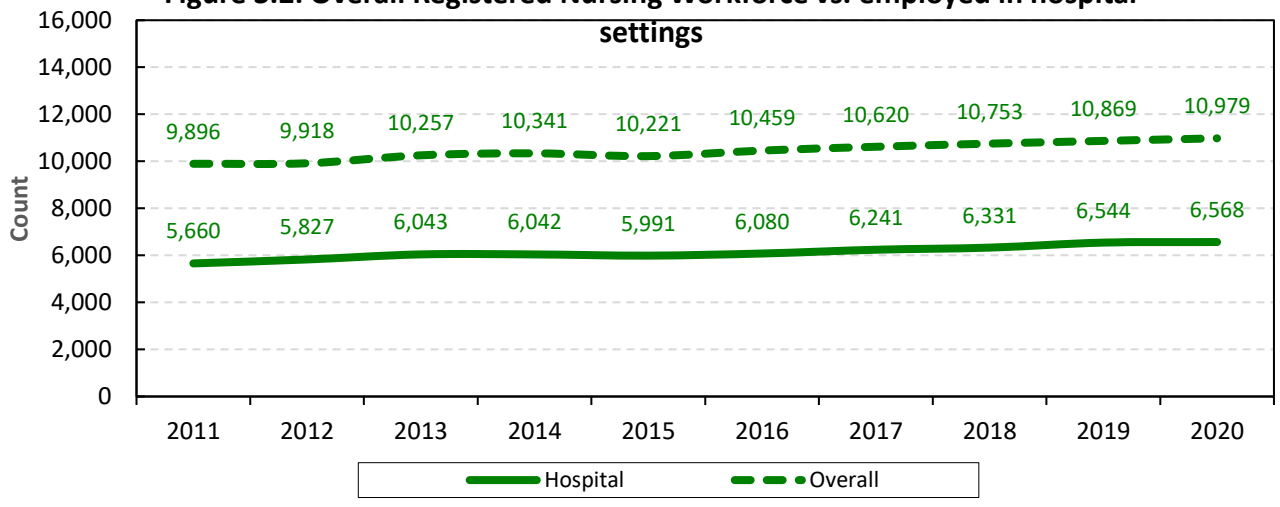
Figure 3.1 Place of employment for Registered Nursing Workforce, 2020



Source: *Nursing in Canada, 2020*: Canadian Institute for Health Information (CIHI), 2021.

As shown in the Figure 3.2, the overall RN workforce grew over the past 10 years. The number of RNs employed in hospital settings increased from 2011 to 2013, decreased in the next two years and then steadily increasing up to 2020.

Figure 3.2: Overall Registered Nursing Workforce vs. employed in hospital settings

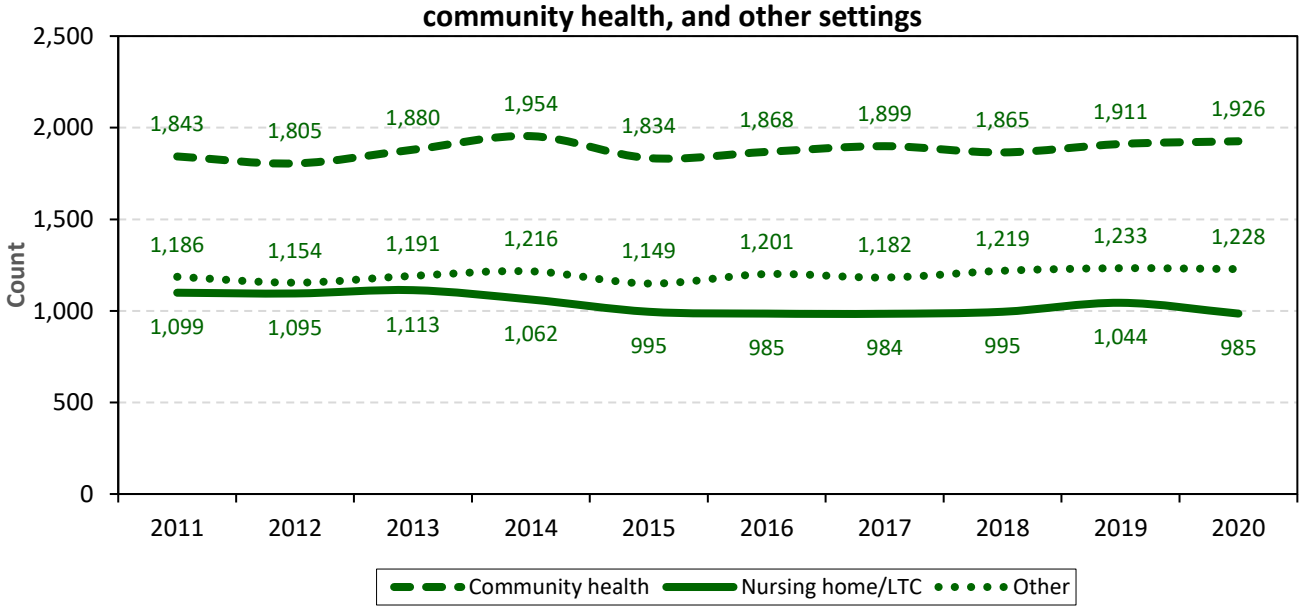


Source: *Nursing in Canada, 2020*: Canadian Institute for Health Information (CIHI), 2021.

According to the Saskatchewan Covered Population report, in 2020, 16% of the Saskatchewan population was age 65 and older. As people live longer, the needs for long-term care increase. Furthermore, the trend in Figure 3.3 shows that the number of RN workforce employed in nursing home/long-term care settings did not change significantly between 2015 and 2020 except for an increase in 2019.

The same chart also shows the increased gap between RNs employed in nursing home/long-term care settings and in other settings (e.g. occupational health offices, private nursing agencies, educational institutions, associations, government and self-employed). RNs tend to find employment in settings other than nursing home/long-term care settings, or other settings provided more employment opportunities than home/long-term care settings.

Figure 3.3: Registered Nursing Workforce employed in nursing home/LTC, community health, and other settings

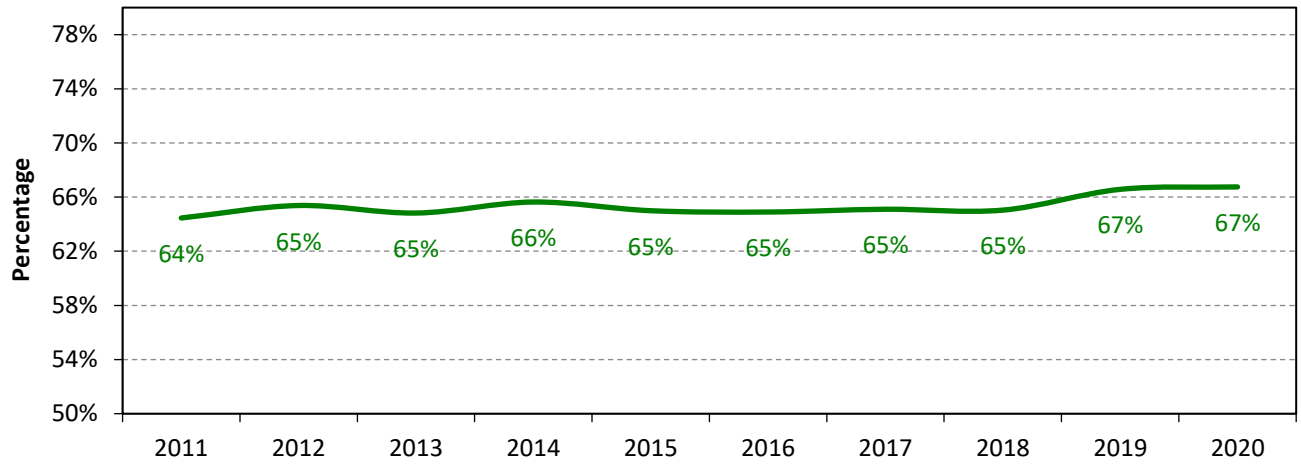


Source: *Nursing in Canada, 2020*: Canadian Institute for Health Information (CIHI), 2021

3.2 Position and Area of Responsibility

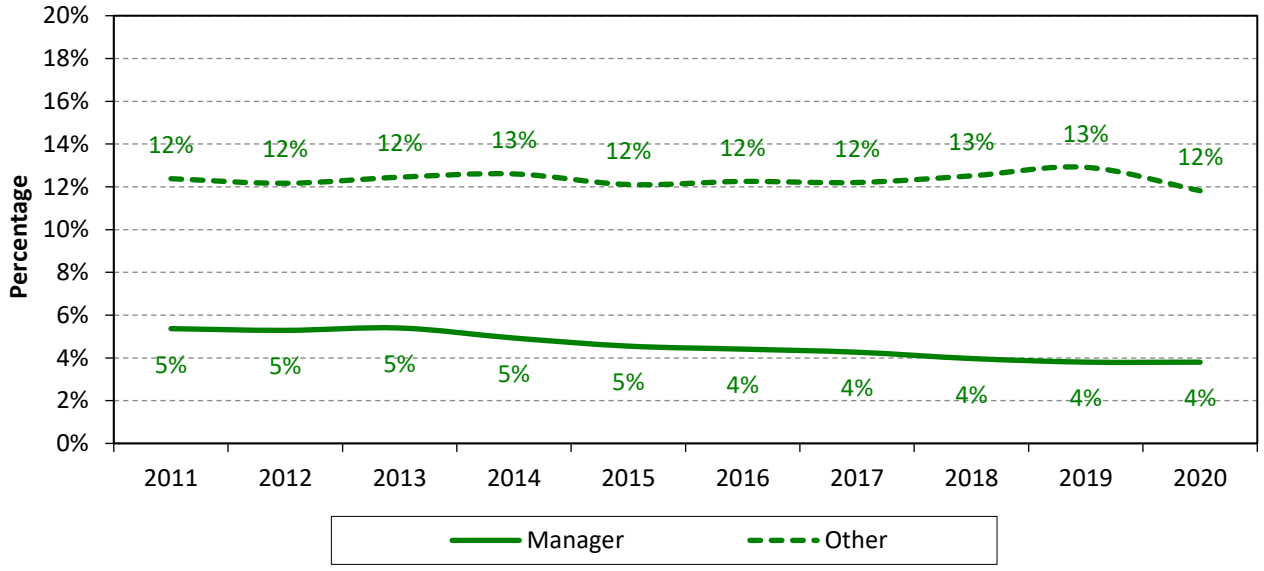
The number of RNs/NPs who worked as staff nurses increased by 1,002 or 13% from 2011 to 2020; however, the proportion decreased slightly as shown in Figure 3.4. Figure 3.5 shows a declining proportion of RNs/NPs working in management positions, and the proportion of RNs/NPs reporting they were in other positions (e.g. educators, researchers, consultants, clinical specialists, etc.) increased between 2013 and 2014 and then remained stable after 2014 before increasing in 2018.

Figure 3.4: Proportion of RNs/NPs work as staff nurse



Source: *Nursing in Canada, 2020*: Canadian Institute for Health Information (CIHI), 2021.

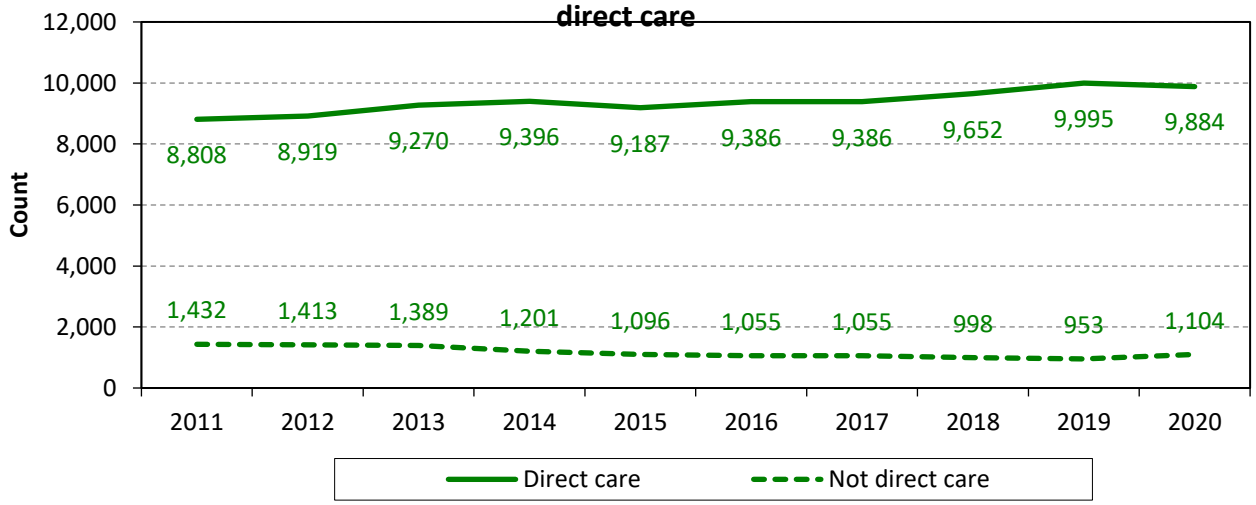
Figure 3.5: Proportion of RNs/NPs work as Manager vs Other



Source: *Nursing in Canada, 2020*: Canadian Institute for Health Information (CIHI), 2021.

The area of responsibility also provides a useful addition to the information about the positions that RNs hold. While the number of RNs working in the area of direct care[4] grew significantly by 12% from 2011 to 2020, the number of those working in the area of non-direct care declined by 23%.

Figure 3.6: Registered Nursing workforce in the area of direct care vs non-direct care



Source: *Nursing in Canada, 2020*: Canadian Institute for Health Information (CIHI), 2021

3.3 Employment Status

According to CIHI's 2020 *Nursing in Canada* report, Saskatchewan's registered nursing workforce[5] grew at an average annual rate of 2.0% from 8,823 individual RNs in 2008 to 10,623 RNs in 2017.

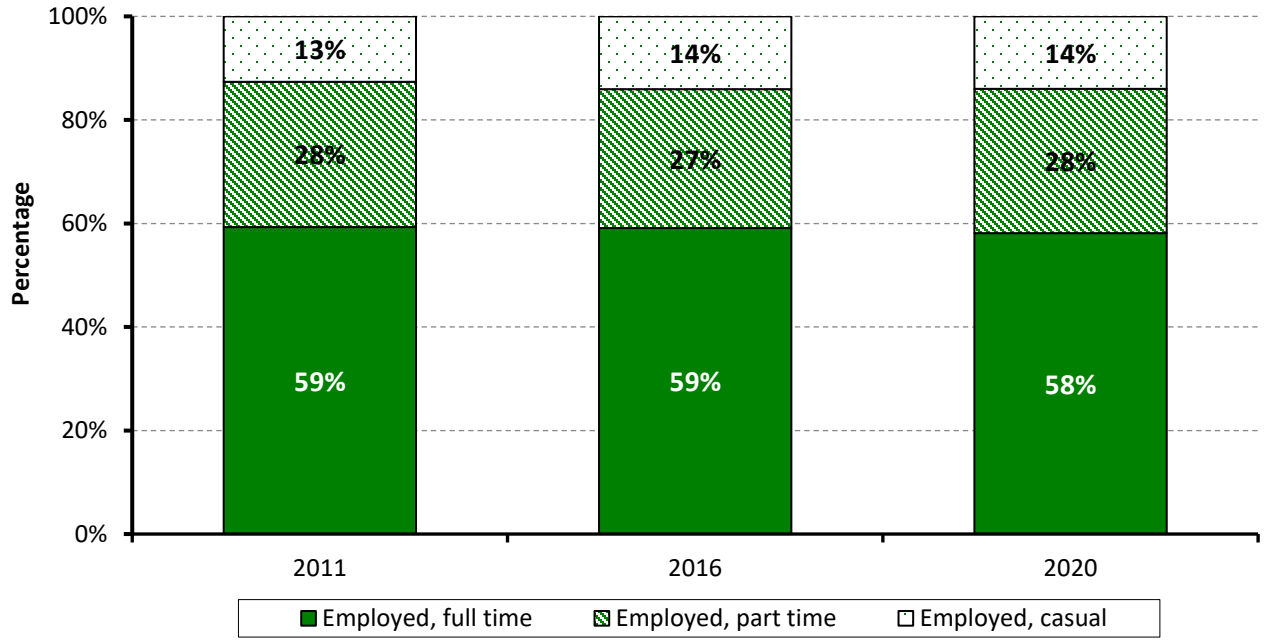
In 2020, almost 443 (supply of 11,422 and workforce of 10,979) registered nurses who had an active license to practice in the province were not included in the registered nursing workforce because they were employed in a field other than nursing, they were unemployed, or their employment status was unknown[6].

Hours of work can be considered as either a labour supply or labour demand issue. Demand for RNs typically manifests as a requirement for a certain number of hours of work. Please note that CIHI's definition of employment status is the RN's official status with her/his primary employer, not a reflection of the number of hours worked or number of positions held.

[4] The area of responsibility is based on the major focus of activities. The positions of RNs who work in the area of direct care include staff nurses, managers or assistant managers, clinical specialists, or nurse midwives.
[5] Workforce refers to only those registered nurses who were employed at the time of annual registration.
[6] *Employed in other than nursing* and *not employed* include registered nurses who may or may not be seeking employment in nursing.

The proportions of employment status of RNs in 2011, 2016 and 2020 are highlighted in Figure 3.7. RNs are likely to work full-time, and the rates of the three types of employment status remained stable over the decade studied. However, there was slight decline in the percentage of RNs working full time (58% in 2020 compared to 59% in 2011 and 2016).

Figure 3.7: Proportion of Registered Nursing workforce by employment status

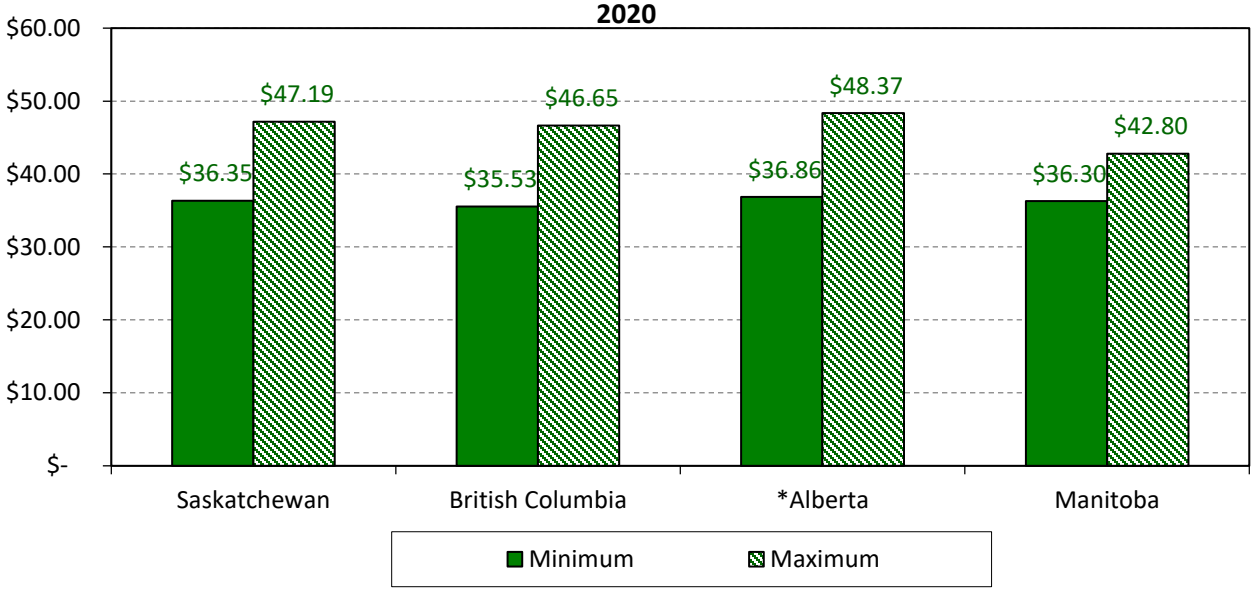


Source: *Nursing in Canada, 2020*: Canadian Institute for Health Information (CIHI), 2021.

3.4 Wage Rates and Earnings

Wage rates provide an indication of demand because in classic labor market economics, an increase in demand for a specific occupation will coincide with an increase in wage rates. Wage rates are also a useful indicator of the pressures for interprovincial migration to the extent that significantly higher or lower wage rates in other provinces will provide an incentive or disincentive for Saskatchewan nurses to move to other provinces for work. The comparison of 2020 union wage rates for general duty nurses (RNs and RPNs) in western Canada is shown in Figure 3.8. Given Saskatchewan's unionized nurses relatively higher rate of pay there may be no financial incentive for RNs and RPNs to move to other western provinces other than Alberta.

Figure 3.8: Min and Max hourly wage rates as per current Collective Agreement, 2020

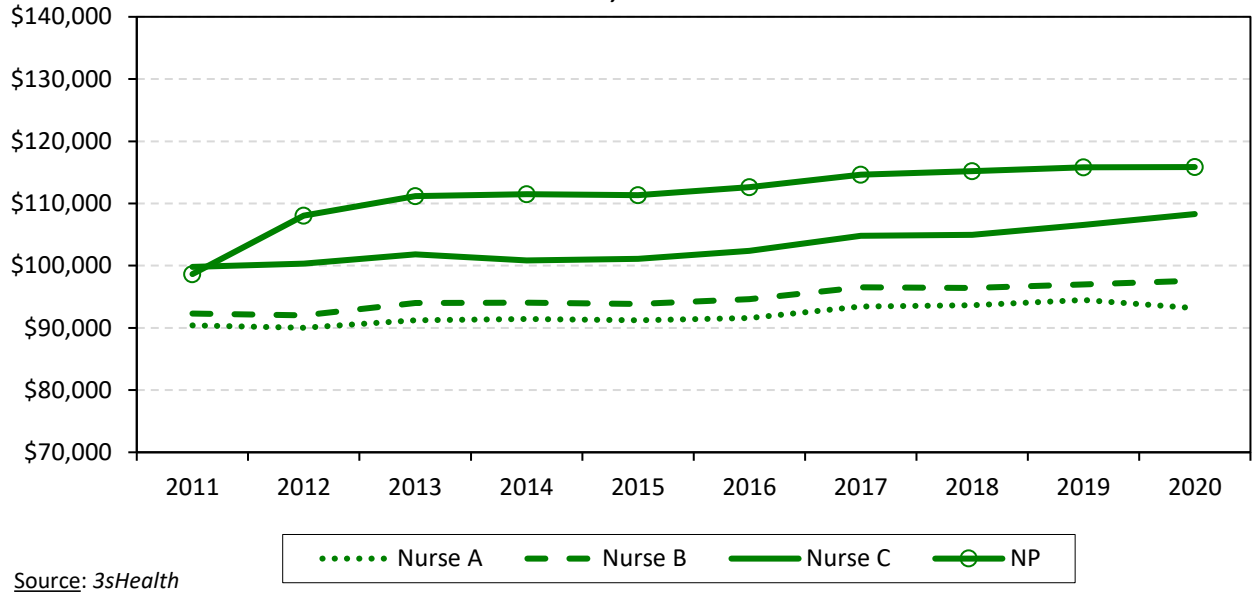


Sources:
Saskatchewnan: SAHO/SUN Collective Agreement, April 1, 2014 to March 31, 2018. Assume 0% for 2018-19 and 2019-20.
Manitoba: MNU/Concordia Collective Agreement, April 1, 2013 to March 31, 2017.
British Columbia: HEABC/NBA Collectove Agreement, April 1, 2019 to March 31, 2022.
*Alberta: UNA/AHS Collective Agreement, April 1, 2013 to March 31, 2017. Alberta parties have ratified a three-year collective agreement which expires on March 31, 2020. The agreement includes as salary freeze for two years with a requirement to negotiate wages in the third year.

Figure 3.9 shows that for Nurses A, B and C, the average salary per paid FTE in SHA and Affiliates increased significantly between 2011 and 2020. For Nurse Practitioners, the average salary per paid FTE increased significantly between 2007 and 2012. These annual increases have been well in excess of the rate of inflation, a classic indicator of increased demand.

After the significant increases in those years, the changes in average salary had been minimal until 2017 when the growth rates of average salary were (-1.4) %, 0.6%, 1.6% and 0.0% for Nurses A, B, C and Nurse Practitioners, respectively.

Figure 3.9: Average Salary per Paid FTE for Nurses A, B, C and NP in SHA & Affiliates, 2011-2020



Source: *3sHealth payroll.*

DEMAND AND SUPPLY FORECAST

4.1 Assumptions

In the health human resource (HHR) forecast model is based on the assumption that workforce would grow at the same pace as historical workforce growth, population growth, or the mix of the above two.

Any gap that may exist between supply and demand would be filled by the healthcare system without any accumulation into the following year.

The retention rate of Saskatchewan graduates is fixed across years despite varying recruitment incentives.

Net migration of professionals is zero, i.e. the number of professionals moving into the province is the same as the number of professionals moving out of the province.

4.2 Supply

$Supply_t$ (in headcount) = $N_{t,graduate} + N_{t,migration}$

where $N_{graduate}$ is the number of graduates entering the Saskatchewan labour market;

$N_{migration}$ is the net migration of the professionals;

t is the forecast year.

4.3 Demand

$Demand_t$ (in FTEs)= $\alpha * N_{t-1,workforce} * r_{t-1,population} + \beta * N_{t-1,workforce} * r_{t-1,historical} + N_{t,retirement} + N_{t,resignation} + N_{t,initiatives} + V_t$

where $N_{workforce}$ is the number of workforce;

$r_{population}$ is the population growth rate;

$r_{historical}$ is the historical growth rate;

$N_{retirement}$ is the number of workforce;

$N_{resignation}$ is the number of workforce;

$N_{initiatives}$ includes incremental workforce required to meet needs due to capital projects, government initiatives, etc.;

V_t is the long-term vacancies;

α and β are weights with values between 0 and 1 (and the sum of α and β is 1) depending on the profession and situation and may vary year by year;

t-1 is the year before the forecast year.

4.3.1 Conversion

$Demand_t$ (in headcount) = $Demand_t$ (in FTEs) * Headcount_to_FTE_ratio registered nurses,

$Provincial\_Demand_t$ (in headcount) = $Demand_t$ (in headcount) / Proportion_on_3sHealthPayroll.

Figure 4.1 Registered Nurses Demand and Supply, 2021 to 2030

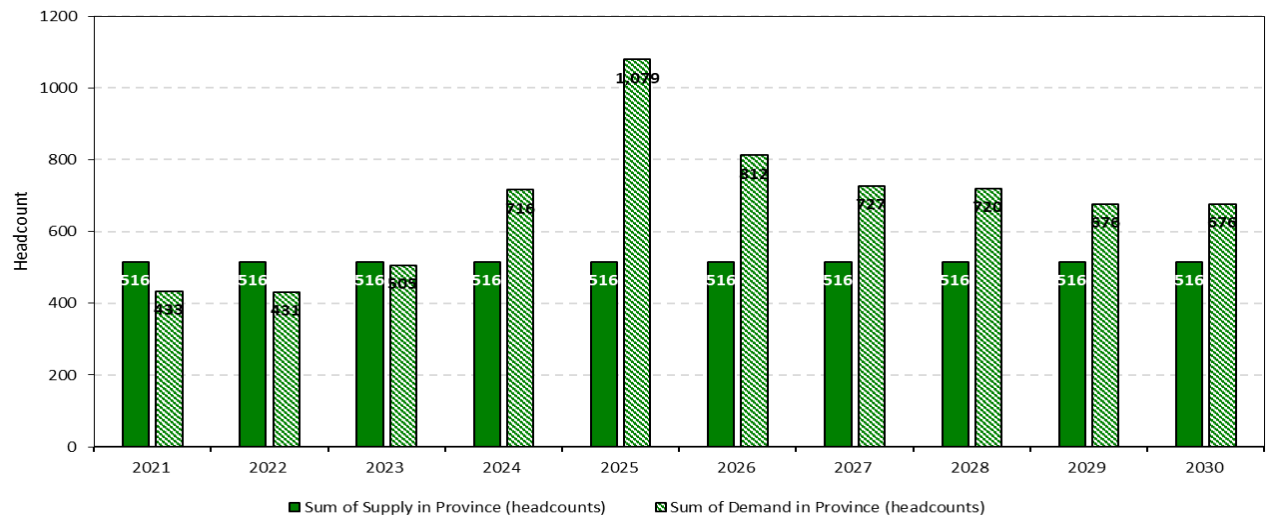
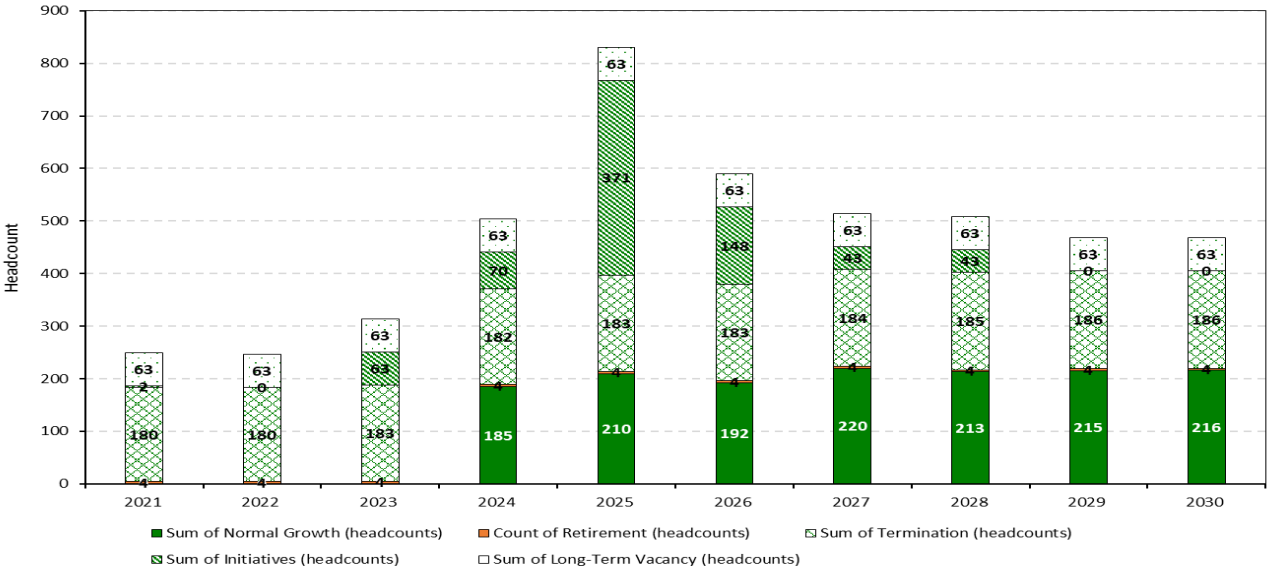


Figure 4.2 Components of Demand for Provincial Registered Nurses, 2021 to 2030



4.4 Model Limitations

- The health human resource (HHR) forecast model is not able to reflect the reality that the service delivery pattern would evolve with time.
- The HHR Forecast Model is not able to predict unforeseeable events such as the COVID-19 pandemic occur that may have a significant impact on the workforce.
- The HHR Forecast Model is not able to show the distribution issue. Certain professions in some rural/remote communities are hard to recruit despite sufficient supply.
- The HHR Forecast Model shows the provincial demand for regulated professions only. Other professions do not have reliable data showing percentage of them working outside of the health sector.

CONCLUSION

The Ministry of Health does not recommend increasing or decreasing the nursing seats at this time and suggests the supply and demand for nurses be monitored on a regular basis.

The current number of RN/RPN students graduating from Saskatchewan RN/RPN education programs and connecting to Saskatchewan labour market is 509, and this number is projected to increase to 526 in 2023-24. These numbers of graduates would be sufficient to meet the labour market demand of between 424 and 525 for the next 5 years. Note that this projection is based on the assumption that services will continued to be delivered the same way as they historically have. In addition, according to CIHI's data, Saskatchewan normally has greater inflow of RNs than outflow of RNs.

The current education model might not meet the labour needs in both urban and rural/remote areas of Saskatchewan. In 2017, only 20% of RNs worked in rural/remote areas. Employers in rural and remote areas of the province continue to report challenges in recruiting and retaining RNs. In addition, as Jim Pattison Children's Hospital is scheduled to open in 2019, there could be more RN workforce required to fulfill the Children's Hospital's staffing need.

Due to data limitations Registered Psychiatric Nurses (RPNs) are forecasted with Registered Nurses. It is not known based on the data if there is a need for additional RPN training seats as this analysis was not intended to review the RPN labour market demand. RPN vacancies and postings are expected to increase due to staffing requirements at the new Saskatchewan Hospital North Battleford as well as government's investment to enhance access to mental health and addiction services. In response to the increase of demand, Saskatchewan Polytechnic has increased the training seats by eight in the fall of 2018. In addition, there is support from the Ministries of Advanced Education and Health to have North West College broker 16 incremental RPN seats in the fall of 2019 from Saskatchewan Polytechnic in North Battleford.

NEXT STEPS

- The finalized Registered Nursing Labour Market Analysis-Update report will be shared with members of the Nursing Deans' Forum.
- The report will be updated every three (3) years, as the numbers do not change significantly before the 3-year time frame.
- An annual profile report will be provided depending on availability of new data.