

Healthy Moms and Infants

Selected Indicators

Fort Nelson
Local Health Area 081

March 2014



northern health
the northern way of caring

Table of Contents

What Determines Health	.....	3
Overview - Local Health Area 081	.....	4
Healthy Moms		
Data Tables and Indicator Descriptions	.....	5
Graphs	.....	6
Healthy Infants		
Data Tables and Indicator Descriptions	.....	8
Graphs	.....	9
Delivery Trends by Community		
Local Health Area	.....	11
Where Moms Delivered		
Delivery Locations in British Columbia	.....	13
Deliveries in Alberta	.....	13
Home Births	.....	13
Map of Local Health Area 081	.....	14
Map of Northern Rockies Regional District	.....	15
Map of Northern Rockies Regional Municipality	.....	16
Acknowledgements	.....	17
References	.....	18

What Determines Health?

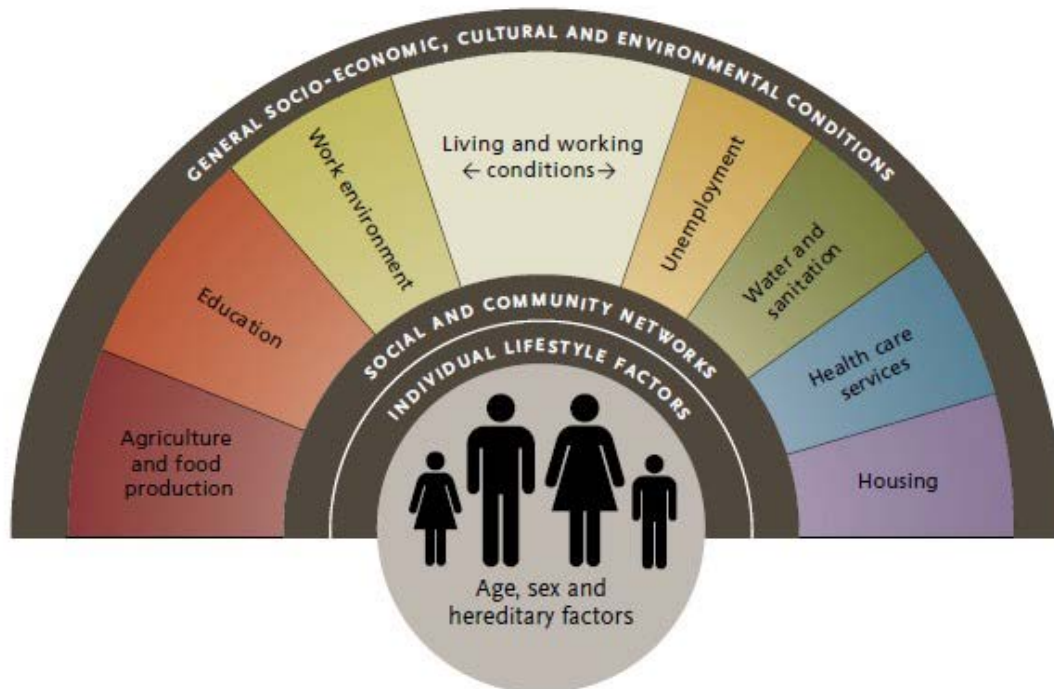


Figure: Health Council of Canada; Stepping it up to a Healthier Canada: 2010.

A good strong start in life; early and enriching experiences; educational opportunities; a sufficient and equitable distribution of employment, income, housing and food; water and sanitation; our interactions with the environment; our choices towards certain lifestyles and risks; our age and sex; genetics; as well as timely access to appropriate high quality health services are just some of the many factors that are known to influence our health.

Additional Information (the text below is hyperlinked)

- [World Health Organization: Social Determinants of Health](#)
- [Public Health Agency of Canada: Best Practices Portal](#)
- [Canadian Institute for Health Information: Factors Affecting Health](#)
- [Canadian Institute for Health Information: Health System Performance](#)
- [Health Council of Canada: Stepping it Up to a Healthier Canada.](#)
- [National Collaborating Centre for Aboriginal Health: Social Determinants of Health](#)
- [Northern Health: Community Health Information Portal](#)

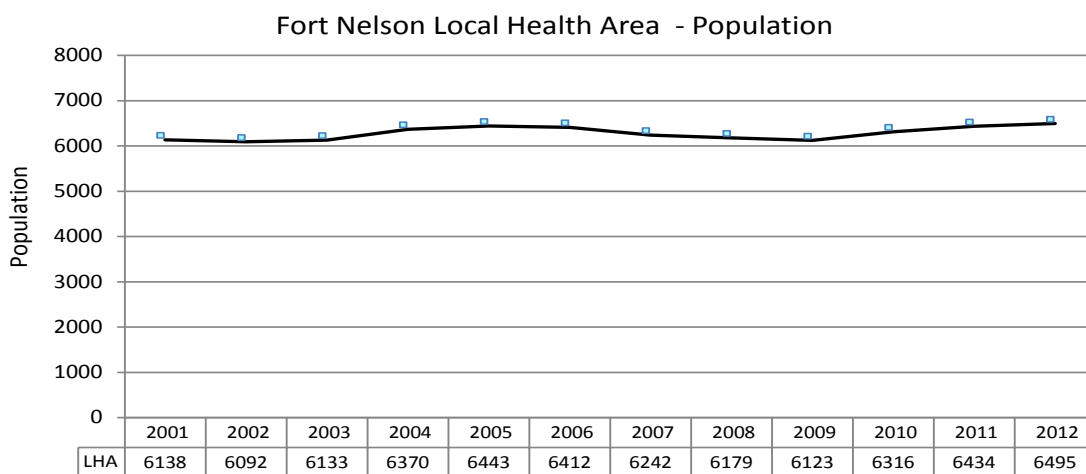
Overview

The Fort Nelson Local Health Area (LHA 081) is located in northeast BC and covers just over 98,327 square kilometers. It is home to approximately 6,495 people.¹

Several First Nations including the Fort Nelson First Nation, Prophet River First Nation, Kwadacha Nation and the Daylu Dene Council (Lower Post) call the Northeast home.^{2, 3}

During 2009, the Northern Rockies Regional Municipality (NRRM) was formed from an amalgamation of the Town of Fort Nelson with the surrounding areas. The recently formed NRRM is slightly smaller than the Fort Nelson LHA and it excludes the community of Lower-Post. The population in the NRRM accounts for 92 % of the Fort Nelson LHA population.^{4, 5} Towards the end of this profile are a number of maps that will clarify the different areas.

□



As shown above, the population of the Fort Nelson LHA has remained fairly stable over the past decade. The population is projected to rise to about 7,400 persons by 2030.⁶ The impact of industrial work camps (mostly oil and gas exploration) on the population remains uncertain.

Additional Information

Northern Rockies Regional Municipality <http://www.northernrockies.ca/>

Fort Nelson and District Chamber of Commerce <http://www.fortnelsonchamber.com/>

Fort Nelson First Nation <http://www.fnnation.org/>

Prophet River First Nation <http://www.treaty8.bc.ca/communities/prophet.php>

Daylu Dena Council <http://www.kaskadenacouncil.com/communities/lower-post>

Tourism, Northern Rockies: <http://www.tourismnorthernrockies.ca/>

BC Stats Community Fact Sheets <http://www.bcstats.gov.bc.ca/>

Community Health Information Portal <http://chip.northernhealth.ca>

Healthy Moms ⁷

During the 2008/09 - 2012/13 period (5 years) 431 mothers from the Fort Nelson Local Health Area (LHA) delivered 439 infants. Here is a health summary for these mothers.

Healthy Mom Indicators	Fort Nelson LHA		BC Overall	
	Number	%	Number	%
Total Number of Mothers	431	100	217,975	100
Caesarean Section Deliveries	152	35.27	67,170	30.82
Births to women ages \leq 19 yrs (teen moms)	43	9.98	6,422	2.95
Births to women ages $>$ 35 (elderly gravida)	40	9.28	49,809	22.85
Mothers who smoked during pregnancy	95	22.04	18,692	8.58

Caesarean Section Delivery – is a surgical procedure used to deliver a baby through incisions in the abdomen and the uterus. A care provider may recommend a caesarean birth to protect you or your baby if: your cervix does not open completely; labor is not progressing; the baby is too big to fit through your pelvis; the baby is in distress or in a difficult position; you have serious medical condition; or you have an active infection that makes vaginal birth unsafe for the baby. ⁸

A C-section delivery is a delivery option that some women and their physicians choose in advance of the delivery. As an elective procedure it can increase the risk to both mother and infant as it is an invasive surgical operation. There continues to be an active debate in the medical community regarding the appropriateness of many C-section deliveries given that in a large number of cases, a safer natural option exists: vaginal delivery.

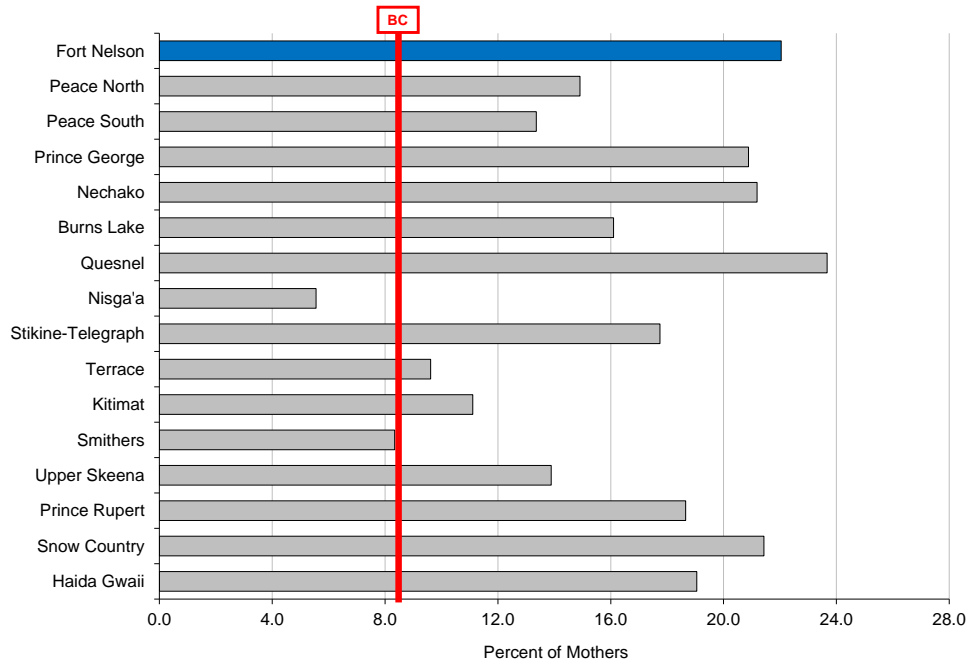
Births to Teen Moms This indicator can provide indirect information about the effectiveness of sexual health education, access to contraceptives and other services for this age group, as it is assumed that most pregnancies among teens are unintended. ⁹ Northern BC mothers have some of the highest teen pregnancy and teen birth rates in BC. ^{10, 11}

Births to Women over the age of 35 years – Women over 35 are considered to be of advanced childbearing age. These moms have an increased risk of having a baby with a disease or condition that is inherited as well as a greater chance of having complications during the pregnancy. Examples of such complications are diabetes, high blood pressure, an increased risk of caesarean birth and an increased risk of miscarriage. ¹²

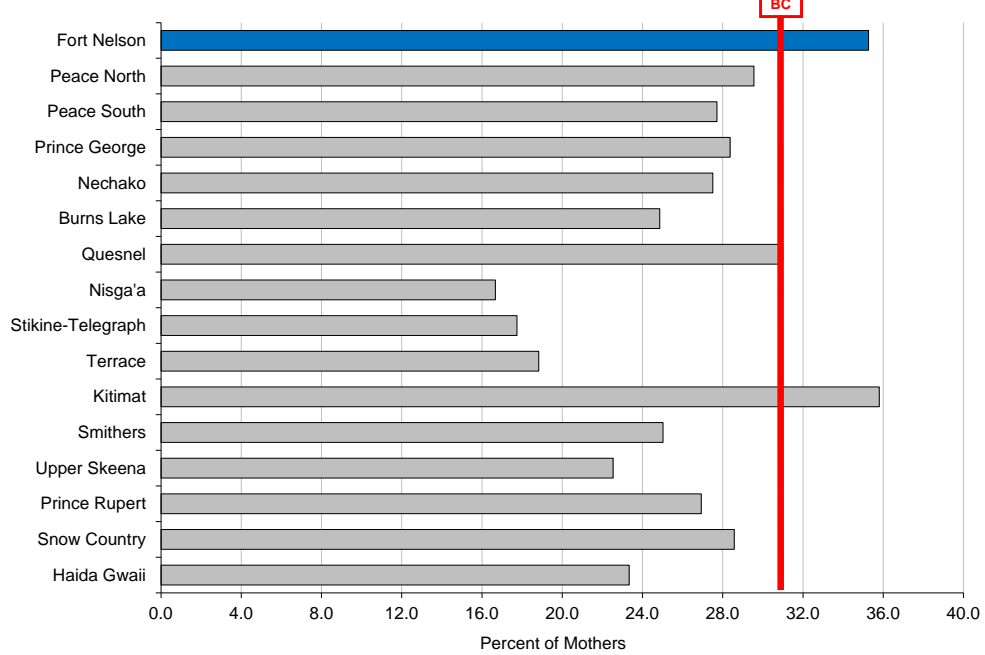
Mothers Who Smoke - Cigarette smoke contains over 4000 chemicals: many of which are very toxic and capable of crossing the placenta and entering a developing baby's blood-stream. ¹³ Exposure to the chemicals in tobacco smoke during pregnancy is associated with adverse outcomes including increased risk of preterm birth, stillbirth, low birth-weight, and placental abruption. ¹⁴ Mothers from Northern BC have the highest "smoking during pregnancy" rates in BC. ¹⁵ In addition, the proportion of mothers identified as smokers and, for whom drugs are a recognized risk factor, is highest amongst northern BC mothers. ¹⁶

Healthy Moms

Mothers who Smoked during Pregnancy by Local Health Area: 2008/09 - 2012/13



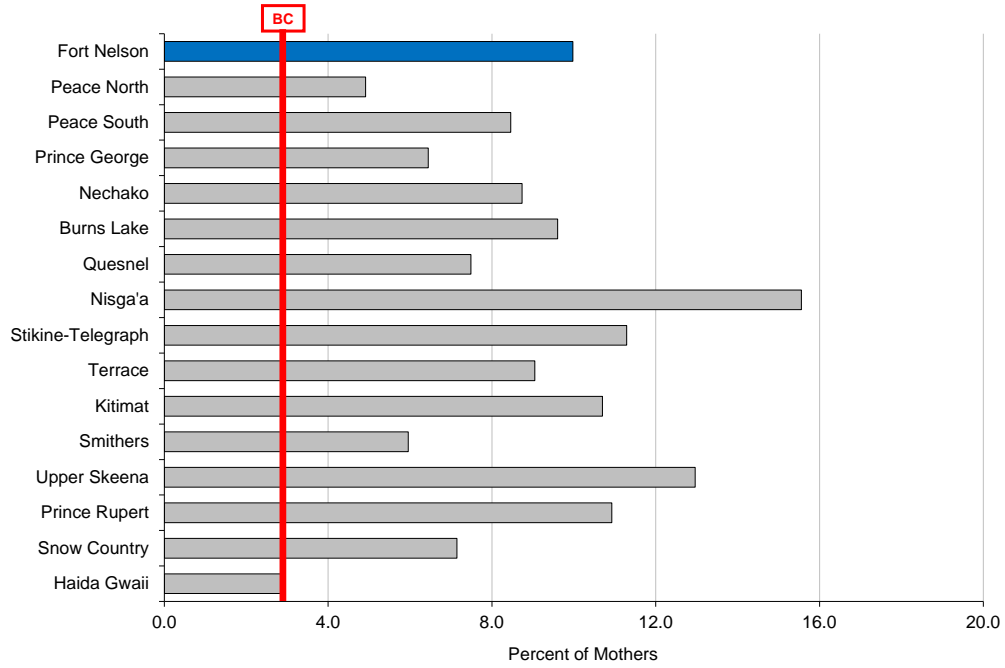
Caesarean Section Deliveries by Local Health Area: 2008/09 - 2012/13



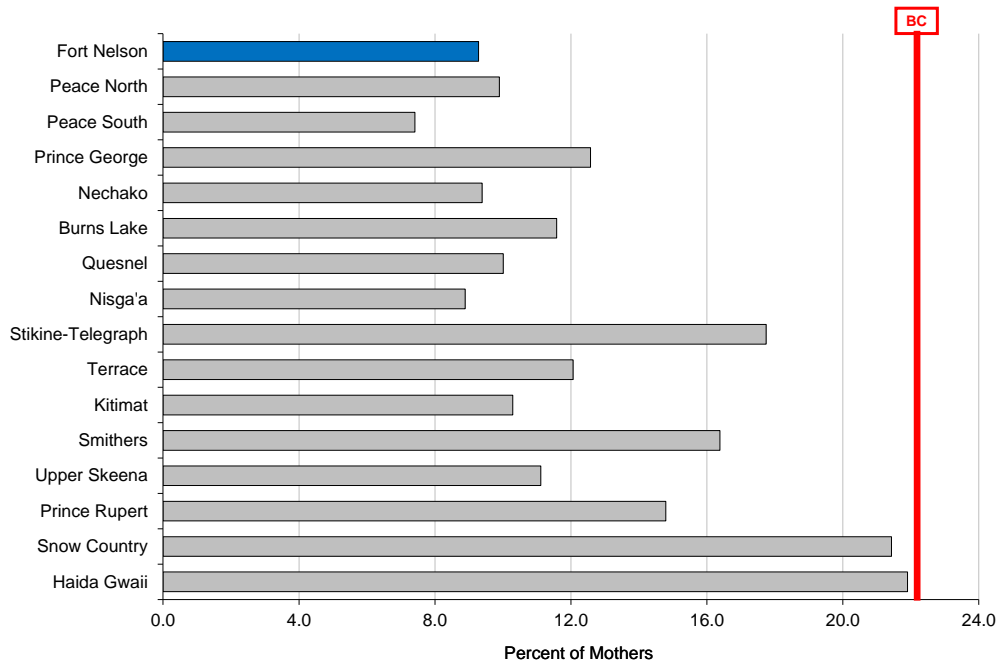
Due to a small number of occurrences, the data for Stikine-Telegraph and Snow Country LHAs should be interpreted with caution. These figures are based upon mom's usual place (Local Health Area) of residence, not the facility location where delivery occurred.

Healthy Moms

Teen Moms (births to mothers \leq 19 yrs) by Local Health Area: 2008/09 - 2012/13



Older Moms (births to mothers \geq 35 yrs) by Local Health Area: 2008/09 - 2012/13



Due to a small number of occurrences, the data for Stikine-Telegraph and Snow Country LHAs should be interpreted with caution. These figures are based upon mom's usual place (Local Health Area) of residence, not the facility location where delivery occurred.

Healthy Infants ¹⁷

During the 2008/09 - 2012/13 period (5 years) 431 mothers from the Fort Nelson Local Health Area (LHA) delivered 439 infants. Here is a health summary for these infants.

Healthy Infant Indicators	Fort Nelson LHA		BC Overall	
	Number	%	Number	%
Total Number of Newborns	439	100	221,526	100
Total Number of Live Births	435	99.09	220,532	99.55
Preterm Births (births before 37 weeks)	43	9.79	21,732	9.81
Low Birth-weight (< 2500 grams)	30	6.83	12,774	5.77
Small for Gestational Age (SGA)	26	5.92	15,089	6.81
High Birth-weight (> 4000 grams)	65	14.81	26,396	11.92
Large for Gestational Age (LGA)	67	15.26	27,897	12.59

Preterm Births are those births where the infant is delivered before 37 weeks gestation. ¹⁸ A preterm delivery is more likely if a woman has: already had a preterm baby; is carrying more than one baby; smokes or is exposed to smoke in pregnancy; does not eat a healthy diet; is using alcohol and/or drugs; works long hours causing fatigue; is physically or emotionally abused; living with a chronic illness, such as diabetes, high blood pressure, heart disease, or kidney disease; and, has a current bladder or kidney infection. ¹⁹

Preterm infants are a concern as these infants may have immature organ systems and other complications at the time of birth. The likelihood of these complications increases as the infants become increasingly premature. ²⁰

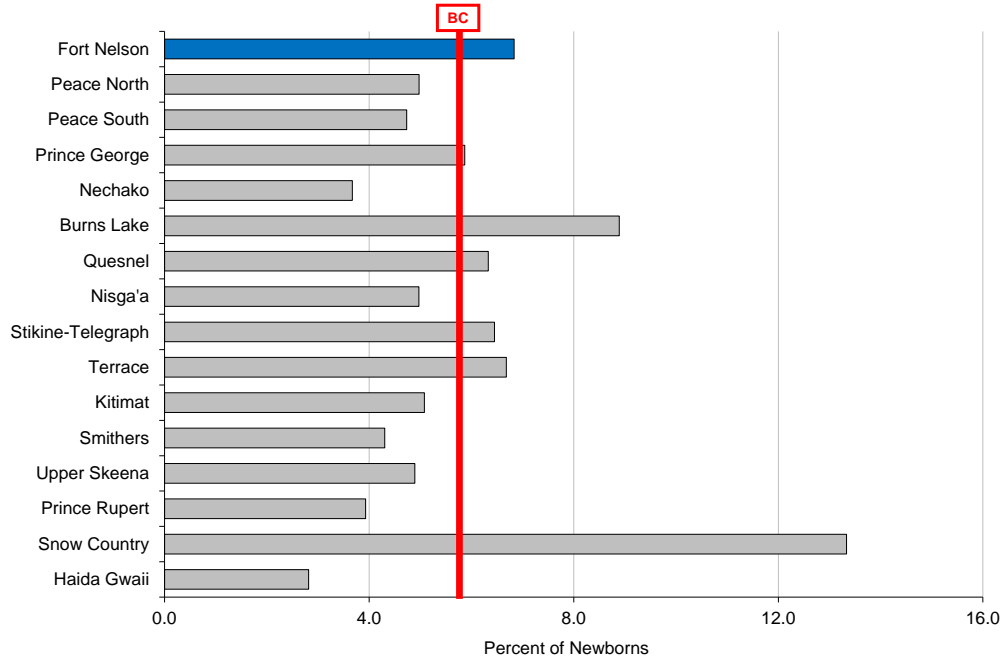
Low birth weight is now the principal risk factor associated with infant mortality, particularly between the ages of 28 to 365 days. Maternal factors that are associated with low birth weight include smoking, poor diet during pregnancy, low weight prior to pregnancy, poverty and pregnancy in very young or very old mothers. ²¹

High Birth-weight deliveries tend to have higher rates of complications due to diabetes, Cephalo-Pelvic Disproportion (CPD) and / or obstructed labor. Shoulder dystocia and asphyxia in the infant are complications that are closely associated with high birth weight babies. ²² In the province of British Columbia, shoulder dystocia in the infant and CPD are some of the most common indications for Cesarean-section deliveries. ²³

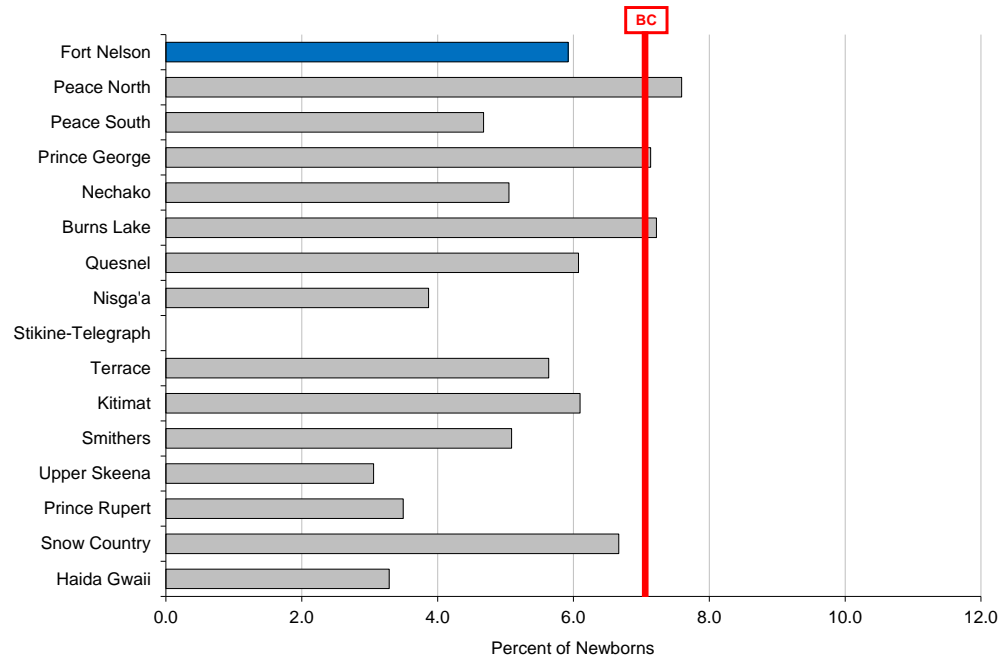
Large or Small for Gestational Age - A normal pregnancy can range from 38 to 42 weeks. During this time, the baby grows and develops inside the mother's womb. Knowing an infant's growth and development relative to the gestational age assists care providers in making various delivery related decisions, such as whether to consider a C-section or if there may be a need for additional supports following delivery such as increased feedings and monitoring. ^{24 25 26}

Healthy Infants

Low Birthweight Infants (≤ 2500 grams) by Local Health Area: 2008/09 - 2012/13



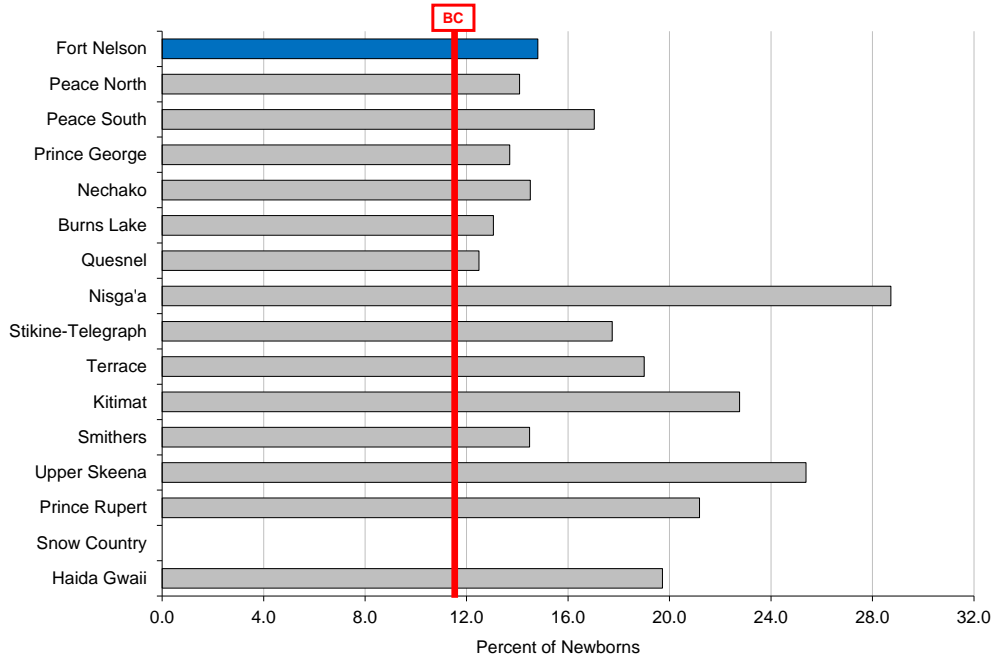
Small for Gestational Age at Birth by Local Health Area: 2008/09 - 2012/13



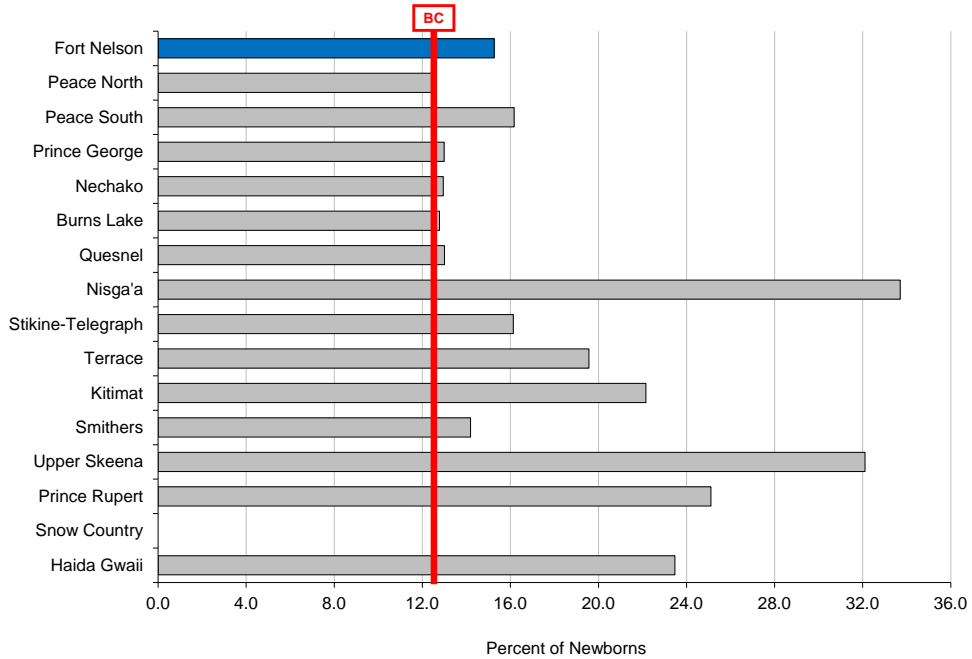
Due to a small number of occurrences, the data for Stikine-Telegraph and Snow Country LHAs should be interpreted with caution.
 These figures are based upon mother's usual Local Health Area (LHA) of residence, not the facility location where delivery occurred.
 Small or Large for Gestational Age calculation is based on gender, birth number (singleton, multiple) and birth weight / gestational age charts for BC.

Healthy Infants

High Birthweight Infants (> 4000 grams) by Local Health Area: 2008/09 - 2012/13



Large for Gestational Age at Birth by Local Health Area: 2008/09 - 2012/13



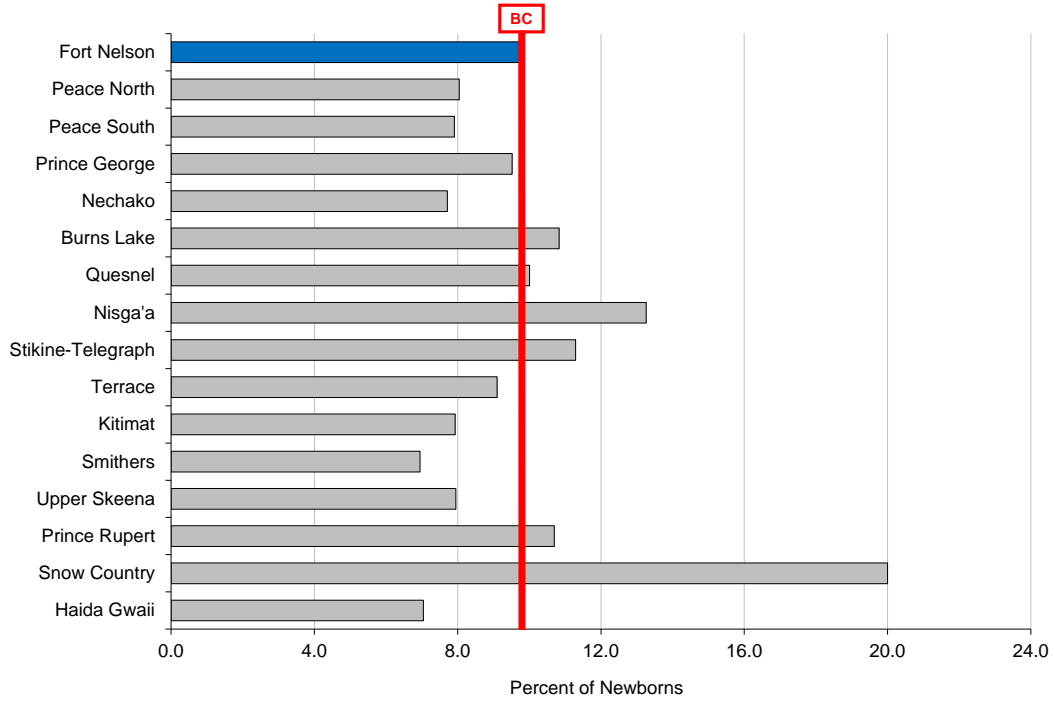
Due to a small number of occurrences, the data for Stikine-Telegraph and Snow Country LHAs should be interpreted with caution.

These figures are based upon mother's usual Local Health Area (LHA) of residence, not the facility location where delivery occurred.

Small or Large for Gestational Age calculation is based on gender, birth number (singleton, multiple) and birth weight / gestational age charts for BC.

Healthy Infants

Preterm Infants (< 37 weeks gestation) by Local Health Area: 2008/09 - 2012/13



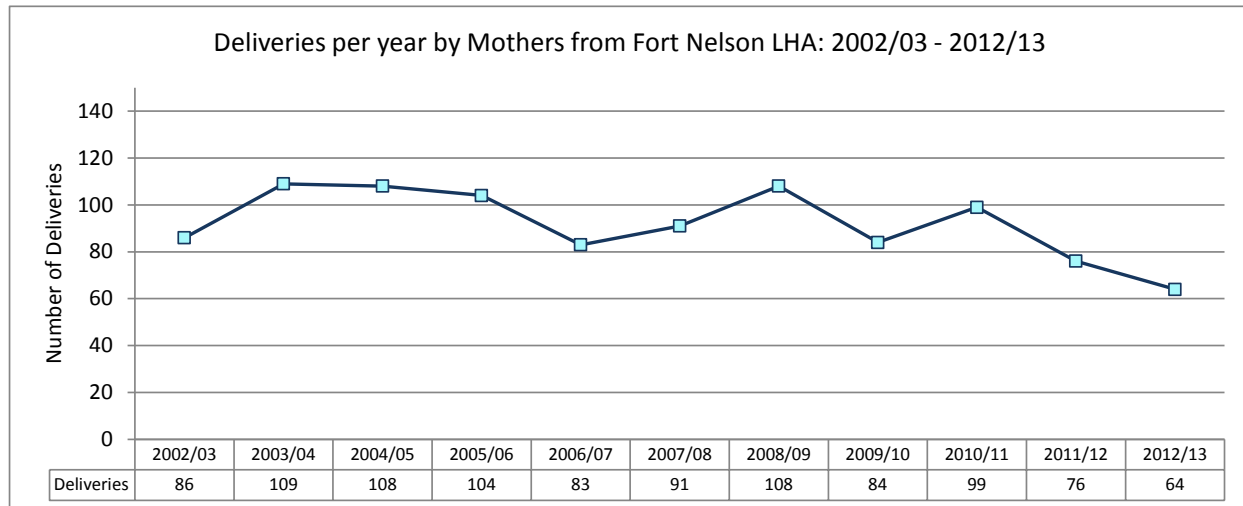
Due to a small number of occurrences, the data for Stikine-Telegraph and Snow Country LHAs should be interpreted with caution.

These figures are based upon mother's usual Local Health Area (LHA) of residence, not the facility location where delivery occurred.

Small or Large for Gestational Age calculation is based on gender, birth number (singleton, multiple) and birth weight / gestational age charts for BC.

Delivery Trends by Community ²⁷

Knowing how many mothers are delivering infants helps us to plan and deliver a range of prenatal, maternity and post-natal services. This type of information can also inform other services such as immunization programs and the childhood screening programs that target developmental concerns such as vision, hearing and dental health.



These figures are based upon mother's usual Local Health Area (LHA) of residence, not the facility location where delivery occurred.

During the 11 year period shown above there were 1,012 deliveries in British Columbia hospitals to mothers from the Fort Nelson Local Health Area (LHA). The vast majority of these births 996 / 1012 (98%) were to moms from the area formerly known as the Town of Fort Nelson. Only a handful, (less than 2 %) were made by mothers from other areas in the LHA.

Deliveries in Alberta

In addition to the above deliveries in British Columbia, a certain number of mothers chose to deliver their babies in Alberta. These deliveries are summarized on the next page.

Where Moms from Fort Nelson LHA delivered their Infants ²⁸

Mom's Home Community	Delivery Locations 2002/03 – 2012 /13					
	Fort Nelson	Fort St John	Dawson Creek	Prince George	Other BC Location	Total
Fort Nelson LHA	608	218	78	37	71	1,012
Total Deliveries	608	218	78	37	71	1,012

Note: LHA = Local Health Area

Deliveries in Alberta ²⁹

In addition to the above deliveries in British Columbia, a certain number of mothers chose to deliver their babies in Alberta. Here is a summary of these Alberta deliveries.

Mother's Home Community	Deliveries in Alberta by Fiscal Year									
	2004 2005	2005 2006	2006 2007	2007 2008	2008 2009	2009 2010	2010 2011	2011 2012	2012 2013	Total
Fort Nelson	7	3	2	11	5	1	6	3	8	46
Fort St John	1	1	6	2	0	2	1	0	0	13
Dawson Creek	2	1	2	0	0	0	1	5	1	12
Chetwynd	6	1	3	1	2	0	2	2	0	17
Tumbler Ridge	0	0	0	3	1	0	0	0	2	6
McBride	4	3	4	3	2	1	2	0	2	21
Valemount	10	9	0	1	2	6	7	6	9	50
Total	30	18	17	21	12	10	19	16	23	166

Source: data is updated and provided annually to Northern Health by the Alberta Perinatal Health Program: Last updated February 2014.

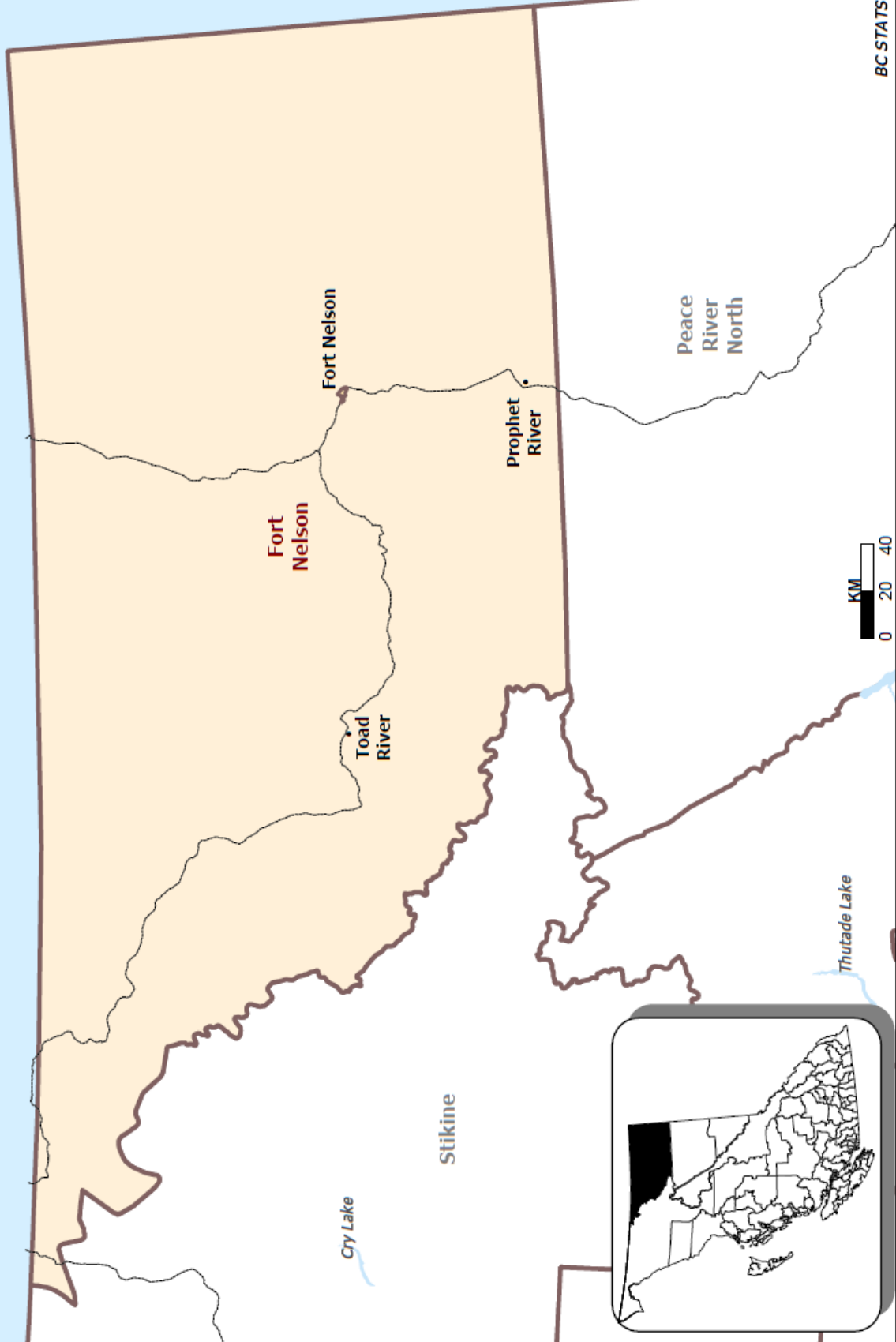
Home Births

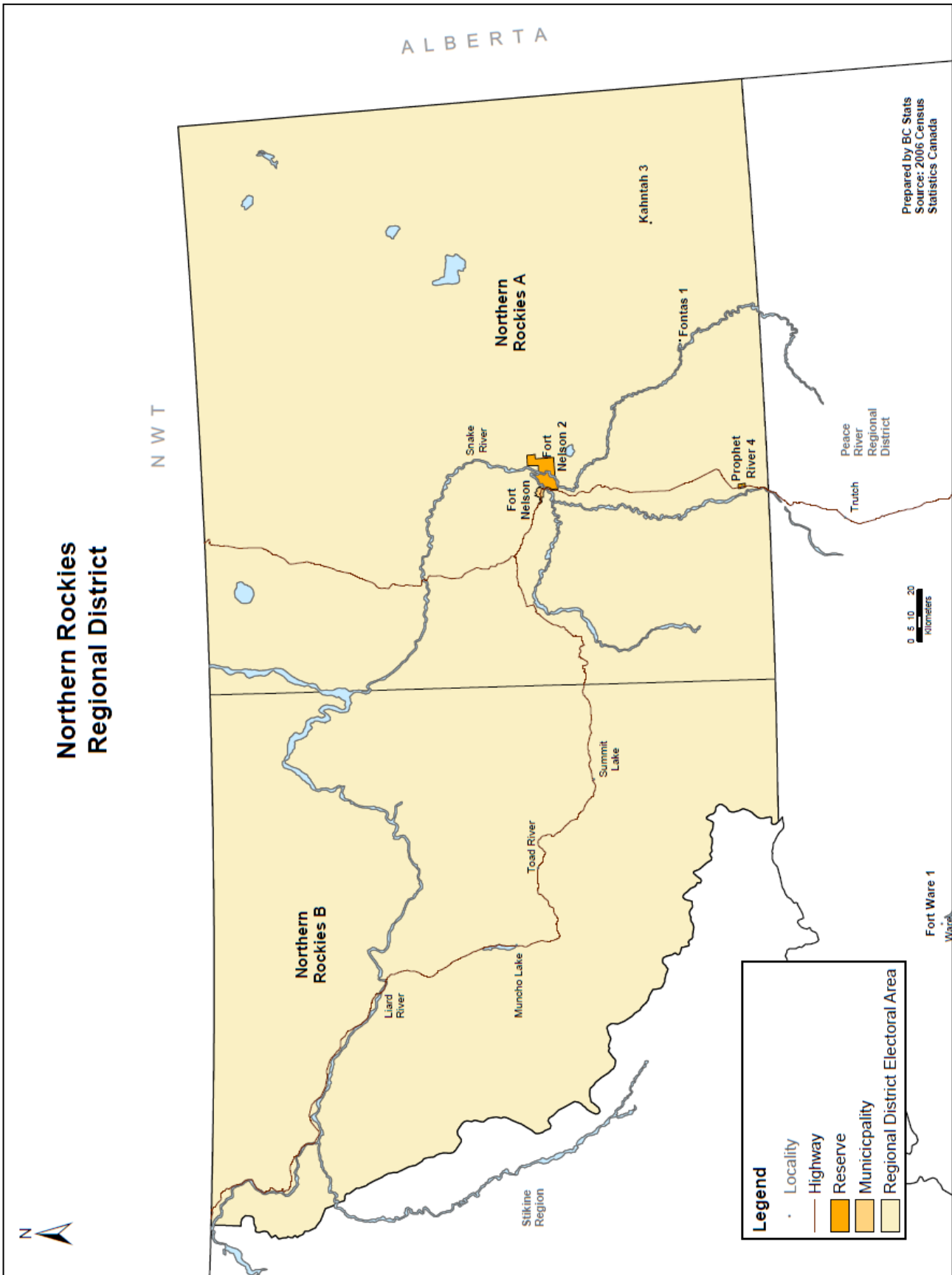
There were no known home births recorded in the Fort Nelson LHA in the last decade.

Local Health Areas, Regional Districts and the Northern Regional Municipality

During 2009, the Northern Rockies Regional Municipality (NRRM) was formed from an amalgamation of the Town of Fort Nelson with the surrounding rural areas including the Regional District. The population in the NRRM accounts for 92 % of the Fort Nelson LHA population. Maps of these areas are on the following pages.

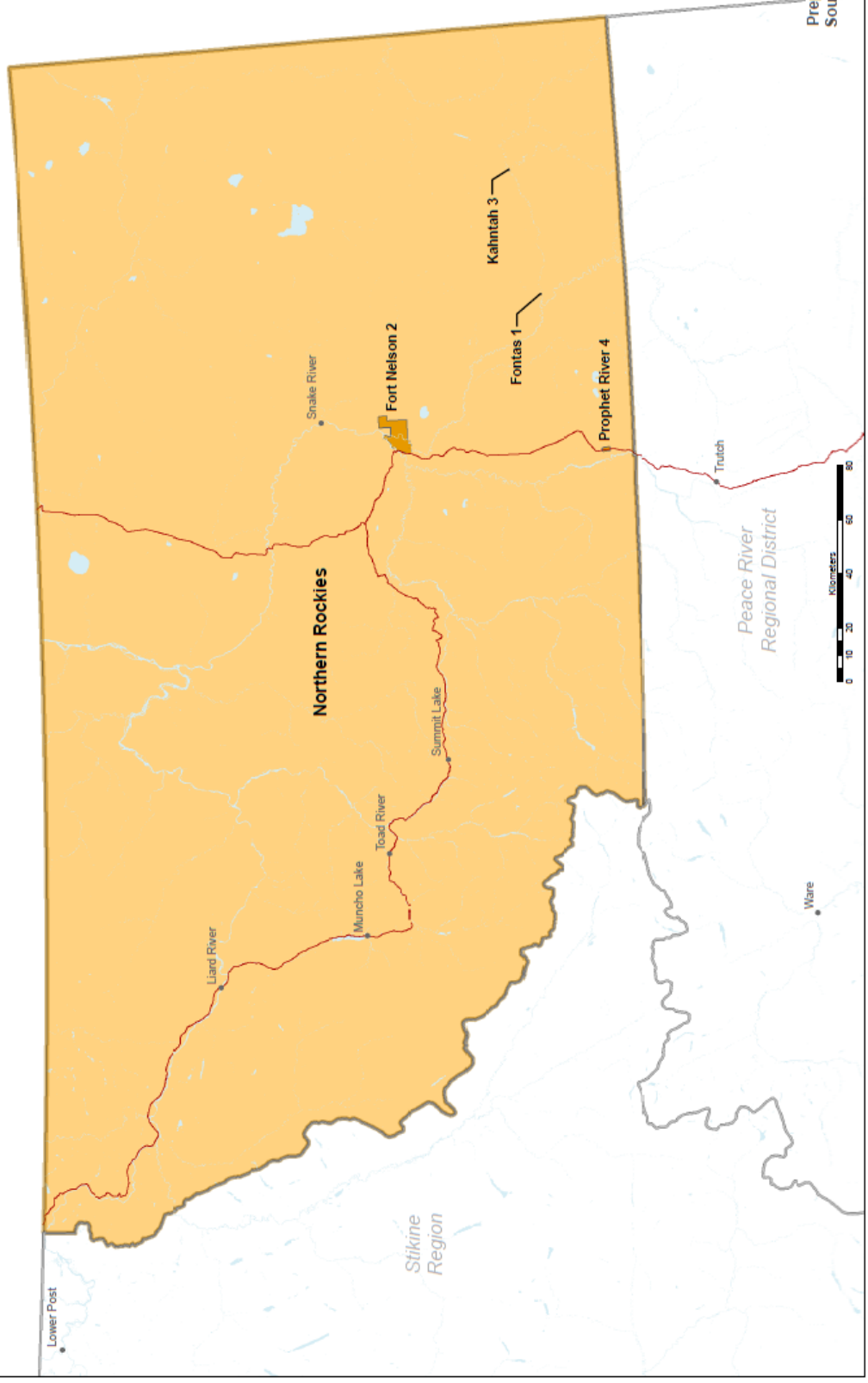
**Local Health Area 81
Fort Nelson**





Northern Rockies Regional Municipality

- Locality
- Designated Place
- Highway
- Regional District Electoral Area
- Municipality
- Reserve



Prepared by BC Stats
Source: 2011 Census,
Statistics Canada

Acknowledgements

Over the years we have worked closely with the team from Perinatal Services BC. We are especially grateful to Ms. Cathe Johnson who has been an unflinching champion of our efforts to better utilize and understand the data.

We are also very grateful to Donna Boyd and her colleagues in the Alberta Perinatal Health Program who support us with data so that we might better understand the health needs and outcomes of northerners who choose to receive maternity services in Alberta.

BC Stats, Ministry of Technology, Innovation and Citizens' Services is the central statistics agency for the province of British Columbia. The works of BC Stats including the most recent population estimates and projections, community facts and maps are embedded in this document in an effort to help us to better paint the landscape in which we operate.



We would not be able to produce this annual update without the generous and continuing expertise provided by these provincial agencies.

Thank you.

References

- ¹ BC Stats, Regional Socio-economic Profiles: 2013.
<http://www.bcstats.gov.bc.ca/StatisticsBySubject/SocialStatistics/SocioEconomicProfilesIndices.aspx>
- ² BC Treaty Commission Statement of Intent Maps: GEO BC. <http://ilmbwww.gov.bc.ca/cis/initiatives/treaty/>
- ³ BC Ministry of Aboriginal Relations & Reconciliation: First Nations by Region. <http://www.gov.bc.ca/arr/treaty/regional.html>
- ⁴ BC Stats: Population Estimates for Local Health Areas: PEOPLE 2013.
<http://www.bcstats.gov.bc.ca/StatisticsBySubject/Demography/PopulationEstimates.aspx>
- ⁵ Population Estimates for Municipalities: BC Stats; 1996-2006, 2006-2012.
<http://www.bcstats.gov.bc.ca/StatisticsBySubject/Demography/PopulationEstimates.aspx>
- ⁶ BC Stats Population Projections: BC Stats PEOPLE 2013. Prepared August 27, 2013.
<http://www.bcstats.gov.bc.ca/StatisticsBySubject/Demography/PopulationEstimates.aspx>
- ⁷ Northern Health Resident Mothers and Newborn Babies: Selected Indicators April 01, 2008 – March 31, 2013. Data prepared for Northern Health by Perinatal Services BC: February 2012. Request No. 2013-047.
- ⁸ Baby's Best Chance: Glossary page 156. <http://www.health.gov.bc.ca/library/publications/year/2013/bbc.pdf>
- ⁹ BC Provincial Health Officers Annual Report 1999. Appendix C: Indicator Definitions
<http://www.health.gov.bc.ca/pho/reports/>
- ¹⁰ BC Vital Statistics Agency Annual Reports: <http://www.vs.gov.bc.ca/stats/annual/index.html>
- ¹¹ Northern Health Resident Mothers and Newborn Babies: Selected Indicators April 01, 2008 – March 31, 2013. Data prepared for Northern Health by Perinatal Services BC: February 2012. Request No. 2013-047.
- ¹² Baby's Best Chance: Glossary page 55. <http://www.health.gov.bc.ca/library/publications/year/2013/bbc.pdf>
- ¹³ Baby's Best Chance: Glossary page 14. <http://www.health.gov.bc.ca/library/publications/year/2013/bbc.pdf>
- ¹⁴ Pollack et al. as cited in Perinatal Services BC, BC Perinatal Database Annual Report 2007: Page 14.
<http://www.perinataleservicesbc.ca/Annual%20Report.htm>
- ¹⁵ Perinatal Services BC; Perinatal Annual Indicators for BC Residents: Updated March 2014.
<http://www.perinataleservicesbc.ca/DataAndSurveillance/Surveillance/annual-indicators/default.htm>
- ¹⁶ Perinatal Services BC, BC Perinatal Database Annual Report 2008: Page 45.
<http://www.perinataleservicesbc.ca/DataAndSurveillance/Surveillance/AnnualReports/default.htm>
- ¹⁷ Northern Health Resident Mothers and Newborn Babies: Selected Indicators April 01, 2008 – March 31, 2013. Data prepared for Northern Health by Perinatal Services BC: February 2012. Request No. 2013-047.
- ¹⁸ Perinatal Services BC Perinatal Core Surveillance Quarterly Report 2013/2014
http://www.perinataleservicesbc.ca/NR/rdonlyres/742ADF01-4F9F-4ACA-86DD-4833F07A1234/0/TechnicalNotesQuarterlyReport_201312.pdf
- ¹⁹ Baby's Best Chance: Glossary page 80. <http://www.health.gov.bc.ca/library/publications/year/2013/bbc.pdf>
- ²⁰ Baby's Best Chance: Glossary page 133. <http://www.health.gov.bc.ca/library/publications/year/2013/bbc.pdf>
- ²¹ BC Provincial Health Officers Annual Report 1999. Appendix C: Indicator Definitions.
<http://www.health.gov.bc.ca/pho/reports/>
- ²² Infant Macrosomia Among First Nations in British Columbia: Prevalence, Trends and Characteristics. Key Findings: page IV. BC Vital Statistics Agency: 2007. <http://www.vs.gov.bc.ca/>
- ²³ Validation of the Indications for Caesarean Delivery in the BC Perinatal Registry: Volume 1, Issue 5, April 2012. Refer to Table 3, page 7: Perinatal Services BC: <http://www.perinataleservicesbc.ca>
- ²⁴ Medline: National Libraries of Medicine: National Institutes of Health.
<http://www.nlm.nih.gov/medlineplus/ency/article/002367.htm>
- ²⁵ Charting Birth Outcomes in BC: BC Vital Statistics Agency; Accessed through Perinatal Services BC; March 2014
<http://www.perinataleservicesbc.ca/NR/rdonlyres/8FDA8BCD-95CF-4E25-9341-1E22F41E4E82/0/ResourcesChartingBirthOutcomeReport.pdf>
- ²⁶ Statistics-Canada; Vital-Statistics Definitions: <http://www.statcan.gc.ca/pub/82-221-x/2013001/def/def1-eng.htm>
- ²⁷ Northern Health Resident Mothers that Delivered a Baby in British Columbia, by Resident Municipality, April 01 2002 - March 31, 2013: Data prepared for Northern Health by Perinatal Services BC. Request 2013-047.
- ²⁸ Northern Health Resident Mothers that Delivered a Baby in British Columbia, by Resident Municipality, April 01 2002 - March 31, 2013: Data prepared for Northern Health by Perinatal Services BC. Request 2013-047.
- ²⁹ Alberta Perinatal Health Program, update for Northern Health: Last updated February 2014.