PerinatalNB

NB Perinatal Health Program
Perinatal Health Profile 2018-2023

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Introduction

Administrative Program Director's Message

For the past ten years, the NB Perinatal Health Program has been dedicated to enhancing the availability of pertinent provincial data pertaining to maternal and neonatal health. We are delighted to present our fourth report, now called Perinatal Health Profile, highlighting trends, progress, and areas for improvement. Data plays a crucial role in helping stakeholders and decision-makers understand the diverse landscape of maternal and neonatal care throughout the province. Furthermore, we are committed to fostering collaboration with healthcare providers across New Brunswick and working on quality improvement initiatives in tandem with our partners.

This latest report also includes risk factor indicators such as diabetes, hypertension, and body mass index. This broader dataset not only offers insights into maternal and neonatal health outcomes but also enriches our understanding of chronic health conditions prevalent in New Brunswick.

PerinatalNB continues to pursue optimal pregnancy, birth, and neonatal outcomes through leadership, collaboration, data-driven and evidence-based recommendations, education, and knowledge exchange. We firmly believe that data plays a pivotal role in reaching our vision of achieving optimal health outcomes for expectant pregnant individuals, babies, and their families across New Brunswick.

Perinatal NB Administrative Program Director

Gaetane Leblanc-Cormier

Medical Director's Message

In the year 2024, PerinatalNB commemorates a decade since its establishment. We take great pleasure in announcing the release of our fourth report, titled the "Perinatal Health Profile." This comprehensive report offers an overview of maternal and neonatal health throughout the province. Within the pages of this report, the reader will recognize unique variation in care, as well as notable trends observed in our metrics.

In 2023, Perinatal NB launched its inaugural Facility Level Health Profile Report, a confidential document designated solely for individual healthcare facilities. Our team convened, whether virtually or in person, with all antenatal and neonatal provider teams across the province, fostering insightful data-driven discussions. This initiative provided a unique opportunity to identify areas for quality improvement, celebrate accomplishments, and acknowledge potential challenges revealed by the data.
We anticipate that these meetings mark the onset of new and stronger collaborations across the province.

At PerinatalNB, we are committed to provide high-quality data to facilitate informed healthcare decisions. We collaborate with stakeholders to identify priorities and equip them with the necessary data to enhance quality and patient care. Our collaborative efforts extend both provincially and nationally, ensuring the provision of highest standards of up-to-date care for our New Brunswick families.

Perinatal NB Medical Director

Dr. Ariadna Grigoriu

Notes and Limitations

Data for this report was retrieved from the 3M Health Data Management System, Horizon Health Network and Réseau de santé Vitalité, 2018/19-2022/23. Please see "Data Source" for each indicator for more information.

Each fiscal year begins April 1st and ends March 31st of the following year. In this report, data within each fiscal year is based on the mother's delivery date, newborn's birth date, and mother's hospital discharge date for termination of pregnancy.

The term "birth" is different from "delivery". A delivery is a maternal indicator which refers to a completed pregnancy, regardless of the number of infants born. A birth is a newborn indicator which refers to a live or stillborn infant.

The term "live births" excludes all stillbirths and any births resulting from a therapeutic abortion.

Gestational age of a fetus or newborn is determined by Last Menstrual Period (LMP) or by Early Ultrasound (US), depending on whether or not an early ultrasound was completed. Pre-term delivery is a newborn delivered prior to 37 weeks gestation, term is a newborn delivered between 37- and 42-weeks gestation and post-term is a newborn delivered after 42 weeks gestation.

Exclusive Breastfeeding at Discharge is defined as provided by the Breastfeeding Committee of Canada. This includes all newborns that received only breast milk from birth to hospital discharge, as well as any newborns that received breastmilk substitute for a medical reason.

Size for Gestational Age is defined according to the Canadian Perinatal Surveillance System Birth Weight growth chart published by the Public Health Agency of Canada (2001). Newborns are categorized as Intrauterine Growth Restriction (≤ 3%ile), Small for Gestational Age (≤ 10%ile), or Large for Gestational Age (≥ 90%ile, ≥ 97%ile) according to gestational age, sex and birth weight.

Low Birth Weight is defined as a birth weight at any gestational age under 2,500 grams, Normal Birth Weight a birth weight at any gestational age between 2,500 grams and 4,500 grams, and High Birth Weight is a birth weight at any gestational age above 4,500 grams.

Neonatal Intensive Care Unit (NICU): Three birthing hospitals in the province have NICUs providing the highest level of newborn care indicated as Level 3: The Moncton Hospital, Dr Everett Chalmers Regional Hospital, and the St John Regional Hospital.

Special Care Unit (SCU): The following hospitals have care units to provide special care to newborns indicated as Level 2: Dr. Georges-L.-Dumont University Hospital Centre, Chaleur Regional Hospital, Edmundston Regional Hospital, and Miramichi Regional Hospital.

Neonate is defined as any live born infant between birth and 28 days of age.

Rates derived from fewer than six reported cases, or with missing data greater than 30% are not reportable and are thereby shown as "NR" in this report.

Health Zone Map: (Retrieved from New Brunswick Health Council Website – Maps of health zones and NBHC communities https://nbhc.ca/maps-health-zones-and-nbhc-communities)

Health Zone 1 – Moncton and South-East Area
Health Zone 2 – Fundy Shore and Saint John Area
Health Zone 3 – Fredericton and River Valley Area
Health Zone 4 – Madawaska and North-West Area
Health Zone 5 – Restigouche Area
Health Zone 6 – Bathurst and Acadian Peninsula Area
Health Zone 7 – Miramichi Area

List of Acronyms

CIHI: Canadian Institute for Health Information

C-Section: Caesarean Section

MIS designated: Management Information System designated

NB: New Brunswick

NICU: Neonatal Intensive Care Unit

NR: Not reportable (due to ≤ 5 reported cases)

PHAC: Public Health Agency of Canada

RHA: Regional Health Authority

SCU: Special Care Unit

VBAC: Vaginal Birth after Caesarean Section

BMI: Body Mass Index

SOGC: Society of Obstetricians and Gynaecologists of Canada

List of New Brunswick Birthing Hospitals

Campbellton: Campbellton Regional Hospital

CHU Dumont: Centre hospitalier universitaire Dr-Georges-L.-Dumont (University Hospital Centre)

Chaleur: Chaleur Regional Hospital

DECH: Dr. Everett Chalmers Regional Hospital

Edmundston: Edmundston Regional Hospital

Miramichi: Miramichi Regional Hospital

SJRH: Saint John Regional Hospital

TMH: The Moncton Hospital

URVH: Upper River Valley Hospital

Chapter 1 Maternal Health

Total Deliveries

The number of deliveries in New Brunswick has seen a slight decrease in the past 5 years. While in the past, this decline was more pronounced then in the rest of Canada, recently we've observed a shift. A plateau followed by a slight rise in the pandemic years (2019-2022) is noted. This likely correlates with migration of Canadians across provincial borders during and post-pandemic. In April to June of 2022, New Brunswick had the highest gain from interprovincial migration since 1971[2]. There has also been an increase in immigration, thus we postulate that in the coming years we may see this trend take an upward turn. Across Canada, there continues to be a decrease of between 8,000 to 12,000 births each year between 2018/19 and 2022/23[1].

Definition

The total number of deliveries performed at each Regional Health Authority (RHA) and in New Brunswick. Multiple births are counted as one delivery.

Data Source

3M Health Data Management System, Horizon Health Network and Réseau de santé Vitalité, 2018-2023. Data extracted October 27th, 2023.

Reference:

1. Number of Newborns by Province, CIHI Portal (DAD). Data Extracted: December 11, 2023.
2. Quarterly Demographic estimates, April to June 2022, Statistics Canada, https://www150.statcan.gc.ca/n1/pub/91-002-x/91-002-x2022002-eng.htm. Accessed: February 28, 2023.

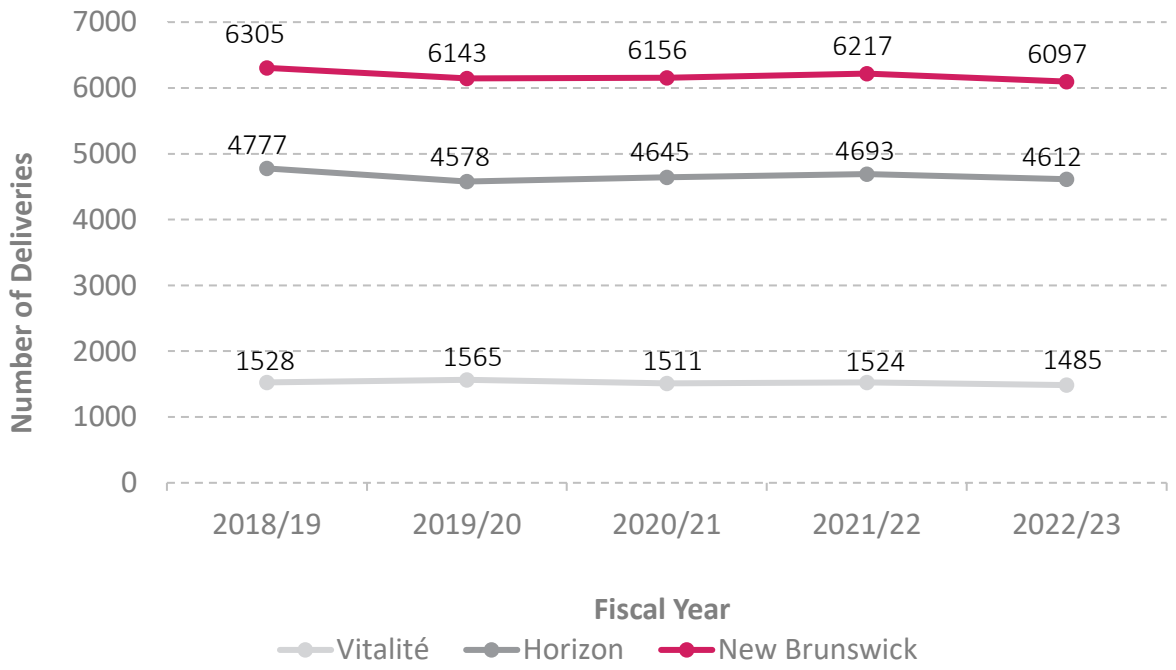

Figure 1.1: Number of deliveries, by location, 2018/19 to 2022/23

Total Deliveries by Birthing Hospital

In 2022/23, 75.6% of deliveries occurred in Horizon Health Network birthing hospitals. This proportion has remained stable over the 5 years reported.

Within the province, the highest proportion of births (31.5%) occurs in Zone 1, the most populous region (2021 Census population of 226, 494[1]). Within this zone, approximately 2/3 (62.9%) of births occur at the Moncton Hospital and 1/3 at the Dr. Georges-L.-Dumont University Hospital Centre. Compared to 2018/19, there's a slight increase in the number of births in both centers, but more pronounced at the Dr. Georges-L.-Dumont University Hospital Centre.

Note that the Labour and Delivery Unit of the Campbellton Regional Hospital suspended services at the start of 2020/21. This resulted in pregnant individuals from Health Zone 5 delivering at Chaleur Regional Hospital, Miramichi Regional Hospital and Edmundston Regional hospital.

References:

1. Statistics Canada. 2023. (table). Census Profile. 2021 Census of Population. Statistics Canada Catalogue no. 98-316-X2021001. Ottawa. Released November 15, 2023. https://www12.statcan.gc.ca/census-recensement/2021/dp-pd/prof/index.cfm?Lang=E (accessed February 28, 2024).

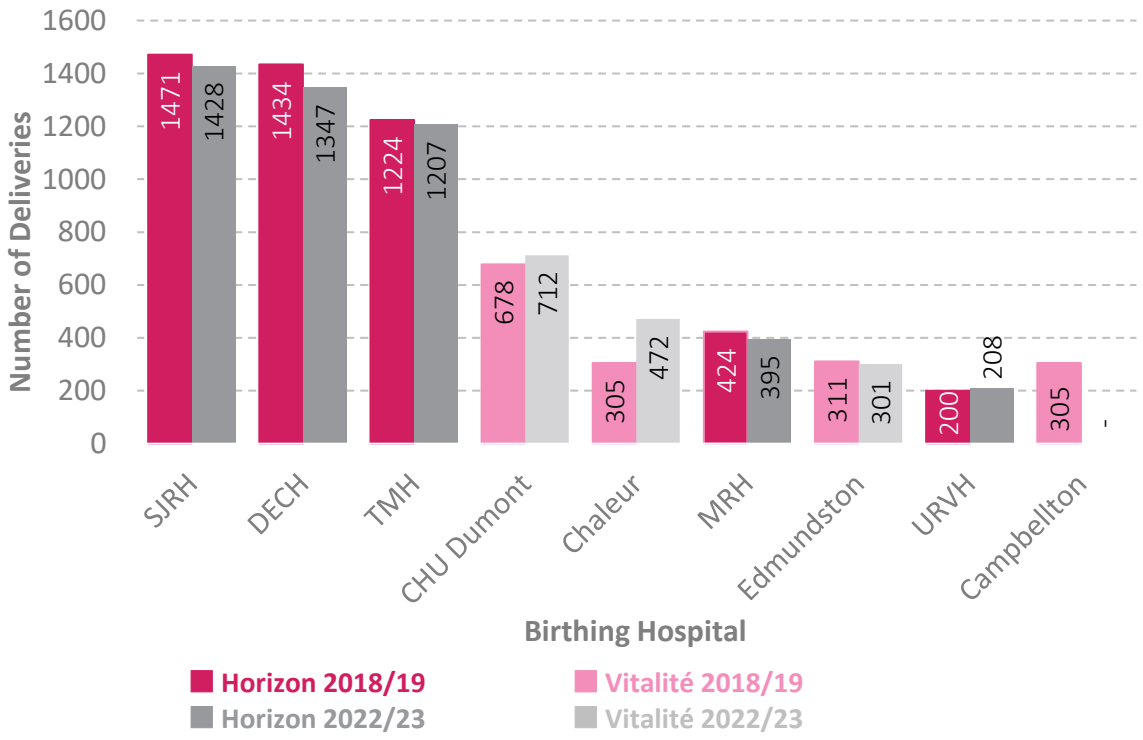

Figure 1.2: Number of deliveries, by birthing hospital, New Brunswick, 2018/19, 2022/23

Definition	Data Source
Number of deliveries performed at each birthing hospital / Total number of deliveries in New Brunswick. Births of multiples are counted as one delivery.	3M Health Data Management System, Horizon Health Network and Réseau de santé Vitalité, 2018-2023. Data extracted October 27th, 2023.

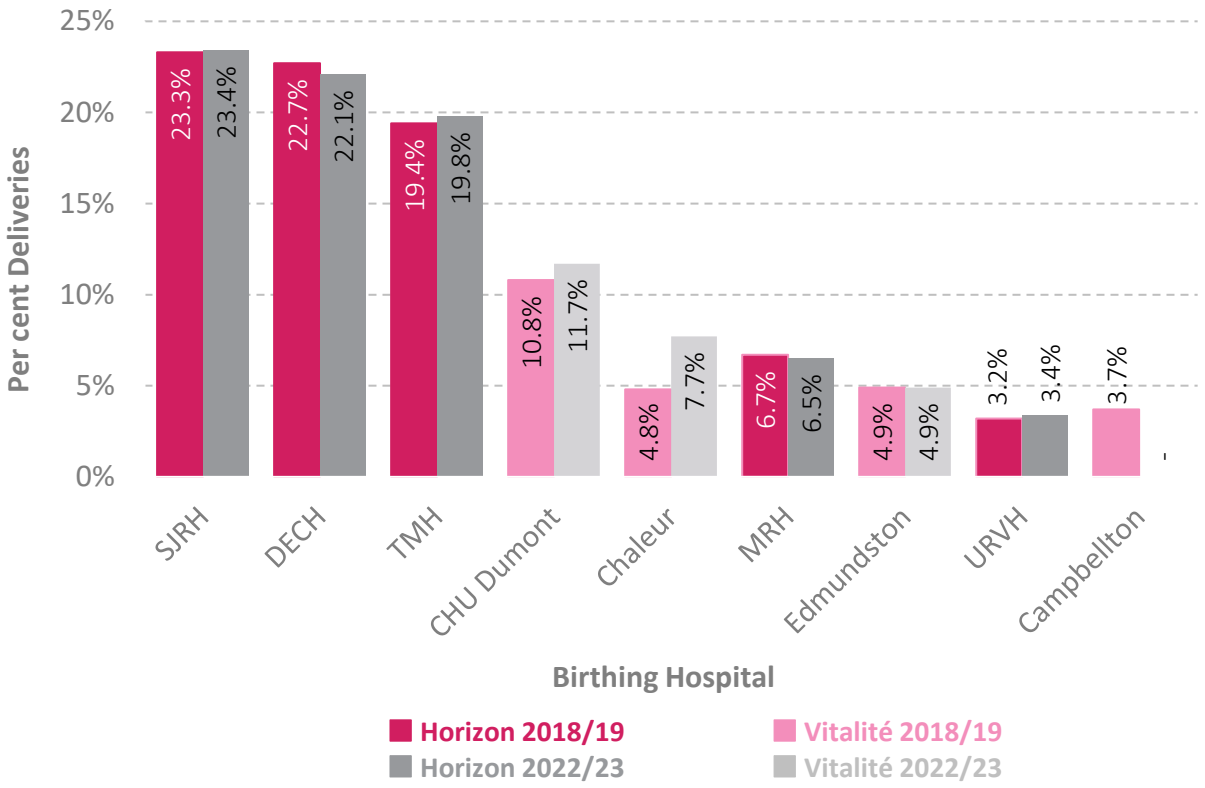

Figure 1.3: Percent of deliveries, by birthing hospital, New Brunswick, 2017/18, 2022/23

Caregiver – Antenatally vs at delivery

New Brunswick features several models of obstetrical care delivery, exhibiting regional and facility-based variations. Different models include:

- Antenatal care is provided exclusively by a family physician or by an obstetrician.
- Obstetric clinics are run by family medicine physicians. The obstetrician has a consulting role and only in some complex case they are the primary antenatal care provider.
- Antenatal care is provided by family physicians until 32 weeks when care is transferred for the remainder of the pregnancy and delivery to an obstetrician.
- Antenatal care is provided by family physicians or obstetricians, depending on set clinical risk factor criteria.

These various models of care result in the variation observed between RHAs and facilities. Additionally, our current methodology for designating "antenatal care providers" proves imperfect, rendering it incapable of showing the entirety of antenatal care delivery across the province. In future reports, we aim to identify more effective means of portraying the nuances in care delivery variations.

In 2017/18, a midwifery clinic in Fredericton opened with the first delivery done in November of 2017. The Fredericton Midwifery Centre provides care for low-risk pregnancies. With the first 5-year period of complete data, we see that approximately 1% of all pregnancies in New Brunswick received care from a midwife.

Definition

Number of deliveries by antenatal care provider/ Total number of deliveries
Number of deliveries by care provider at delivery/ Total number of deliveries

Data Source

3M Health Data Management System, Horizon Health Network and Réseau de santé Vitalité, 2018-2023. Data extracted October 27th, 2023.

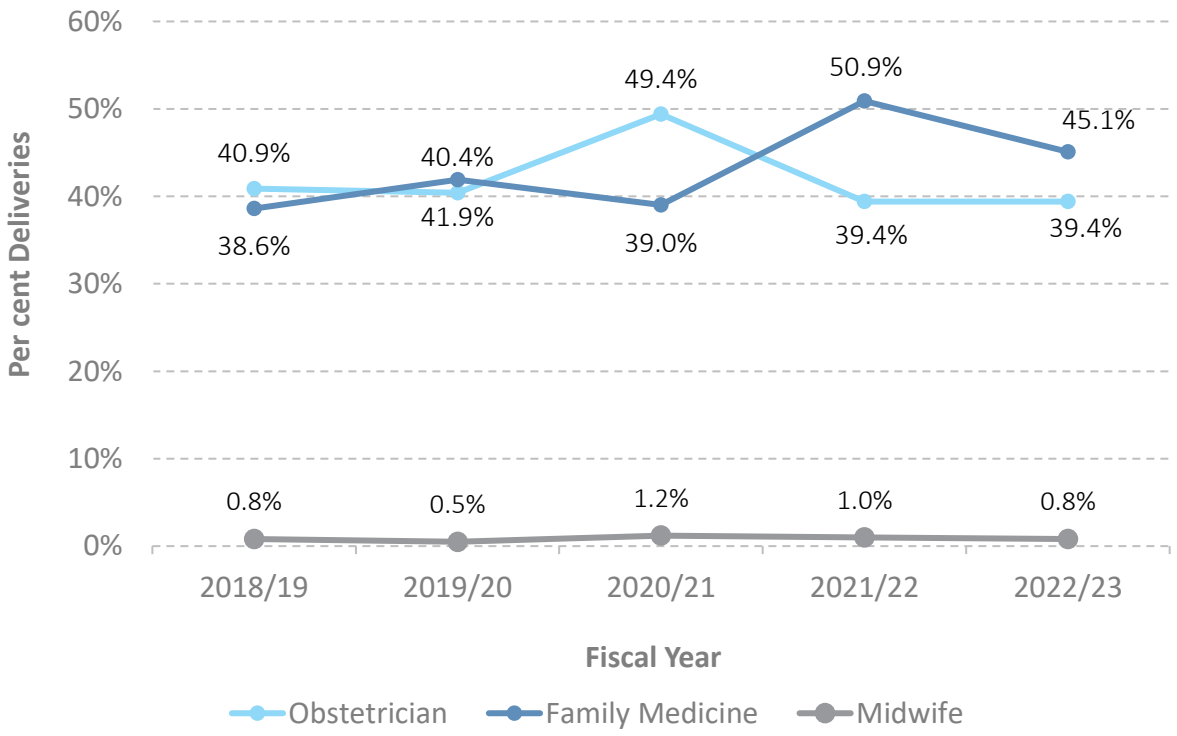

Figure 1.4: Proportion of deliveries by antenatal care provider, New Brunswick, 2018/19 to 2022/23

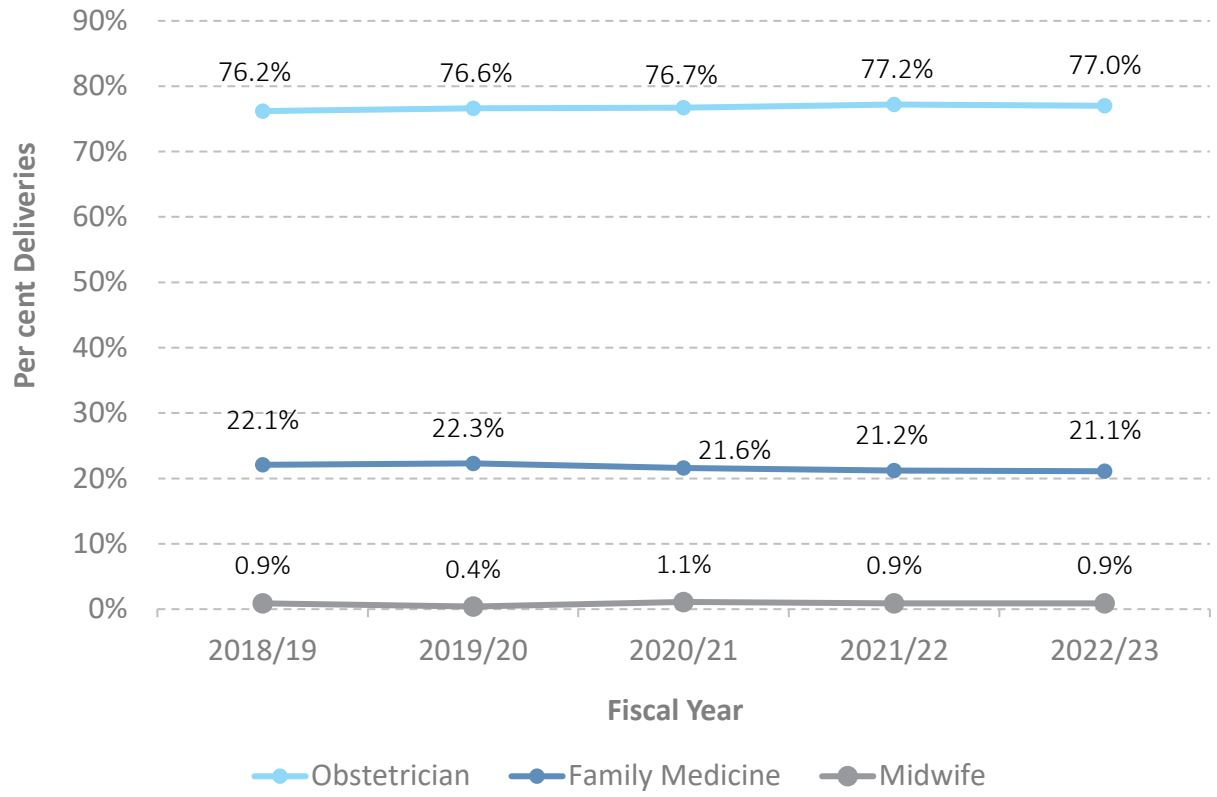

Figure 1.5: Proportion of deliveries by caregiver at delivery, New Brunswick, 2018/19 to 2022/23

Midwifery Deliveries by Delivery Location

In late 2017/18 a midwifery practice opened in Fredericton. This practice allowed for home births as well as hospital births with a midwife as a care provider.

In 2022/23, we observe that half of the deliveries with a midwife as the primary care provider occur in the hospital and half at home. While a third of all midwifery clients require a temporary transfer of care to an obstetrician for delivery. A midwife may still be present for these deliveries in a support capacity and the pregnant individual and their newborns still receive a full 6 weeks of post-partum midwifery care.

The significant decrease seen in 2019/20 was due staffing shortage.

Definition

Number of midwifery deliveries by location of birth.

Data Source

3M Health Data Management System, Horizon Health Network and Réseau de santé Vitalité, 2018-2023. Data extracted October 27th, 2023.

Table 1.1: Midwifery Client Deliveries, by delivery location, New Brunswick, 2018/19 to 2022/23

Type	Midwifery Client Deliveries				
	2018/19	2019/20	2020/21	2021/22	2022/23
Home with Midwife	24	10	32	12	27
Hospital with Midwife	30	16	38	42	28
Hospital delivered by physician with midwife support	27	14	38	31	29
Total	81	40	109	85	84

Maternal Age at Delivery

The 5-year trend for maternal age at delivery is suggestive of a decrease in deliveries to younger pregnant individuals with the teen delivery rate (aged 15 t 19) declining to 2.2% in 2022/23. There has also been an increase in deliveries to older pregnant individuals from 1.7% in 2018/19 to 2.6% in 2022/23.

In Canada in 2022, 1.3% of live births were to teens while the highest proportion of 38.3% was to pregnant individuals aged 30 to 34. Finally, the proportion of live births for pregnant individuals over the age of 40 was 4.6%[1].

Definition

Number of deliveries to pregnant individuals within each age category at time of delivery / Total number of deliveries.

Data Source

3M Health Data Management System, Horizon Health Network and Réseau de santé Vitalité, 2018-2023. Data extracted October 27th, 2023.

Reference

1. Statistics Canada. Table 13-10-0416-01 Live births, by age of mother. https://www150.statcan.gc.ca/t1/tbl1/en/cv.action?pid=1310041601, accessed: February 28, 2024

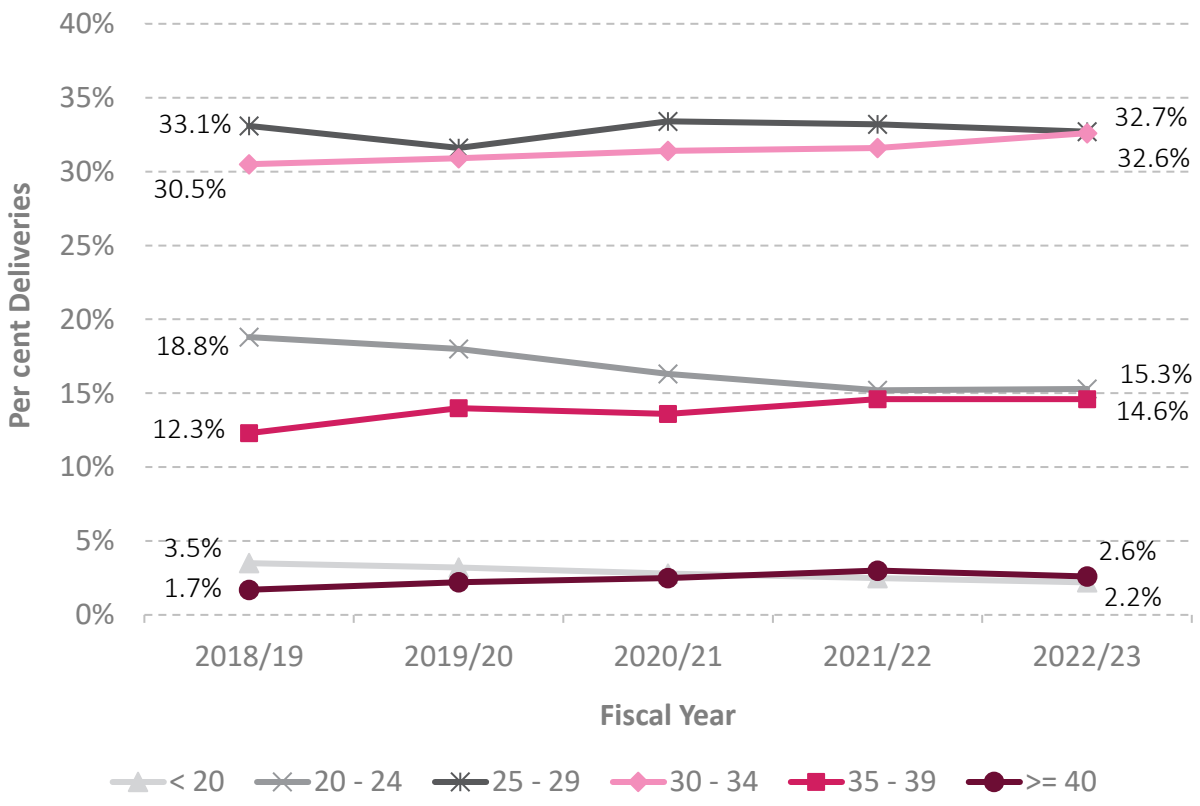

Figure 1.6: Maternal age at delivery, by age group, New Brunswick, 2018/19 to 2022/23

Diabetes Mellitus in Pregnancy

The rate of pre-existing diabetes mellitus (Type 1 and Type 2) has been increasing over the past 5 years and it appears to have plateaued at 1.3%. Gestational diabetes increased steadily to a peak of 10% in 2022/23.

Pregnant individuals who experience gestational diabetes are at an increased risk of developing type 2 diabetes later in life[1]. As well, diabetes in pregnancy can cause newborn complications such as large for gestational age, respiratory difficulties, hypoglycemia, and other metabolic concerns[1].

Definition

Number of deliveries to pregnant individuals with pre-existing or gestational diabetes / Total number of deliveries.

Data Source

3M Health Data Management System, Horizon Health Network and Réseau de santé Vitalité, 2018-2023. Data extracted October 27th, 2023.

Reference

1. Guidelines No. 393 – Diabetes in Pregnancy. J Obstet Gynaecol Can 2019; 41(12):1814-1825.

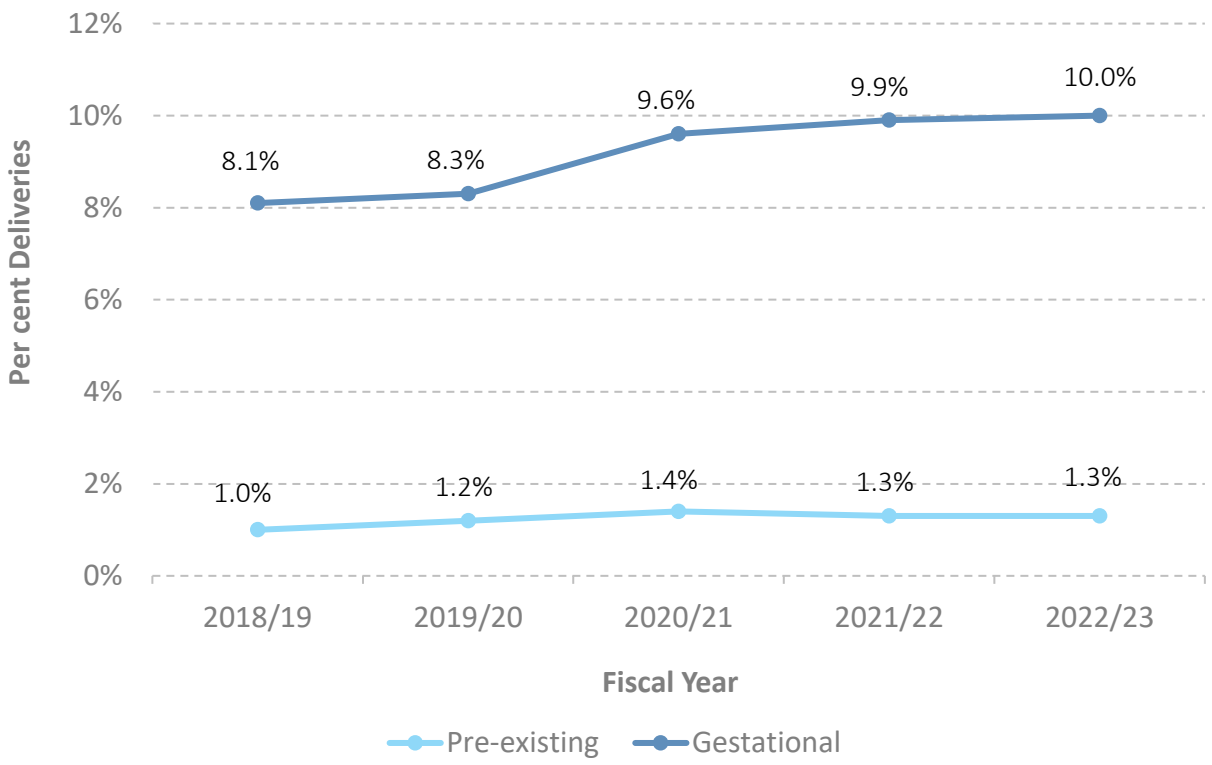

Figure 1.7: Per cent of pregnant individuals with diabetes during pregnancy, by type, New Brunswick, 2018/19 to 2022/23

Hypertension in Pregnancy

There was a significant increase in pre-existing hypertension in pregnancy, almost doubling from 1.2% in 2018/19 to 2.2% in 2022/23. The rates of gestational hypertension and pre-eclampsia have been also increasing but at a slower rate. From the most recent Canadian data in 2019, 7.7% of all pregnancies were affected by hypertension in pregnancy (pre-existing and gestational)[1], in comparison to 7.7% of pregnancies in New Brunswick for that time period. In New Brunswick, this rate has continued to rise.

Hypertension in pregnancy can cause pre-term delivery, fetal growth restriction and can impact neonatal morbidity and mortality. There is also evidence that pregnant individuals who experience hypertension in pregnancy are at a higher risk for developing cardiovascular disease later in life[2].

Definition

Number of deliveries to pregnant individuals with pre-existing or gestational hypertension or pre-eclampsia/ Total number of deliveries.

Data Source

3M Health Data Management System, Horizon Health Network and Réseau de santé Vitalité, 2018-2023. Data extracted October 27th, 2023.

Reference

1. Centre for Surveillance and Applied Research, Public Health Agency of Canada. Canadian Chronic Disease Indicators Data Tool, 2021 Edition. Public Health Infobase. Ottawa (ON): Public Health Agency of Canada, 2021.
2. Guidelines No. 426: Hypertensive Disorders of Pregnancy: Diagnosis, Prediction, Prevention, and Management. J Obstet Gynaecol Can 2022; 44(5):547-571.

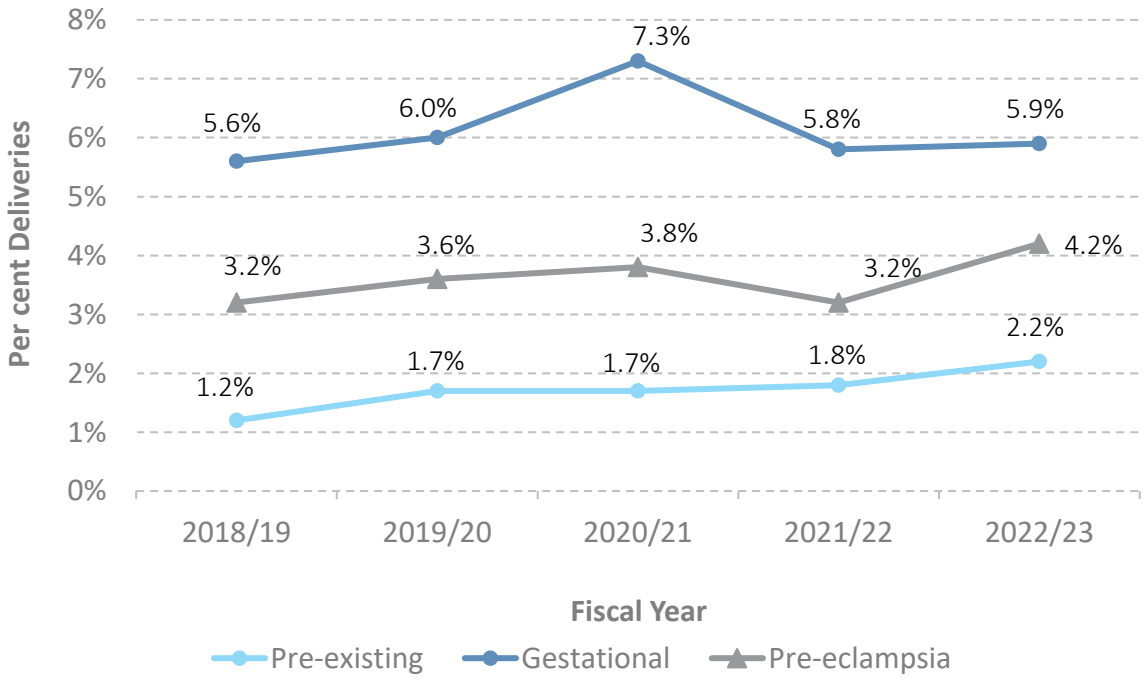

Figure 1.8: Per cent of pregnant individuals with hypertension during pregnancy, by type, New Brunswick, 2018/19 to 2022/23

Smoking during Pregnancy

Between 2018/19 and 2022/23, there has been a continuous decreasing trend for smoking before pregnancy and smoking during pregnancy. The rate of smoking in pregnancy has decreased from 14.5% to 10.3%. The proportion of pregnant individuals who quit smoking when they become pregnant has remained steady over the 5 years at approximately 35%. It should be noted that this is self-reported data given by pregnant individuals at their first prenatal visit.

In 2017, 8.2% of pregnant individuals reported smoking during pregnancy in Canada[1]. This is almost half of the proportion of pregnant individuals in 2018/19 that reported smoking in New Brunswick. In general, approximately 50% of pregnant individuals who smoke spontaneously quit or reduce their tobacco use during pregnancy[2]. Pregnant individuals who quit smoking reduce their risk of miscarriage, pregnancy complications, and premature birth[2]. Quitting smoking when becoming pregnant is an important factor in preventing nicotine, carbon monoxide and other chemicals from tobacco smoke passing to the fetus[2].

Definition

Number of pregnant individuals who smoked prior to or during pregnancy / Total number of deliveries.

Data Source

3M Health Data Management System, Horizon Health Network and Réseau de santé Vitalité, 2018-2023. Data extracted October 27th, 2023.

Reference

1. Centre for Surveillance and Applied Research, Public Health Agency of Canada. Perinatal Health Indicators Data Tool, 2020 Edition. Public Health Infobase. Ottawa (ON): Public Health Agency of Canada, 2020.
2. Pre- and Post Natal Smoking Issues (2009). Government of Canada. Pre-and Post Natal Smoking Issues - Canada.ca, accessed: March 4, 2024.

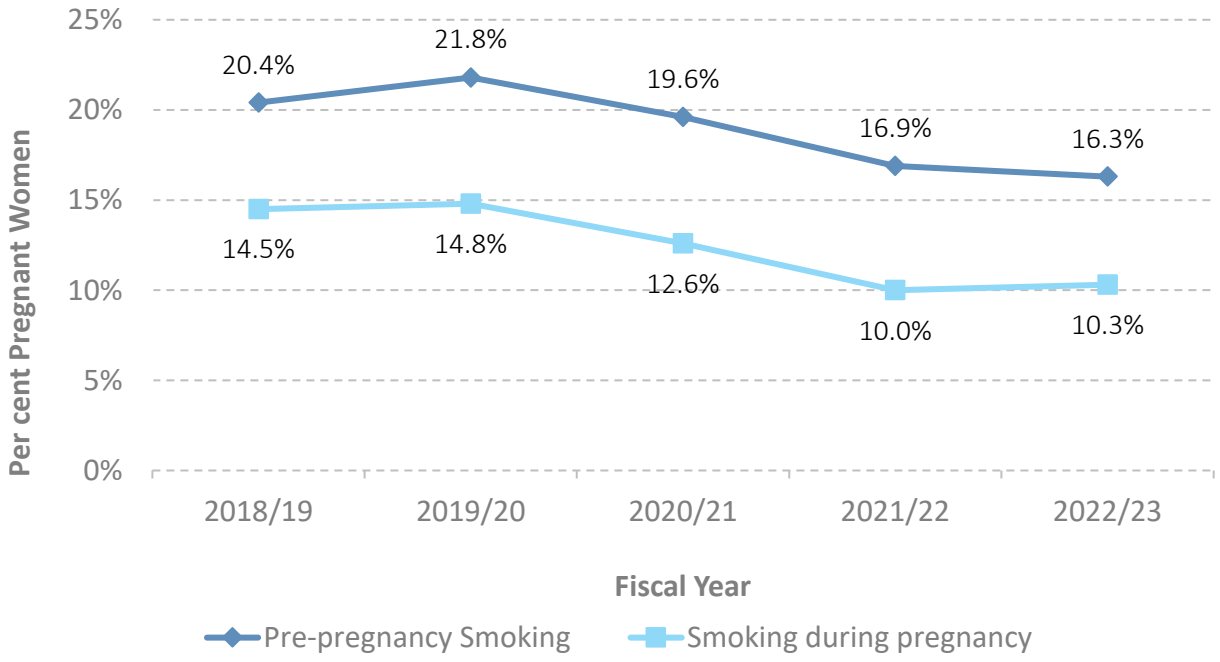

Figure 1.9: Per cent of pregnant individuals who smoked prior to pregnancy and during pregnancy, New Brunswick, 2018/19 to 2022/23

Smoking during Pregnancy by Health Zone

Overall, smoking during pregnancy rates are decreasing across all Health Zones, with the biggest decrease occurring in Health Zone 7, dropping from 23.6% to 13.6% between 2018/19 and 2022/23.

With the decrease in smoking during pregnancy rates, work is being done to accurately capture vaping in pregnancy statistics as the trend in the general population is a switch from smoking to vaping. In 2022, 10.9% of Canadians smoked cigarettes and 5.8% vaped, while in 2019 11.9% of Canadians smoked cigarettes and 4.7% vaped[1,2].

Definition

Number of pregnant individuals who smoked during pregnancy / Total number of deliveries.

Data Source

3M Health Data Management System, Horizon Health Network and Réseau de santé Vitalité, 2018-2023. Data extracted October 27th, 2023.

Reference

1. Canadian Tobacco and Nicotine Survey 2022. Statistics Canada. https://www.canada.ca/en/health-canada/services/canadian-tobacco-nicotine-survey/2022-summary/2022-detailed-tables.html#tbl5, accessed: March 4, 2024
2. Canadian Tobacco and Nicotine Survey 2019. Statistics Canada. https://www.canada.ca/en/health-canada/services/canadian-tobacco-nicotine-survey/2019-summary/2019-detailed-tables.html#t5, access: March 4, 2024.

Table 1.2: Per cent of pregnant individuals who smoked during pregnancy, by Health Zone, New Brunswick, 2018/19 to 2022/23

Health Zone	Smoking During Pregnancy				
	2018/19	2019/20	2020/21	2021/22	2022/23
Health Zone 1 - Moncton and South-East	11.0%	12.8%	10.6%	10.0%	9.3%
Health Zone 2 - Fundy Shore and Saint John	15.7%	15.9%	12.6%	8.7%	10.6%
Health Zone 3 - Fredericton and River Valley	13.8%	13.9%	12.5%	9.9%	10.6%
Health Zone 4 - Madawaska and North-West	20.1%	18.1%	15.8%	10.7%	12.9%
Health Zone 5 - Restigouche	16.5%	18.5%	14.2%	12.6%	12.5%
Health Zone 6 - Bathurst and Acadian Peninsula	15.4%	16.1%	14.7%	10.8%	6.9%
Health Zone 7 - Miramichi	23.6%	18.7%	16.7%	14.2%	13.6%

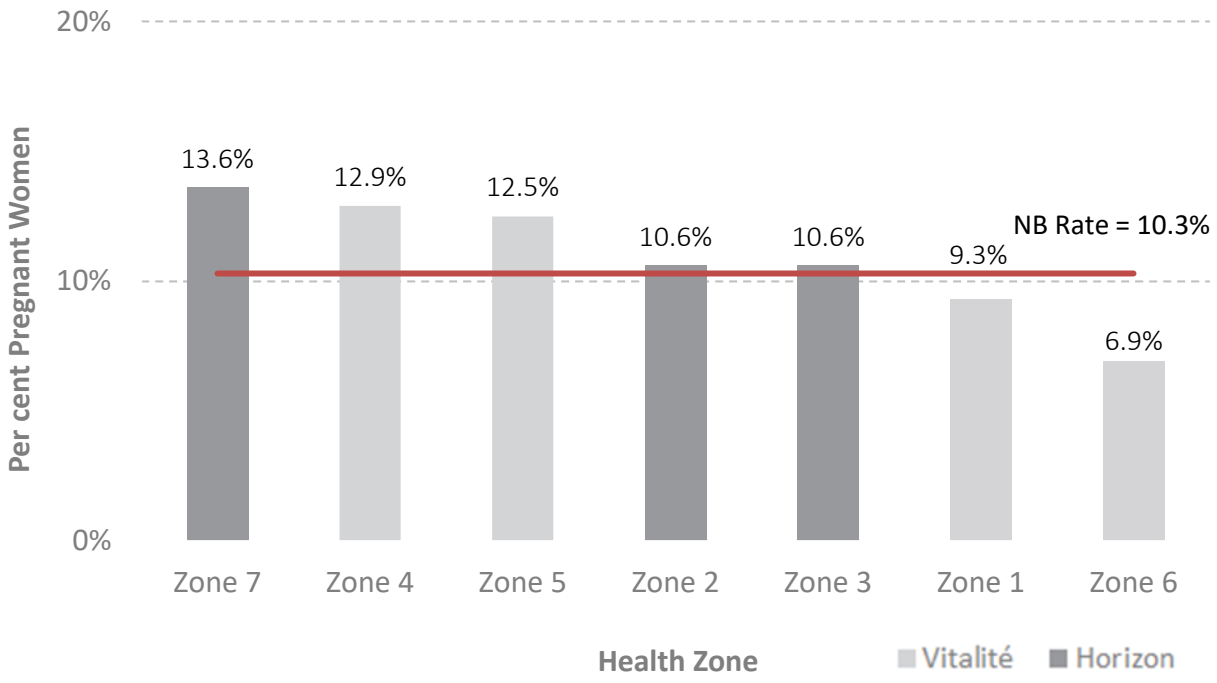

Figure 1.10: Per cent of pregnant individuals who smoked during pregnancy, by Health Zone, New Brunswick, 2022/23

Cannabis use during Pregnancy

Cannabis use during pregnancy in New Brunswick has been increasing since legalization in October 2018. We have seen an increase from 6.8% in 2018/19 to 8.2% in 2022/23. It should be noted that this data is self-reported at the first prenatal visit.

There currently is a lack of evidence on the safety of cannabis use in pregnancy[1]. This has led to the recommendation of counselling pregnant individuals to not consume cannabis while pregnant or at least to reduce consumption[1]. Across Canada, research is being done to determine the effects of cannabis use on the fetus, as well as the long-term effects on the child[1]. While there is currently no Canadian rate of cannabis use, research has found approximately 5% of pregnant individuals are using cannabis in pregnancy in BC in 2020[2], while 1.8% of pregnant individuals in Ontario used cannabis during pregnancy in 2017[3].

Definition

Number of pregnant individuals who used cannabis during pregnancy / Total number of deliveries.

Data Source

3M Health Data Management System, Horizon Health Network and Réseau de santé Vitalité, 2018-2023. Data extracted October 27th, 2023.

References

1. Guideline No. 425b: Cannabis Use Throughout Women's Lifespans – Part 2: Pregnancy, Postnatal Period, and Breastfeeding. J Obstet Gynaecol Can 2022; 44(4):436-444.
2. Bayrampour H., Asim, A. Cannabis Use During the Pre-conception period and Pregnancy after Legalization, J Obstet Gynaecol Can 2021; 43(6): 740-745.
3. Corsi, D., Hsu, H., Weiss, D., Fell, D., Walker, M. Trends and correlates of cannabis use in pregnancy: a population-based study in Ontario, Canada from 2012 to 2017. Can J Public Health 2019 Feb; 110(1): 76-84.

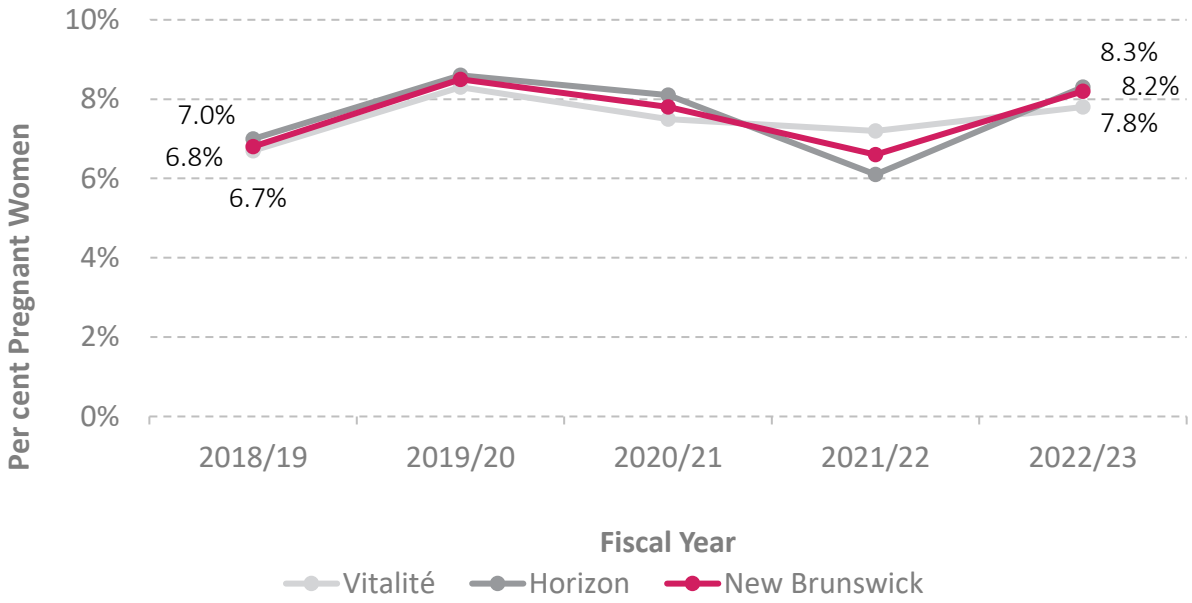

Figure 1.11: Per cent of mothers who used cannabis during pregnancy, by location, New Brunswick, 2018/19 to 2022/23

Cannabis use during Pregnancy by Health Zone

The rate of cannabis use in pregnancy varies significantly across the Health Zones, with a rate of 10.1% in Health Zone 5 and a rate of 5.8% in Health Zone 6.

Definition

Number of pregnant individuals who used cannabis during pregnancy / Total number of deliveries.

Data Source

3M Health Data Management System, Horizon Health Network and Réseau de santé Vitalité, 2018-2023. Data extracted October 27th, 2023.

Table 1.3: Per cent of pregnant individuals who used cannabis during pregnancy, by Health Zone, New Brunswick, 2018/19 to 2022/23

Health Zone	Cannabis Use				
	2018/19	2019/20	2020/21	2021/22	2022/23
Health Zone 1 - Moncton and South-East	7.3%	8.1%	8.1%	8.0%	8.4%
Health Zone 2 - Fundy Shore and Saint John	7.5%	9.3%	8.8%	6.1%	7.9%
Health Zone 3 - Fredericton and River Valley	6.7%	8.1%	7.2%	5.4%	8.8%
Health Zone 4 - Madawaska and North-West	5.7%	8.4%	9.4%	4.4%	6.0%
Health Zone 5 - Restigouche	8.4%	15.8%	6.4%	7.1%	10.1%
Health Zone 6 - Bathurst and Acadian Peninsula	3.7%	6.3%	4.1%	5.9%	5.8%
Health Zone 7 - Miramichi	6.1%	7.8%	9.1%	10.1%	8.3%

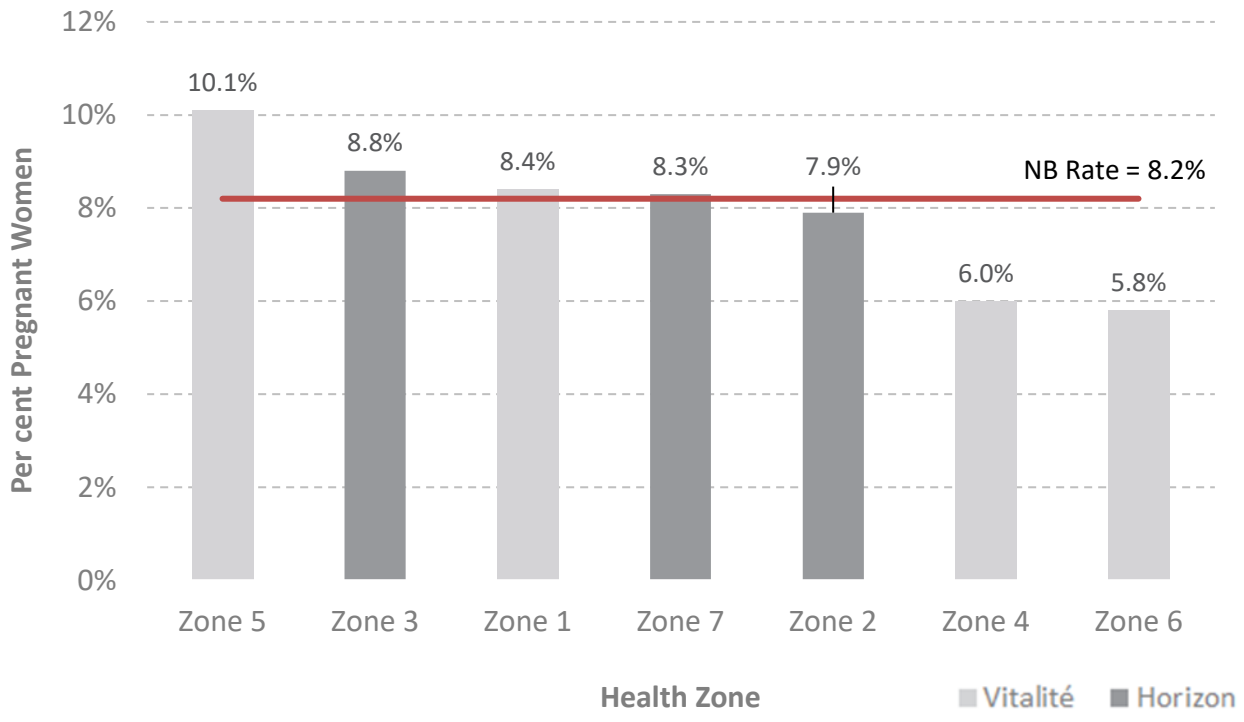

Figure 1.12: Per cent of pregnant individuals who used cannabis during pregnancy, by Health Zone, New Brunswick, 2022/23

Alcohol use during Pregnancy

Alcohol use during pregnancy can have serious effects upon the developing infant. Fetal Alcohol Spectrum Disorder is a well-known disorder that effects the development of an infant's brain and body when exposed to alcohol while in the womb[1]. Obtaining a diagnosis for FASD can be difficult especially if it is unknown if the mother consumed alcohol during her pregnancy.

Due to the following data quality issues on alcohol use during pregnancy in New Brunswick, we are unable to report on this metric:

- It was felt by practitioners that the data was not representative for the consumption habits noted in their clinics.
- The rate of alcohol use in pregnancy currently in our data is significantly lower than the national rate.
- There is unexplainable variability across regions for pre-pregnancy alcohol use.

With support from NB FASD Centre for Excellence, PerinatalNB is engaging providers to improve on data collection.

Reference

1. Canada FASD Research Network, https://canfasd.ca/what-is-fasd/. Accessed: March 13, 2024

Pre-pregnancy Body Mass Index (BMI)

The proportion of pregnant individuals who are obese and overweight continues to increase in New Brunswick. In 2022/23, 27.9% of pregnant persons were obese (BMI >=30) and 23.4% were overweight (BMI 25.0-29.9) prior to pregnancy.

In 2019/20, 37.4% of women aged 18 and older had a BMI >=30 in New Brunswick which was statistically higher than the national of 28.0%[1]. While this rate looks at all women and not just in pregnancy, it reflects the general trend of the child-bearing population in New Brunswick and Canada.

Pregnant individuals who are obese are at a greater risk of developing diabetes or hypertension during their pregnancy[2]. Obesity per the WHO BMI categorization is anyone with a Body Mass Index greater than or equal to 30.

Definition

Number of pregnant individuals who had a BMI <18.5, 18.5-24.5, 25.0-29.9, >=30 before becoming pregnant / Total number of deliveries.

Data Source

3M Health Data Management System, Horizon Health Network and Réseau de santé Vitalité, 2018-2023. Data extracted October 27th, 2023.

References

1. Canadian Community Health Survey (2019/20). Statistics Canada. Table 13-10-0113-01 Health characteristics, two-year period estimates, accessed March 4, 2024.
2. Catalano, P.M., *The impact of gestational diabetes and maternal obesity on the mother and her* offspring. J Dev Orig Health Dis. 2010 Aug; 1 (4): 208-215.

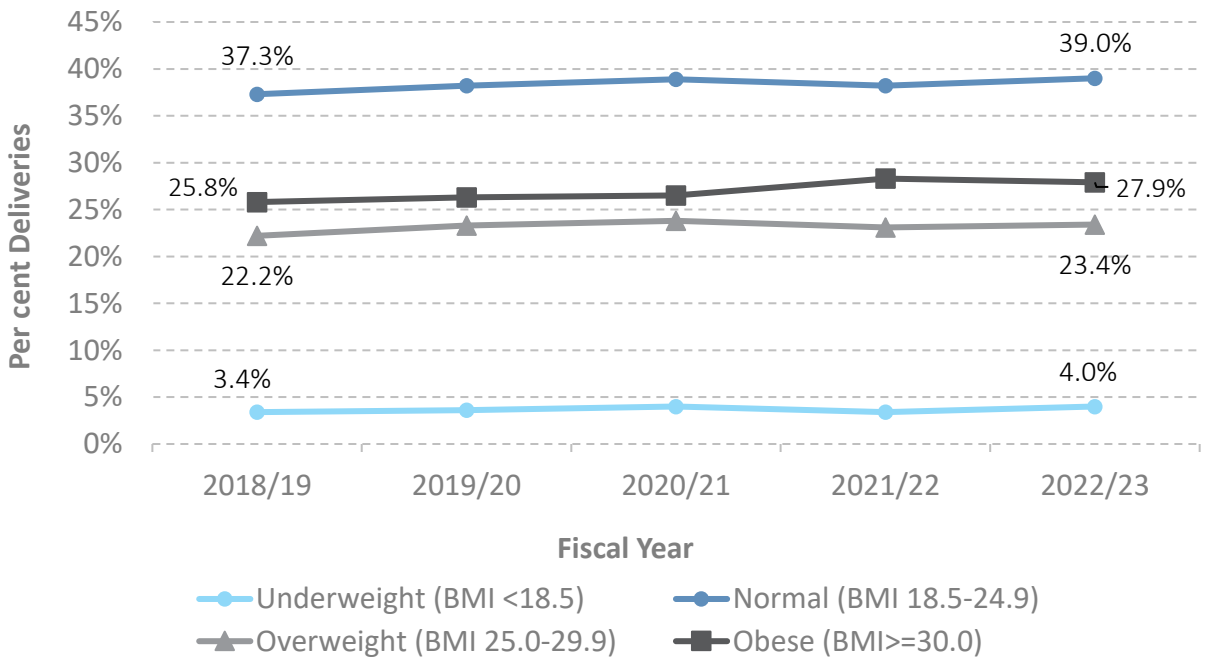

Figure 1.13: Pre-pregnancy BMI, by category, New Brunswick, 2018/19 to 2022/23

Pre-pregnancy BMI > =30 by Health Zone

A steady increase is noted in the proportion of pregnant individuals with a pre-pregnancy BMI >=30 in all Health Zones, except Zones 3 and 4, where the proportion is stable over the past 5 years. Zone 6 continues to have the highest proportion, with 33.9% of pregnant individuals being obese.

Note: Rates with a 'c' indicate missing data between 10.0 and 29.9% and should be interpreted with caution.

Definition

Number of pregnant individuals who had a BMI >= 30.0 before becoming pregnant / Total number of deliveries.

Data Source

3M Health Data Management System, Horizon Health Network and Réseau de santé Vitalité, 2018-2023. Data extracted October 27th, 2023.

Table 1.4: Per cent of pregnant individuals with a pre-pregnancy BMI >= 30, by Health Zone, New Brunswick, 2018/19 to 2022/23

Health Zone	Pre-pregnancy BMI >= 30				
	2018/19	2019/20	2020/21	2021/22	2022/23
Health Zone 1 - Moncton and South-East	23.3%[C]	24.5%	23.6%	26.0%	26.3%
Health Zone 2 - Fundy Shore and Saint John	25.8%[C]	27.1%	28.8%	29.3%	28.8%
Health Zone 3 - Fredericton and River Valley	28.7%	26.7%	28.0%	29.1%	27.6%
Health Zone 4 - Madawaska and North-West	23.0%[C]	27.9%[C]	21.3%	24.8%[C]	23.4%[C]
Health Zone 5 - Restigouche	25.6%[C]	24.2%	24.2%[C]	28.6%	32.3%
Health Zone 6 - Bathurst and Acadian Peninsula	27.4%[C]	29.7%[C]	30.9%	31.6%	33.9%
Health Zone 7 - Miramichi	23.8%[C]	23.3%[C]	24.7%	31.7%	29.2%

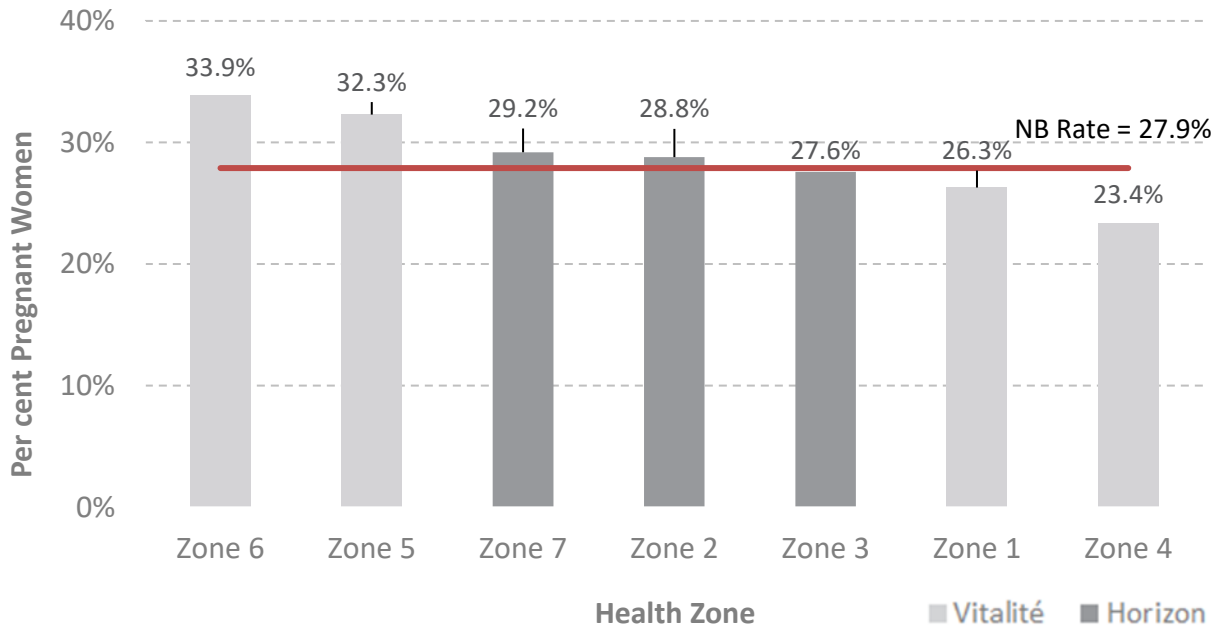

Figure 1.14: Per cent of pregnant individuals with a pre-pregnancy BMI >= 30, by Health Zone, New Brunswick, 2022/23

Chapter 2 Labour and Delivery

C-Section Rate by Birthing Hospital

The C-section rate in New Brunswick is on the rise. In 2022/2023 it was 32.6% and in 2020/2021 it was 29.2%.

In 2022/23, the Canadian c-section rate was 34.0% which is higher than the New Brunswick rate of 32.6%[1]. There are multiple factors that contribute to the C-section rate. Emerging discussions suggest the use of this metric to inform staffing and resource needs, rather than an indicator of quality. The Society of Obstetrics and Gynaecology recommends using The Robson Criteria to classify C-sections at the level of institutions to identify trends, evaluate quality initiatives, and inform resource allocation[2].

Definition

Number of C-section deliveries performed at each birthing hospital / Total number of deliveries performed at each birthing hospital.

Data Source

3M Health Data Management System, Horizon Health Network and Réseau de santé Vitalité, 2018-2023. Data extracted October 27th, 2023.

References:

1. OBS Delivered by C-Section, CIHI Portal (DAD). Data Extracted: December 11, 2023.
2. Technical Update No. 436: Classification of Cesarian Deliveries in Canada: The Modified Robson Criteria. J Obstet Gynaecol Can 2023; 45(5):338-341.

Table 2.1: Percent of deliveries by C-section, by birthing hospital, New Brunswick, 2018/19 to 2022/23

Birthing Facility	C-Section Rate				
	2018/19	2019/20	2020/21	2021/22	2022/23
Campbellton Regional Hospital	32.9%	29.0%	NR	-	-
Chaleur Regional Hospital	33.8%	32.5%	27.3%	26.9%	32.2%
Dr. Everett Chalmers Regional Hospital	32.4%	33.2%	37.7%	35.4%	39.7%
Dr. Georges-L.-Dumont University Hospital Centre	31.4%	29.8%	32.0%	32.5%	33.1%
Edmundston Regional Hospital	28.0%	29.1%	33.9%	28.7%	37.2%
Miramichi Regional Hospital	34.2%	34.0%	30.9%	33.9%	33.2%
The Moncton Hospital	31.8%	28.2%	29.1%	35.3%	36.9%
Saint John Regional Hospital	18.4%	22.1%	20.3%	24.1%	21.8%
Upper River Valley Hospital	26.0%	21.5%	23.2%	34.5%	30.3%

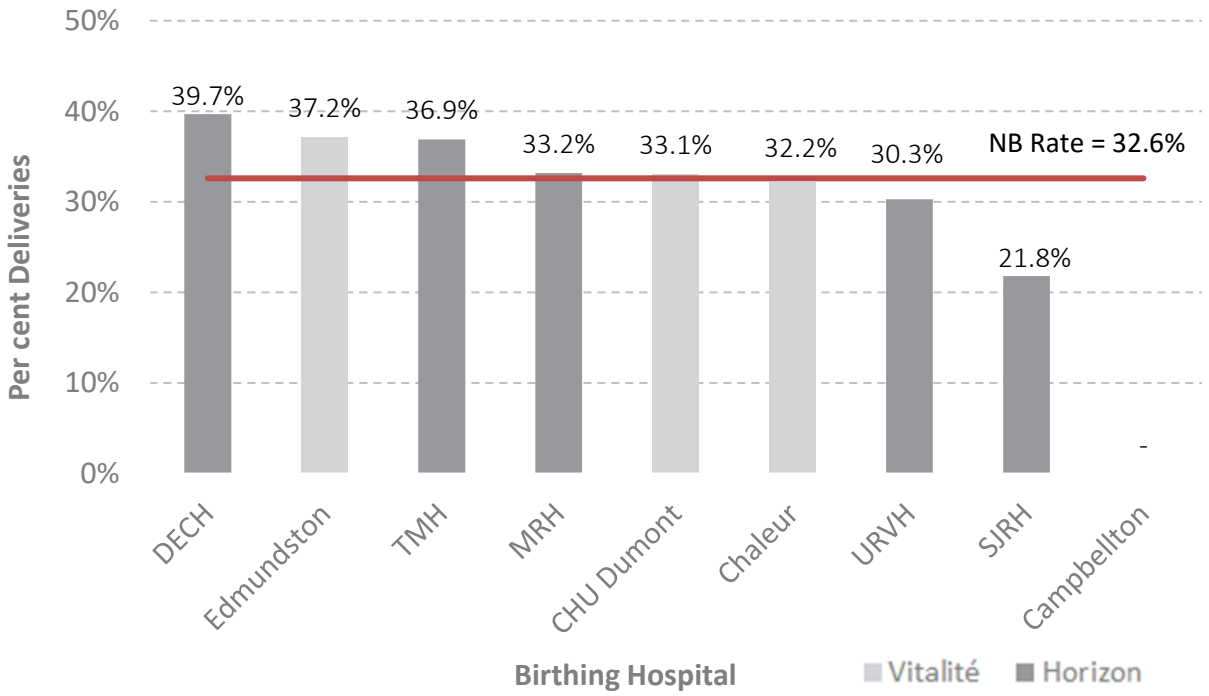

Figure 2.1: Per cent of deliveries by C-section, by birthing hospital, New Brunswick, 2022/23

Primary and Repeat C-Section Rate

The primary C-section rate is steadily increasing (23.7% in 2022/23), while the repeat C-section rate remains stable between 80.6% and 85.0%. Nationally, in 2021/22 the primary c-section rate was 21.9% and the repeat c-section rate is 83.2%[1].

Definition

Primary C-Section Rate: Number of primary C-sections / Number of deliveries to pregnant individuals who have not had a previous C-section.

Repeat C-section Rate: Number of repeat C-sections / Number of deliveries to pregnant individuals who have had at least one previous C-section.

Data Source

3M Health Data Management System, Horizon Health Network and Réseau de santé Vitalité, 2018-2023. Data extracted October 27th, 2023.

Reference

1. Hospitalization and Childbirth, 1995–1996 to 2021-2022 — Supplementary Statistics. Ottawa, ON: CIHI; 2023.

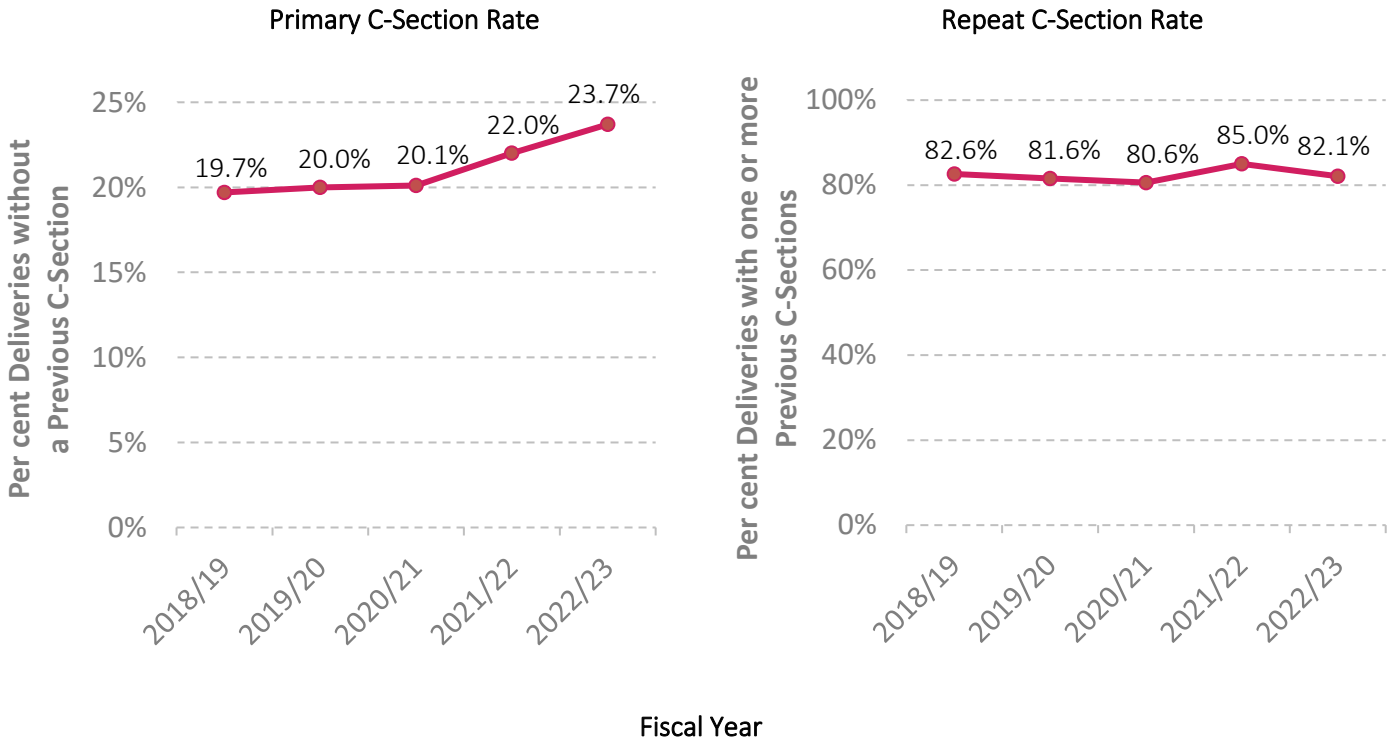

Figure 2.2: Percent of Primary and Repeat C-sections, New Brunswick, 2018/19 to 2022/23

Vaginal Birth after C-Section (VBAC)

The VBAC attempt rate has been stable over the past 5 years. In 2022/23 it was 21.6%. The VBAC success rate is also stable at approximately 80%, with little variation from year to year: in 2022/23 it was 82.9%.

The SOGC recommends a trial of labor after caesarean (TOLAC) to persons who have undergone one previous C-section, provided there are no other obstetrical contraindications[1]. Such contraindications include but are not limited to the type of previous incision, prior major uterine surgery, and previous uterine rupture[1].

Definition

Attempted VBAC Rate: Number of attempted (failed or successful) VBAC deliveries / Number of deliveries with a previous C-section.

VBAC Success Rate: Number of VBAC deliveries / Number of attempted VBAC deliveries.

Data Source

3M Health Data Management System, Horizon Health Network and Réseau de santé Vitalité, 2018-2023. Data extracted October 27th, 2023.

Reference:

1. No. 382 – Trial of Labour After Caesarean. J Obstet Gynaecol Can 2019; 41(7):992-1011.

Table 2.2: VBAC attempt rate, and VBAC success rate, New Brunswick, 2018/19 to 2022/23

Measure	VBAC Deliveries				
	2018/19	2019/20	2020/21	2021/22	2022/23
VBAC Attempt Rate	21.2%	23.1%	23.9%	19.3%	21.6%
VBAC Success Rate	82.0%	79.6%	80.6%	77.7%	82.9%

Table 2.3: VBAC attempt rate, and VBAC success rate, by birthing hospital, New Brunswick, 2022/23

Birthing Facility	VBAC Attempt Rate	VBAC Success Rate
Campbellton Regional Hospital	-	-
Chaleur Regional Hospital	NR	NR
Dr. Everett Chalmers Regional Hospital	14.2%	91.2%
Dr. Georges-L. Dumont University Centre Hospital	20.2%	68.2%
Edmundston Regional Hospital	17.0%	NR
Miramichi Regional Hospital	18.6%	78.4%
The Moncton Hospital	23.1%	78.4%
Saint John Regional Hospital	38.0%	86.8%
Upper River Valley Hospital	NR	NR

Induction Rate

The Induction rate across New Brunswick had a small increase between 2018/19 and 2020/21, before stabilising in the last two years around 37%.

Currently, work is being done to accurately capture reasons for induction. This will differentiate indications per SOGC guidelines for high priority, and other indications[1]. While the guideline does not give an exhaustive list of indications, it presents a guide of what may be considered high priority or otherwise.

Definition

Number of pregnant individuals who are induced for delivery / Total number of deliveries.

Data Source

3M Health Data Management System, Horizon Health Network and Réseau de santé Vitalité, 2018-2023. Data extracted October 27th, 2023.

References

1. Guidelines No. 432a: Cervical Ripening and Induction of Labour – General Information. J Obstet Gynaecol Can 2023;45(1): 35-44.

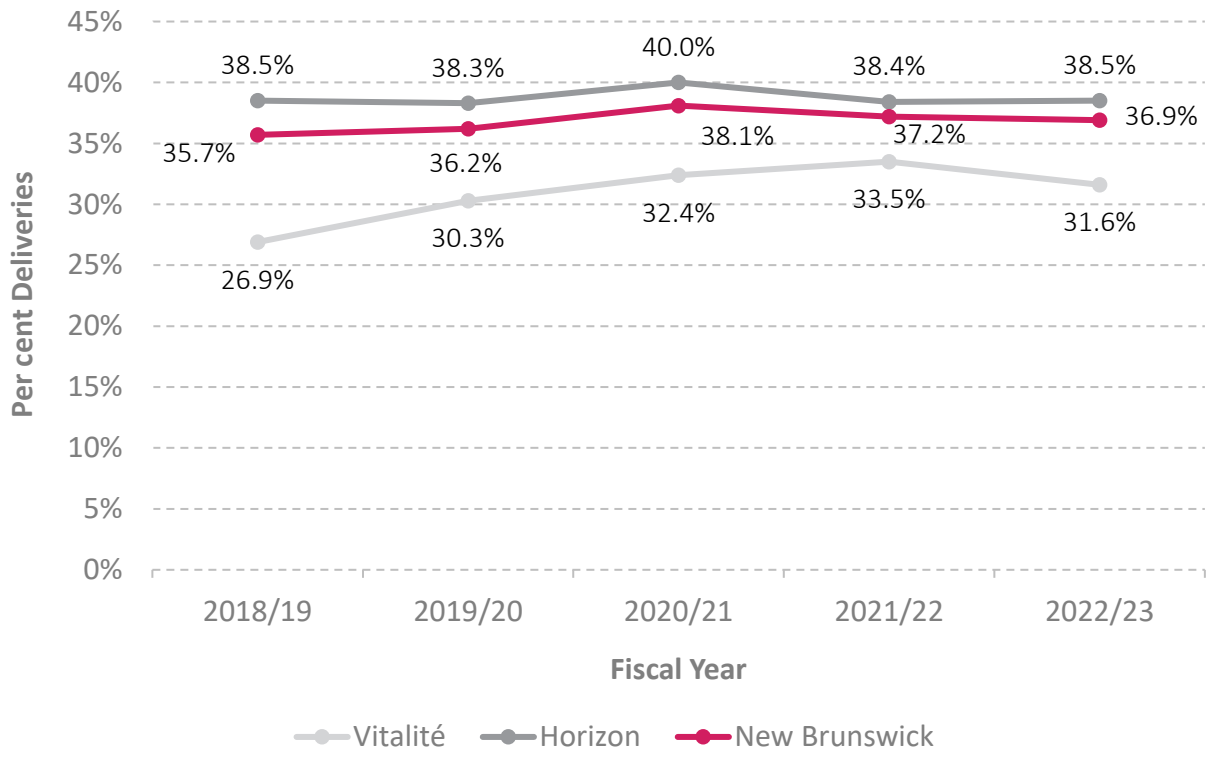

Figure 2.3: Rate of induction for delivery, by location, 2018/19 to 2022/23

Induction Rate by Birthing Hospital

Table 2.4: Induction rate, by birthing hospital, 2018/19 to 2022/23

Birthing Facility	Induction Rate				
	2018/19	2019/20	2020/21	2021/22	2022/23
Campbellton Regional Hospital	20.9%	23..5%	0.0%	-	-
Chaleur Regional Hospital	29.5%	36.0%	33.2%	32.9%	36.0%
Dr. Everett Chalmers Regional Hospital	44.1%	43.1%	46.3%	44.3%	38.9%
Dr. Georges-L.-Dumont University Hospital Centre	29.9%	29.7%	34.7%	34.2%	32.2%
Edmundston Regional Hospital	22.2%	27.7%	26.7%	33.0%	23.6%
Miramichi Regional Hospital	44.6%	41.8%	34.6%	27.6%	32.4%
The Moncton Hospital	32.8%	33.4%	37.2%	36.8%	39.5%
Saint John Regional Hospital	37.9%	38.1%	40.1%	38.1%	41.7%
Upper River Valley Hospital	28.5%	29.5%	24.4%	31.7%	25.5%

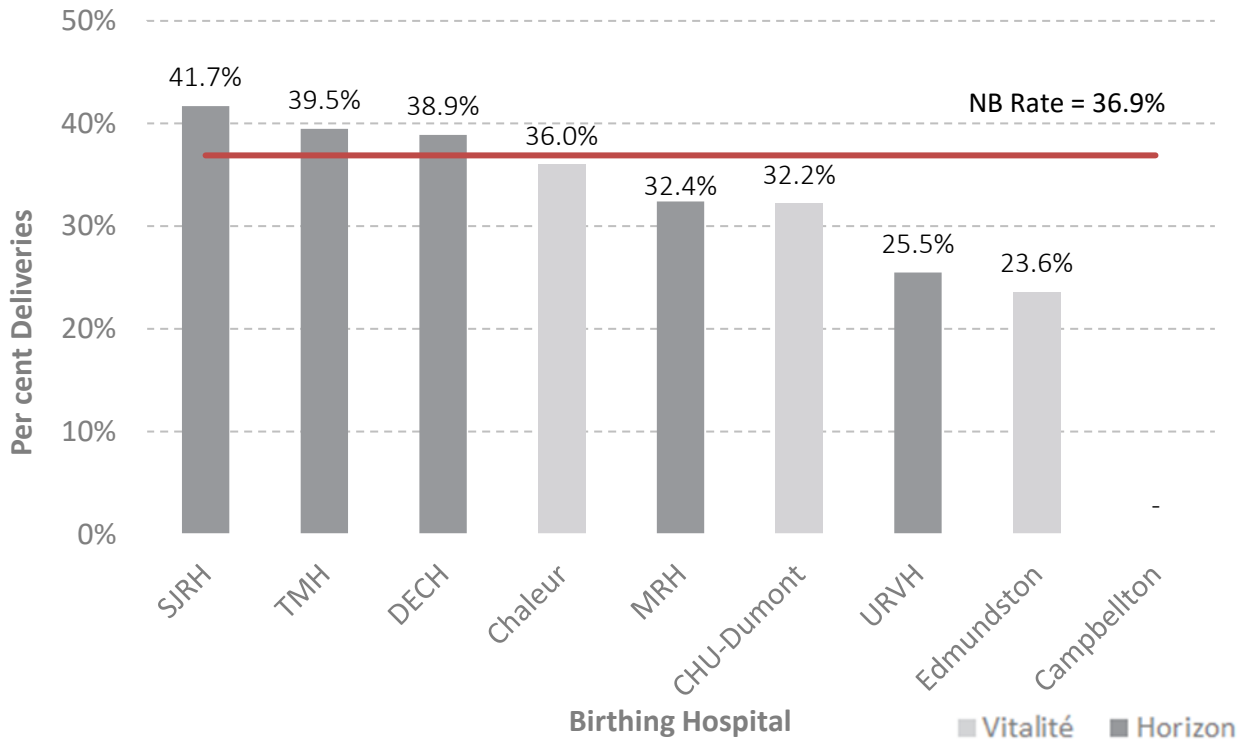

Figure 2.4: Induction rate, by birthing hospital, 2022/23

Chapter 3 Newborn Health

Total Births

The number of live births has remained steady at just over 6000, between 2018/19 and 2022/23. The number of stillbirths has fluctuated over the five-year period. A stillbirth refers to an infant born at 20 weeks or greater without signs of life. Note, these numbers include stillbirths and livebirths that resulted from an interruption of pregnancy.

The potential increasing trend in stillbirths, and interruptions of pregnancies after 20 weeks will continue to be monitored closely.

Definition

The total number of live births and stillbirths in New Brunswick.

Data Source

3M Health Data Management System, Horizon Health Network and Réseau de santé Vitalité, 2018-2023. Data extracted October 27th, 2023.

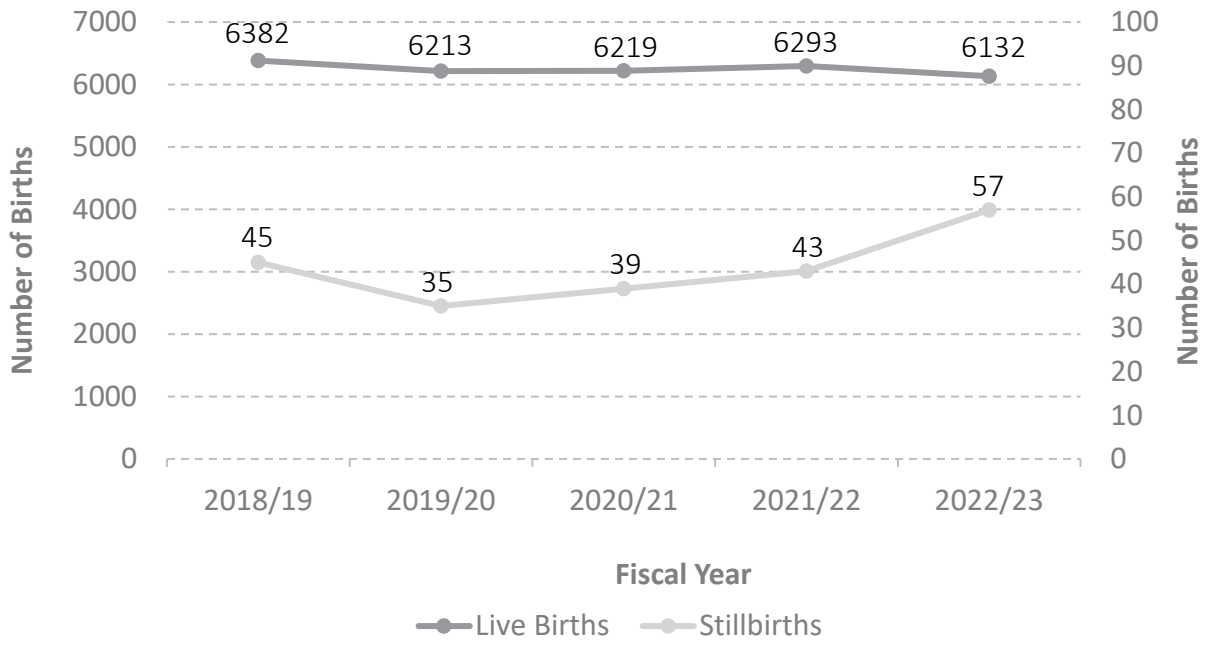

Figure 3.1: Total number of live births and stillbirths, New Brunswick, 2018/19 to 2022/23

Multiple Births

The rate of multiple births has remained steady over the 5 years between 2018/19 and 2022/23. Multiple births are associated with an increased risk of antepartum, and intrapartum complications that may require a higher level of care[1]. These complications include pre-term labour and birth, fetal growth abnormalities and maternal complications[1]. Horizon Health Network has a slightly higher rate of multiples as all three NICUs are in Horizon facilities.

Definition

The number of deliveries with twins or higher / Total number of deliveries

Data Source

3M Health Data Management System, Horizon Health Network and Réseau de santé Vitalité, 2018-2023. Data extracted October 27th, 2023.

Reference

1. Guideline No. 428: Management of Dichorionic Twin Pregnancies. J Obstet Gynaecol Can 2022; 44(7):819-834.

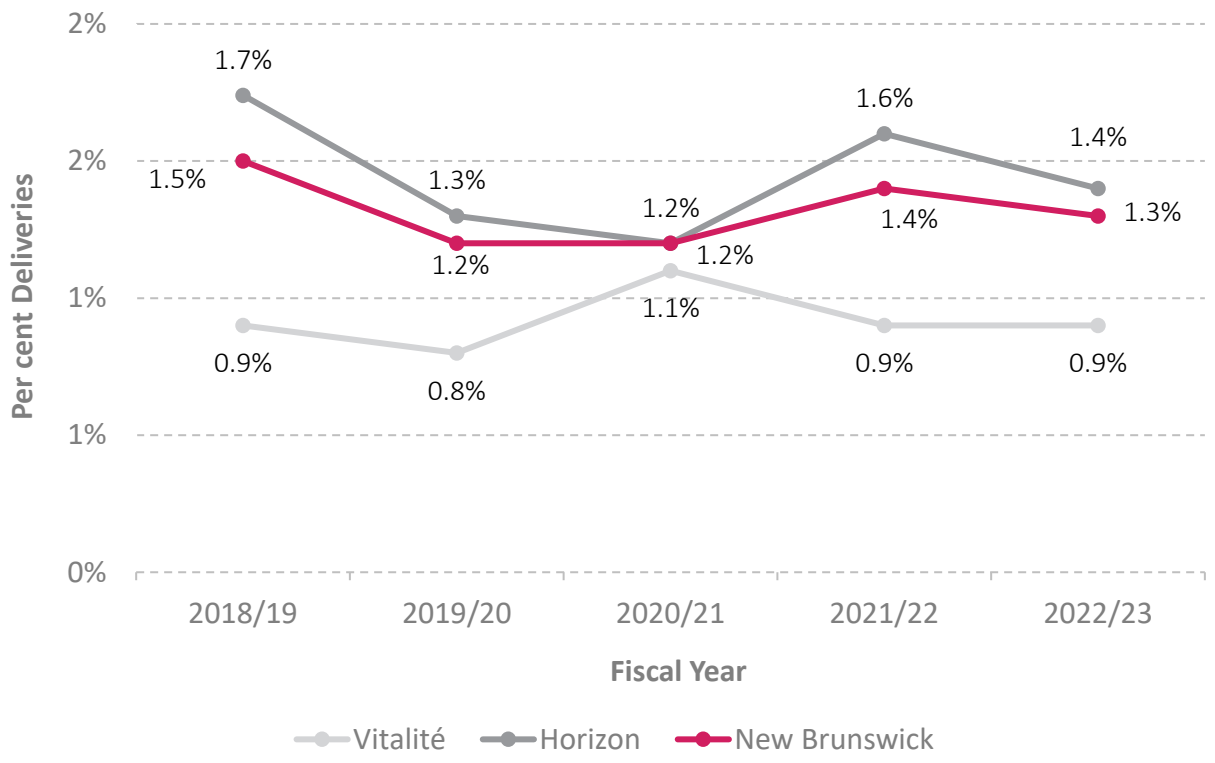

Figure 3.2: Rate of multiple births, by location, 2018/19 to 2022/23

Pre-Term Birth Rate

The pre-term birth rate has remained stable over the past five years, ranging from 7.5% in 2019/20 and a high of 8.5% in 2022/23. The provincial rate is similar to the national rate in 2021/22 of 8.5%[1].

Definition

Number of live births that were born pre-term (prior to 32 and 37 weeks gestation) / Total number of live births.

Data Source

3M Health Data Management System, Horizon Health Network and Réseau de santé Vitalité, 2018-2023. Data extracted October 27th, 2023.

Reference

1. Canadian Institute for Health Information. Hospitalization and Childbirth, 1995–1996 to 2021–2022 — Supplementary Statistics. Ottawa, ON: CIHI; 2023.

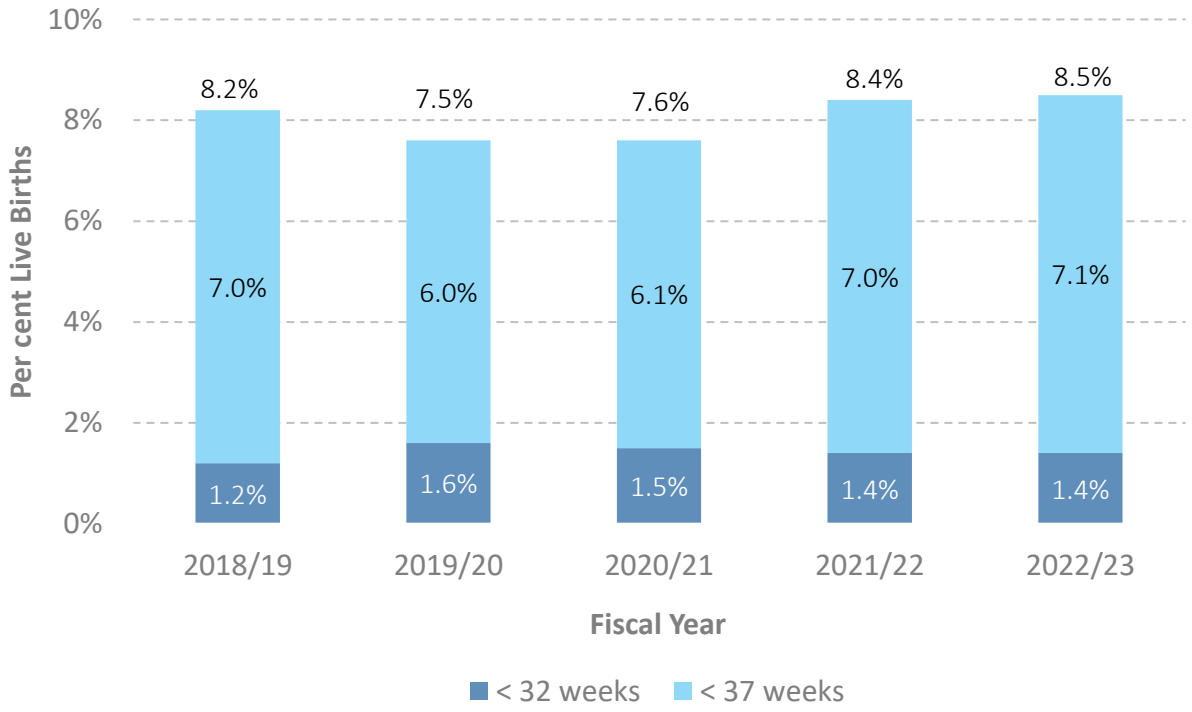

Figure 3.3: Per cent of babies born prior to 32 weeks gestation and 37 weeks gestation, New Brunswick, 2018/19 to 2022/23

Birth Weight Percentile for Gestational Age

The rates of large-for-gestational age newborns in New Brunswick have remained steady over the last five years. Any infant born in the 90th percentile is considered large for gestational age, with a rate of 10.7% this indicates that babies born in New Brunswick are not larger than in an average population. In fact, in 2017, the national rate for large for gestational age was 10.1%[1].

Definition

Number of births in the 3rd, 10th, 90th, and 97th percentiles for sex and birth weight (according to the Canadian Perinatal Surveillance System Birth Weight growth chart[2]) / Total number of live births.

Data Source

3M Health Data Management System, Horizon Health Network and Réseau de santé Vitalité, 2018-2023. Data extracted October 27th, 2023.

References

1. Centre for Surveillance and Applied Research, Public Health Agency of Canada. Perinatal Health Indicators Data Tool, 2020 Edition. Public Health Infobase. Ottawa (ON): Public Health Agency of Canada, 2020
2. Public Health Agency of Canada, 2001. *Birth Weight for Gestational Age.* Retrieved from http://www.phac-aspc.gc.ca/rhs-ssg/bwga-pnag/pdf/bwga-pnag_e.pdf (accessed September 29th, 2016.).

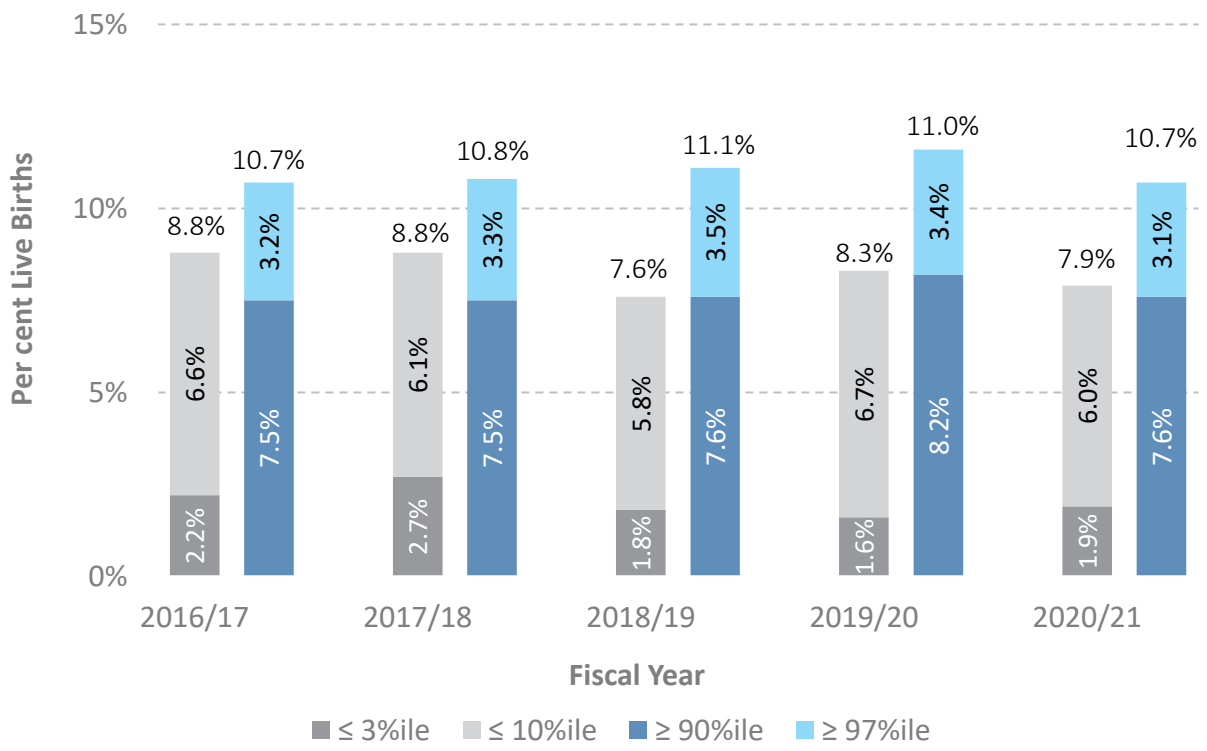

Figure 3.4: Size percentile for gestational age at time of delivery, New Brunswick, 2018/19 to 2022/23

Primary SCU/NICU Admission by Regional Health Authority

The primary SCU/NICU admission rate in New Brunswick has decreased in the last five years from a high of 27.2% in 2018/19 down to 17.1% in 2022/23. This rate is slightly lower than the national rate of 17.7%.

The number of SCU/NICU admissions was counted differently at the provincial, RHA and hospital level. The provincial rate counted each infant as one SCU/NICU admission regardless of the number of transfers and is therefore the true rate of SCU/NICU admissions per live births in New Brunswick. At the RHA level, SCU/NICU admissions were counted only once if the infant was transferred within the same RHA, however they were counted once per RHA if they were transferred between Horizon and Vitalité.

Definition

Number of neonates with at least one SCU/NICU admission / Total number of neonates. This includes all hospital births and neonatal readmissions with 28 days of birth.

Data Source

3M Health Data Management System, Horizon Health Network and Réseau de santé Vitalité, 2018-2023. Data extracted October 27th, 2023.

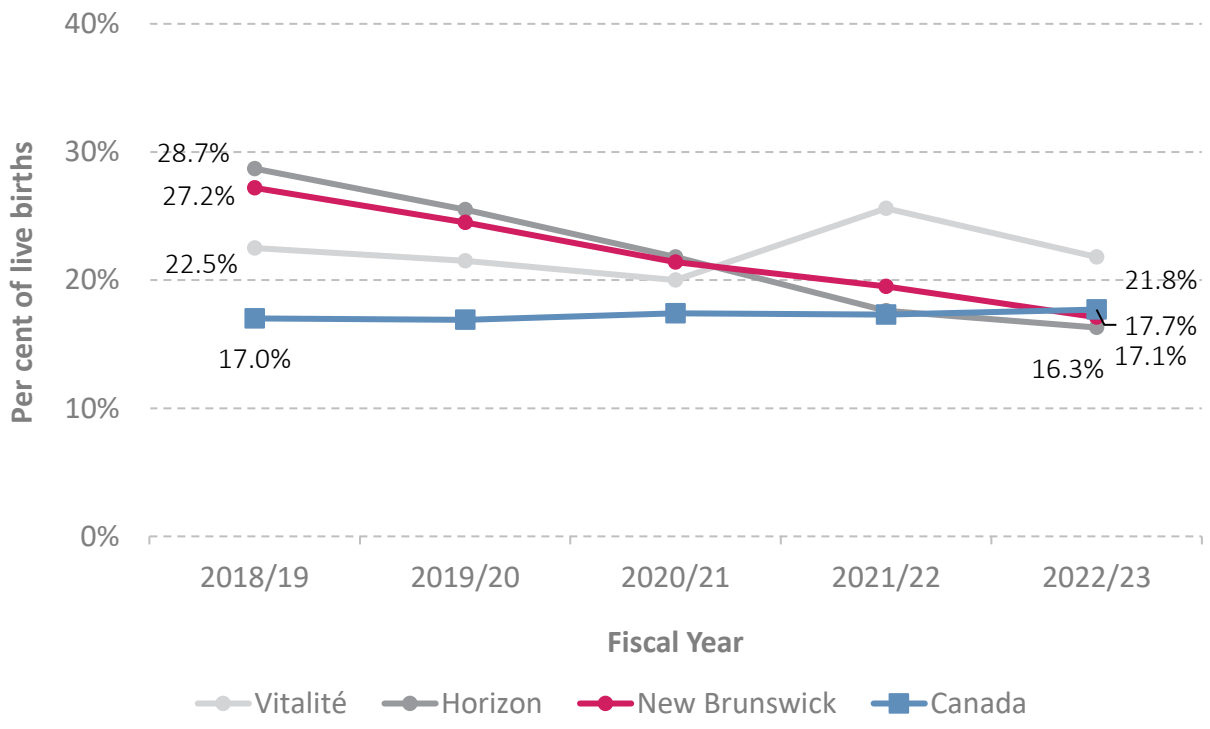

Figure 3.5: Per cent of neonates admitted to SCU/NICU, by location, New Brunswick and Canada, 2018/19 to 2022/23

Primary SCU/NICU Admissions by Birthing Hospital

SCU/NICU admissions were counted once per hospital, even if a transfer occurred. The facilities are grouped based on the level of care that they can provide. Of note, Upper River Valley Hospital does not have a Special Care Unit. Also, the Campbellton Regional Hospital has only had a few deliveries since the start of 2020/21 as their Labour and Delivery Unit has been closed.

Primary SCU/NICU admission rates vary greatly across New Brunswick. Within the Level 3 facilities, Dr. Everett Chalmers Regional Hospital has the highest rate at 29.4% and Saint John Regional Hospital has the lowest rate at 11.1%. Within the Level 2 facilities, Chaleur Regional Hospital has the highest rate at 30.9%, while Miramichi Regional Hospital has the lowest rate at 6.1%.

Definition

Number of neonates with at least one SCU/NICU admission / Total number of neonates.

Data Source

3M Health Data Management System, Horizon Health Network and Réseau de santé Vitalité, 2018-2023. Data extracted October 27th, 2023.

Table 3.1: Per cent of neonates admitted to SCU/NICU, by birthing hospital, New Brunswick, 2018/19 to 2022/23

Birthing Facility	Primary Special Care Nursery/NICU Admission				
	2018/19	2019/20	2020/21	2021/22	2022/23
Level 3					
Dr. Everett Chalmers Regional Hospital	39.7%	36.9%	37.3%	26.8%	29.4%
The Moncton Hospital	26.0%	20.0%	15.9%	15.4%	15.4%
Saint John Regional Hospital	31.8%	26.7%	17.5%	14.6%	11.1%
Level 2					
Campbellton Regional Hospital	21.9%	18.3%	NR	-	-
Chaleur Regional Hospital	46.7%	41.0%	32.3%	34.0%	30.9%
Dr. Georges-L.-Dumont University Hospital Centre	14.1%	14.7%	14.4%	26.2%	19.4%
Edmundston Regional Hospital	17.4%	12.6%	14.9%	10.8%	12.9%
Miramichi Regional Hospital	5.1%	12.4%	11.5%	9.9%	6.1%

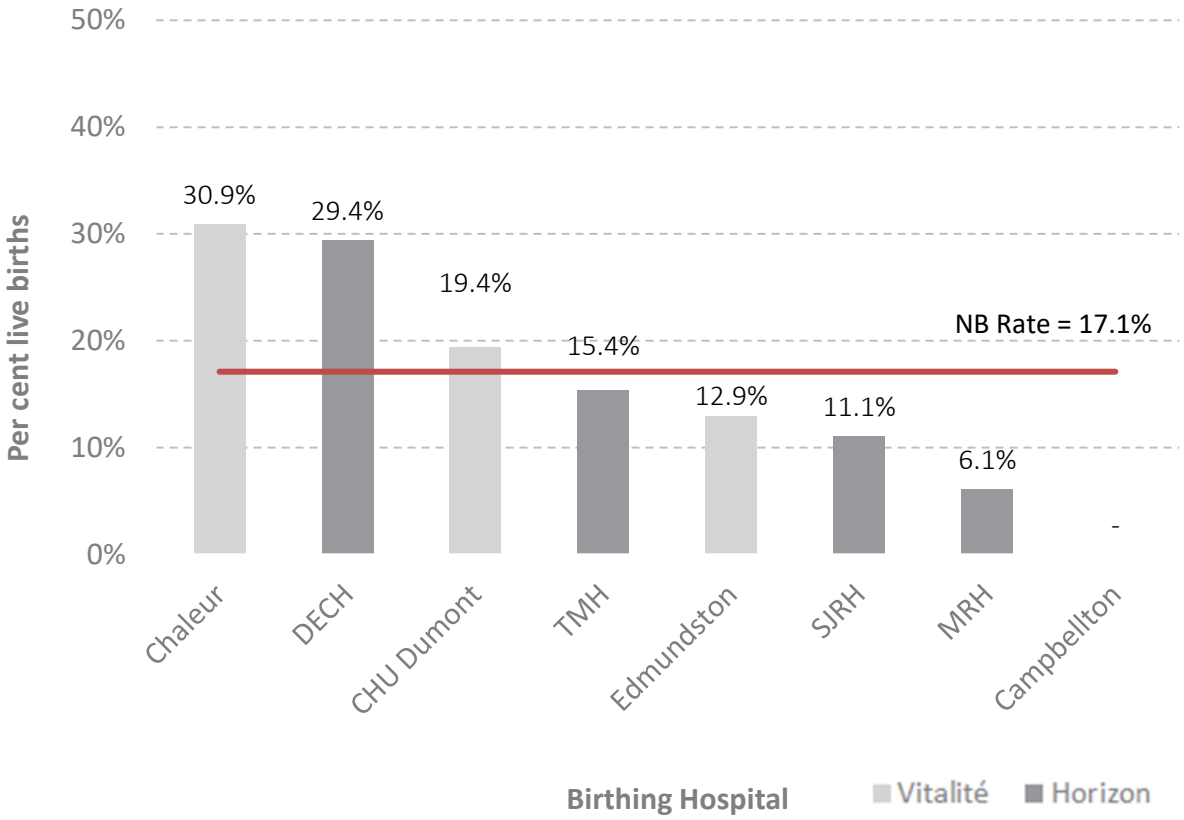

Figure 3.6: Per cent of neonates admitted to SCU/NICU, by birthing hospital, New Brunswick, 2022/23

Term and Pre-term Newborns in NICU/SCU Admissions

In 2022/23, 64.5% of all SCU/NICU admissions were term infants, this is a decrease from 2018/19 when 75.0% of all SCU/NICU admissions were term infants.

Definition

Number of pre-term or term infants equal or less than 28 days of age with at least one SCU/NICU admission / Total number of SCU/NICU admissions.

Data Source

3M Health Data Management System, Horizon Health Network and Réseau de santé Vitalité, 2018-2023. Data extracted October 27th, 2023.

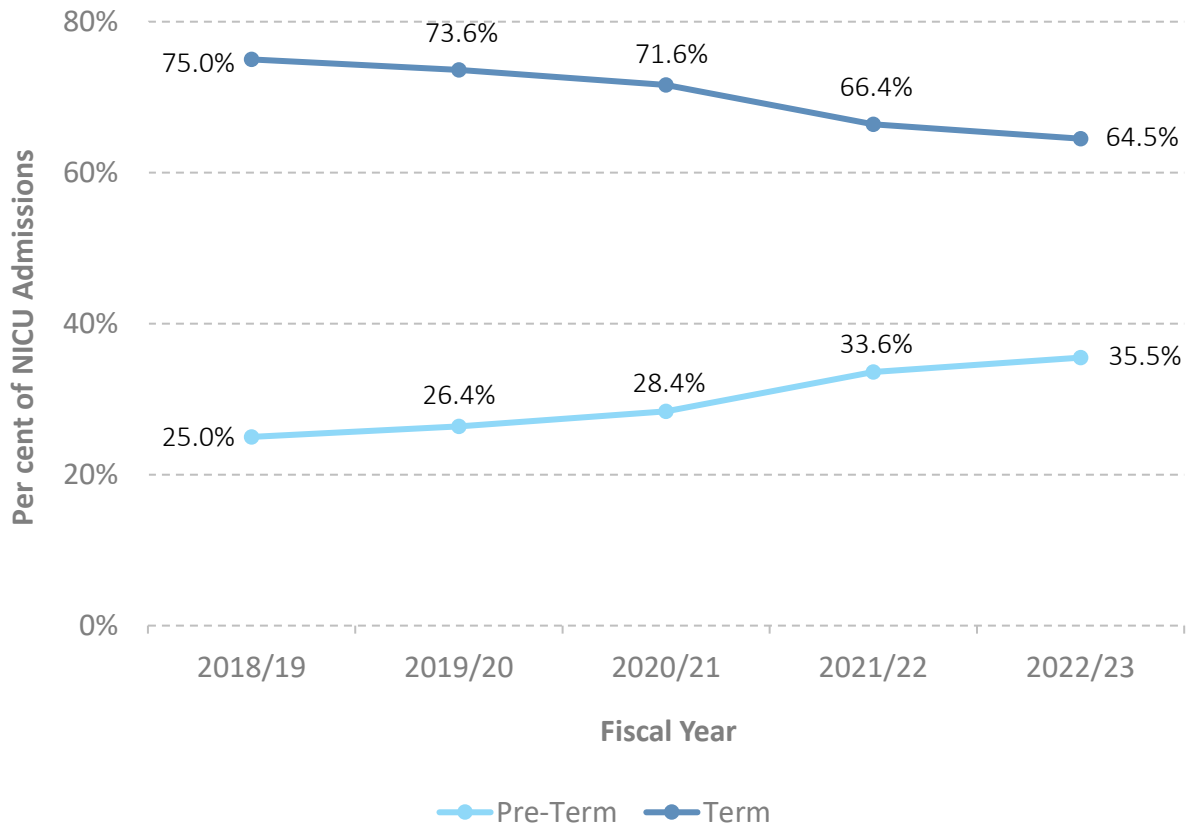

Figure 3.7: Per cent of NICU/SCU admissions, by gestational age, New Brunswick, 2018/19 to 2022/23

Neonatal Mortality Rate

Rates of neonatal mortality have remained steady between 0.12% to 0.32% over the past five years. Note this rate includes the deaths of live-born infants following an interruption of pregnancy for congenital anomalies where they provided palliative care to the infant after delivery.

These rates include only infant deaths that occur during a New Brunswick hospital admission within the first 28 days of life. Specifically, infants born out of province due to higher medical/surgical care needs not offered in a New Brunswick facility are not captured.

Definition

Number of neonates who died / Total number of neonates. This includes all hospital births and any admissions to pediatrics, an SCU or a NICU.

Data Source

3M Health Data Management System, Horizon Health Network and Réseau de santé Vitalité, 2018-2023. Data extracted October 27th, 2023.

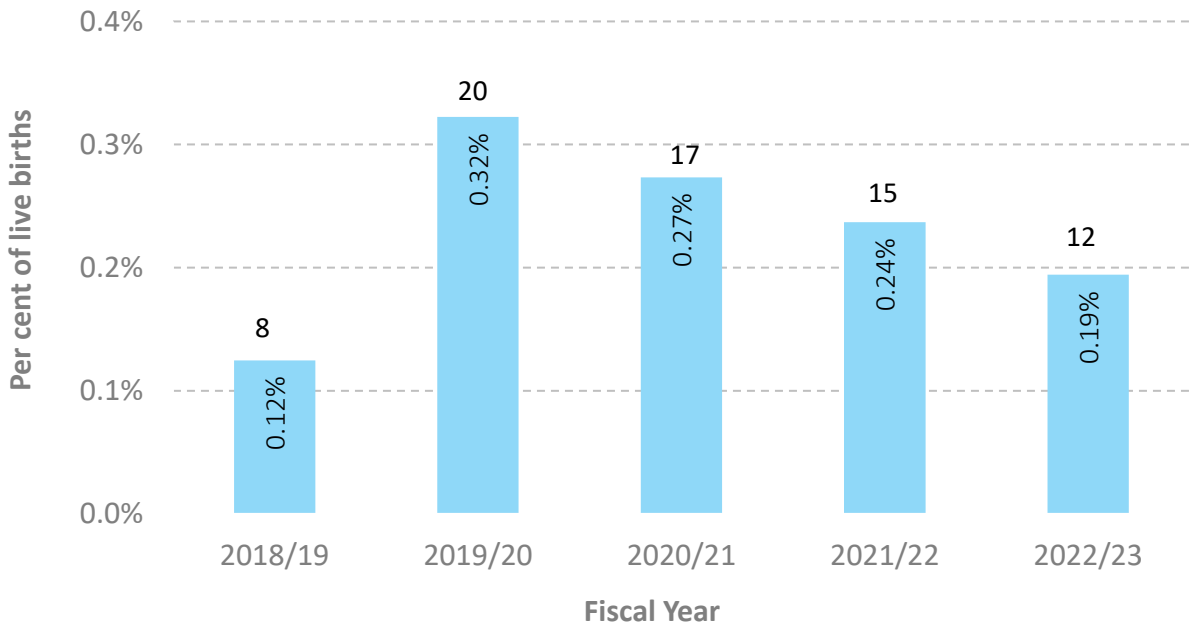

Figure 3.8: Number and per cent of neonatal deaths at 28 days of age or less, New Brunswick, 2018/19 to 2022/23

Exclusive Breastfeeding Rate at Discharge

The government of New Brunswick has adopted the Baby-Friendly Initiative as a strategy to protect, promote and support breastfeeding. Each birthing hospital is striving to become BFI accredited through the Breastfeeding Committee of Canada (BCC). One of the criteria as per the BCC is an exclusive breastfeeding rate at hospital discharge of 75% or more.

The rates of exclusive breastfeeding at hospital discharge have increased in some facilities, whereas it has decreased or remained steady at others. The facilities with the greatest increases in 2022/23 were Chaleur Regional Hospital and Dr. Everett Chalmers Regional Hospital. All others have seen a decrease or variability in exclusive breastfeeding rates between 2018/19 and 2022/23.

Definition

Number of infants that were exclusively breastfed or were supplemented for a medical reason at time of discharge / Total number of live births.

Data Source

3M Health Data Management System, Horizon Health Network and Réseau de santé Vitalité, 2018-2023. Data extracted October 27th, 2023.

Table 3.2: Per cent of babies that were exclusively breastfed at time of discharge or were supplemented for a medical reason, by birthing hospital, New Brunswick, 2018/19 to 2022/23

Birthing Facility	Exclusive Breastfeeding Rate				
	2018/19	2019/20	2020/21	2021/22	2022/23
Campbellton Regional Hospital	52.3%	59.5%	NR	-	-
Chaleur Regional Hospital	57.0%	56.0%	56.0%	60.9%	60.5%
Dr. Everett Chalmers Regional Hospital	44.7%	44.0%	40.9%	37.7%	53.9%
Dr. Georges-L.-Dumont University Hospital Centre	64.8%	59.6%	57.3%	46.9%	48.4%
Edmundston Regional Hospital	56.2%	54.7%	55.8%	52.5%	52.1%
Miramichi Regional Hospital	52.9%	52.8%	45.3%	53.0%	55.6%
The Moncton Hospital	60.1%	57.7%	56.8%	54.6%	53.9%
Saint John Regional Hospital	46.8%	43.6%	43.9%	43.9%	50.9%
Upper River Valley Hospital	54.2%	71.0%	67.3%	64.1%	54.4%

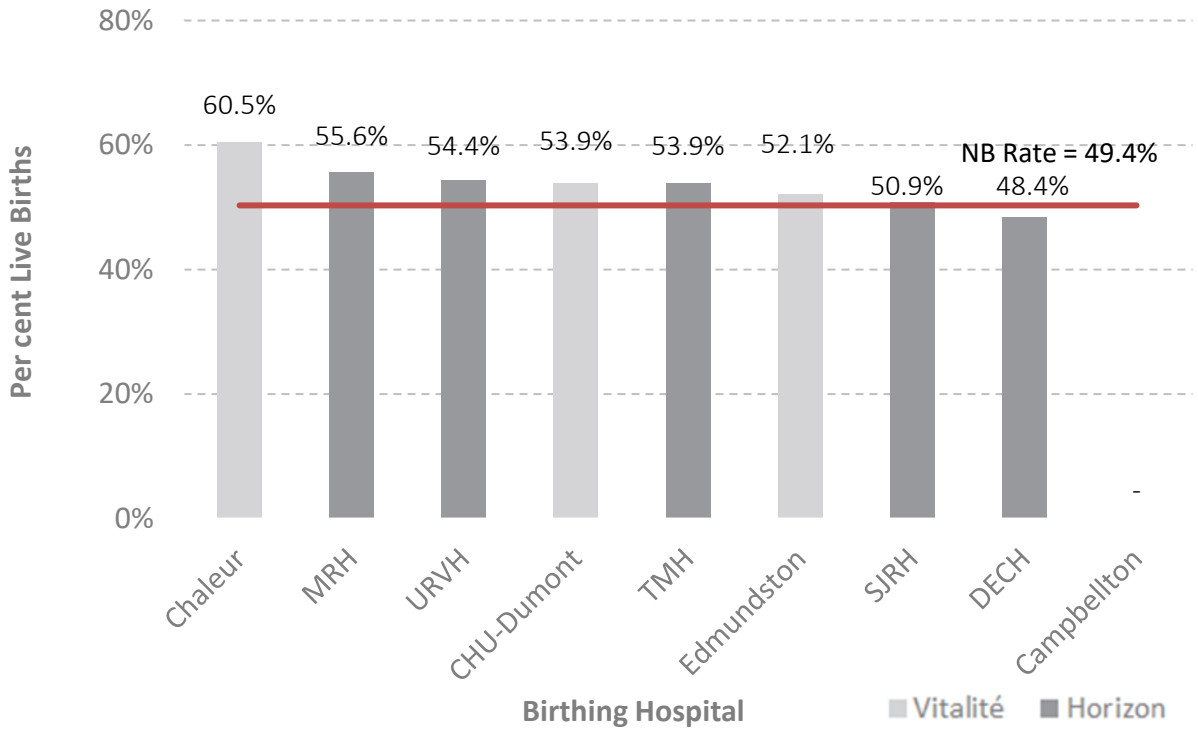

Figure 3.9: Per cent of babies that were exclusively breastfed at time of discharge or were supplemented for a medical reason, by birthing hospital, New Brunswick, 2022/23

Breastfeeding Initiation

Breastfeeding Initiation is another important criterion for obtaining BFI designation, with a rate of 80% required. Most facilities in New Brunswick have met or surpassed the required initiation rate in 2022/23, while all others are close to achieving this rate. Given this high rate of initiation, it would be expected that more pregnant individuals would exclusively breastfeeding at hospital discharge, but as seen above this is not the case.

Definition

Number of infants that attempted breastfeeding / Total number of live births.

Data Source

3M Health Data Management System, Horizon Health Network and Réseau de santé Vitalité, 2018-2023. Data extracted October 27th, 2023.

Table 3.3: Per cent of babies that attempted breastfeeding, by birthing hospital, New Brunswick, 2018/19 to 2022/23

Birthing Facility	Breastfeeding Initiation Rate				
	2018/19	2019/20	2020/21	2021/22	2022/23
Campbellton Regional Hospital	69.0%	72.4%	NR	-	-
Chaleur Regional Hospital	82.8%	80.0%	78.0%	80.6%	83.5%
Dr. Everett Chalmers Regional Hospital	81.0%	81.6%	82.1%	83.4%	83.2%
Dr. Georges-L.-Dumont University Hospital Centre	86.9%	82.6%	83.5%	87.2%	85.5%
Edmundston Regional Hospital	73.5%	71.6%	75.6%	78.1%	78.7%
Miramichi Regional Hospital	72.7%	74.2%	69.9%	74.4%	79.9%
The Moncton Hospital	85.1%	83.5%	85.4%	85.1%	85.8%
Saint John Regional Hospital	80.2%	78.1%	78.2%	78.4%	81.0%
Upper River Valley Hospital	64.7%	84.5%	86.9%	84.1%	77.2%

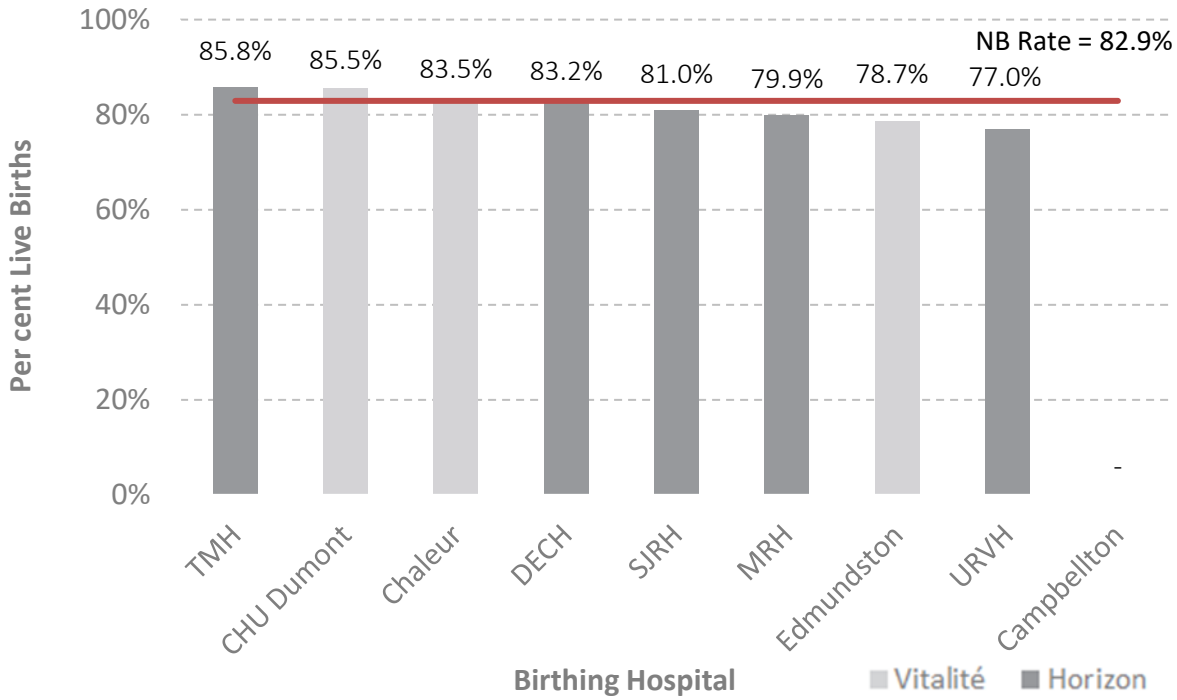

Figure 3.10: Per cent of babies that attempted breastfeeding, by birthing hospital, New Brunswick, 2022/23