

Background summary statistical profile of health and health determinants in Eeyou Istchee for the Health Assembly

Prepared by the SERC Team of the Public Health Department

This statistical profile of health and health determinants has been prepared as background information for the Health Assembly by summarising the chapters from the regional health profile which have been prepared to help with local and regional health planning.

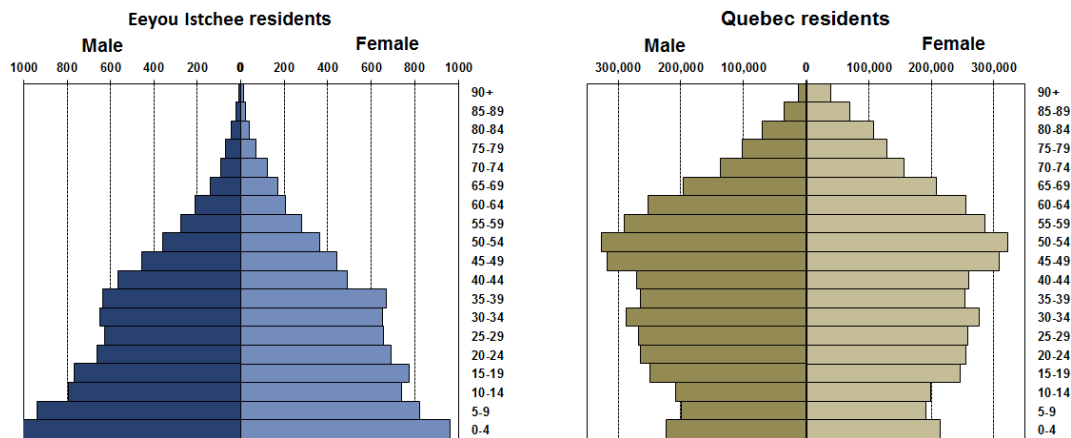
- 1- Population and Demographics**
- 2- Infrastructure and Housing**
- 3- Natural Environment**
- 4- Employment and Economy**
- 5- Culture**
- 6- Physical Health and Health Services**
- 7- Maternal and Infant Health**

1-Population & Demographics

- 17,657 people in 2015 (doubled over 3 decades)
- Half (~8800) are under the age of 25
- Growing and expected to keep growing:
 - 5 year growth rate 15.7% (between 2006 to 2011)
 - Versus 4.7% in Quebec

The population age pyramid of EI resembles a mountain, while that of Quebec an inuksuk.

Population age pyramid by sex, Eeyou Istchee and Quebec, 2011

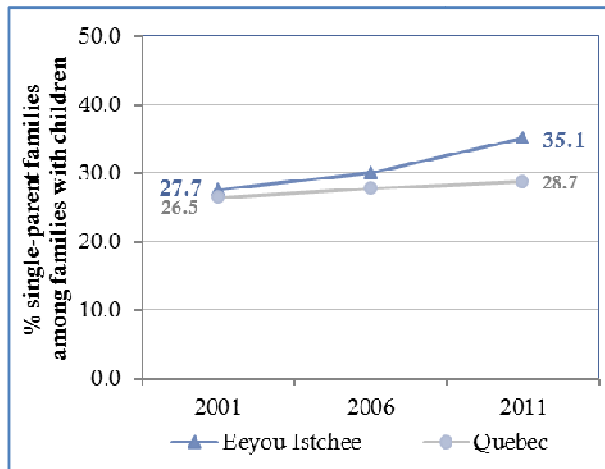


Source: MSSS, ISQ population estimates and projections, June 2015 (based on 2011 census)

Single parent families

- Single parent families becoming more common than in the past or in Quebec
 - 35.1% (2011) versus 27.7% (2001)
 - 28.7% (Quebec in 2011)

Proportions of single parent families among families with children at home, Eeyou Istchee and Quebec, 2001, 2006 and 2011

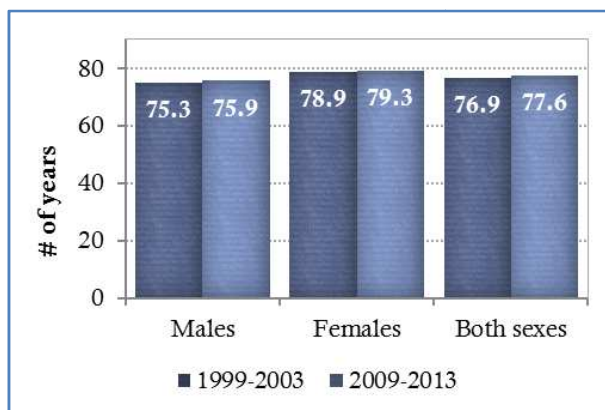


Sources: Statistics Canada 2001, 2006 and 2011 censuses

Life expectancy

A widely used indicator of the health of a population, life expectancy is the number of years a person would be expected to live and die, starting from birth (life expectancy at birth) or at age 65 (life expectancy at age 65). Between 1999 and 2013, the life expectancy of residents of EI increased marginally, but the difference is too small to be significant.

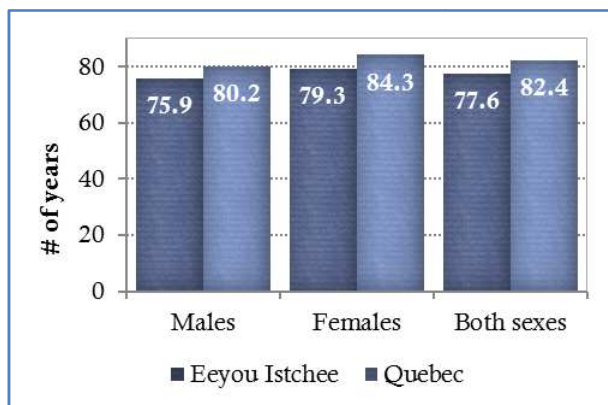
Life expectancy at birth by sex, Eeyou Istchee, 1999-2003 and 2009-2013



Sources: - MSSS, Mortality database, 1999 to 2013;
- MSSS, ISQ population estimates and projections, June 2015.

Life expectancy of men in Eeyou Istchee is 4.2 years lower than that of men in Quebec. For women, the gap is even larger, at 5.0 years lower. The difference for both sexes is 4.7 years. All differences are significant.

Life expectancy at birth by sex, Eeyou Istchee and Quebec, 2009-2013

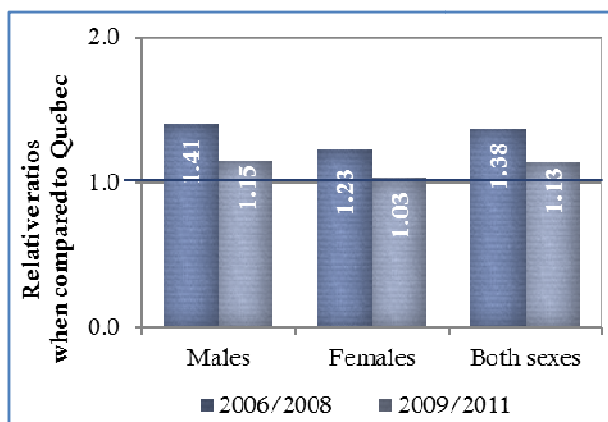


Sources: - MSSS, Mortality database, 1999 to 2013;
- MSSS, ISQ population estimates and projections, June 2015.

Preventable mortality

Preventable, or avoidable, mortality refers to deaths that potentially could have been averted through effective prevention, public health policies, and/or provision of timely and adequate health care. The relative ratios of preventable mortality rates have improved in Eeyou Istchee and the rates are now almost the same as for Quebec.

Relative ratios of preventable mortality rates by sex, Eeyou Istchee, 2006-2008 and 2009-2011



Note: The black line at 1.0 show the level at which both regions are equal.

Source: Statistics Canada, Canadian Vital Statistics, 2009-2011

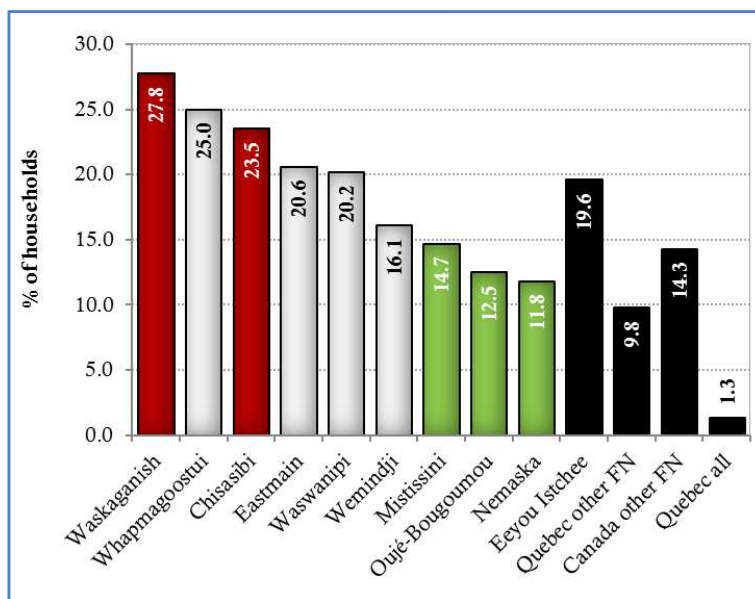
2- Infrastructure and housing

Overcrowded dwellings

Overcrowding is defined as more than one person per room. Only bedrooms, living rooms, dining rooms and studies are counted as habitable rooms. Almost one out of five aboriginal households (19.6%) in Eeyou Istchee can be considered as being overcrowded, while only 1.3% of all Quebec households (aboriginal and non-aboriginal) fit this definition.

Overcrowding rates vary between communities of Eeyou Istchee.

Households with more than one person per room, communities of Eeyou Istchee aboriginals, Quebec and Canada other on reserve First Nations and Qc all, 2011



Note: Red indicates significantly higher rates when compared to the rest of Quebec, while green indicates significantly lower rates. White indicates no significant difference. The black line at 1.0 shows the level at which both regions are equal.

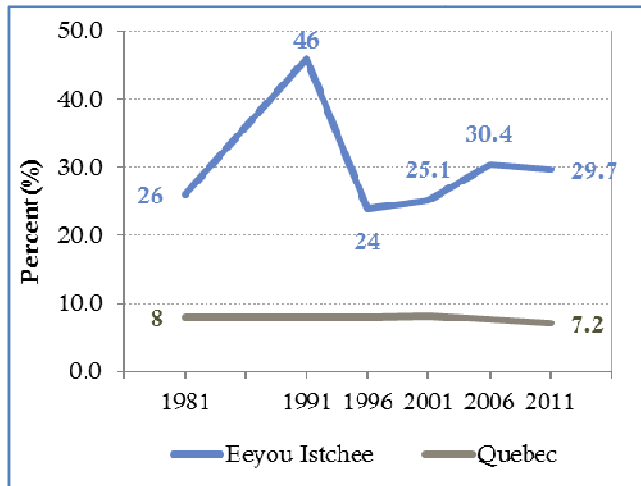
Source: Statistics Canada 2011 National Household Survey

Quality of dwellings

From 1991 to 1996, the proportion of dwellings in need of major repairs in Eeyou Istchee dropped from 46% to 24%. By 2011, it had increased to 29.7%. In 2011, the proportion of aboriginal dwellings in need of major repairs in Eeyou Istchee was 31.6%, exceptionally high when compared to all of Quebec (7.2%), similar to the housing conditions of other on reserve

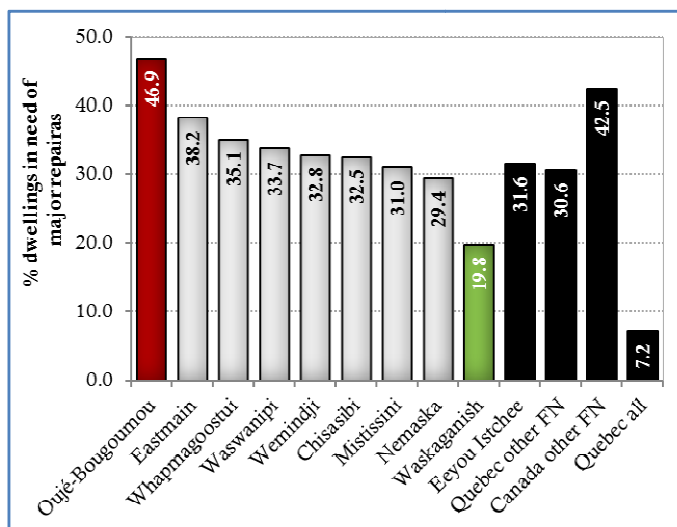
First Nations of Quebec (30.6%), but much better than for other on reserve First Nations in the rest of Canada (42.5%). As of 2011, of 3,480 dwellings inhabited by aboriginals in Eeyou Istchee, 1,100 were in need of major repairs.

Dwellings in need of major repairs, Eeyou Istchee and Quebec, 1981 to 2011



Sources: Statistics Canada 1981 to 2006 censuses and 2011 National Household Survey

Dwellings needing major repairs, communities of Eeyou Istchee aboriginals, Quebec and Canada other on reserve First Nations and Quebec all, 2011



Note: Red indicates significantly higher rates when compared to the rest of Quebec, while green indicates significantly lower rates. White indicates no significant difference. The black line at 1.0 show the level at which both regions are equal.

Source: Statistics Canada 2011 National Household Survey

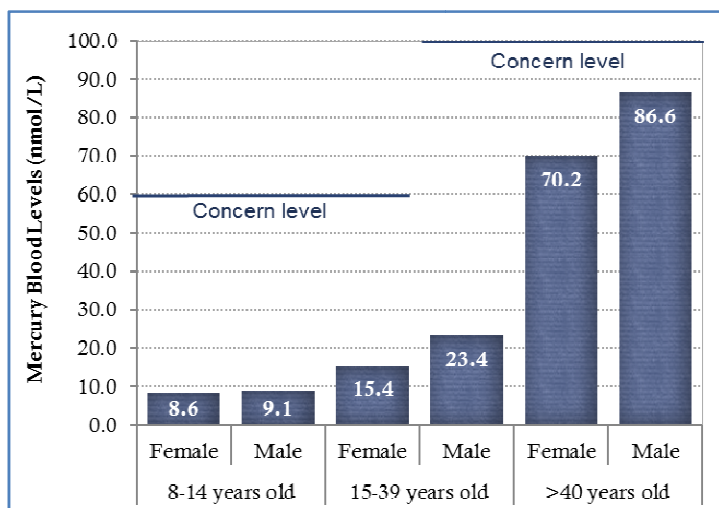
3- Natural Environment

The natural environment is intrinsic to human life. Air, soil and water pollution from development projects, such as hydroelectric dams and forestry, directly affects our health as contaminants enter the food chain. Infants, children and pregnant women are particularly vulnerable to toxicity, especially from heavy metals such as mercury, lead and cadmium.

Mercury Pollution

While natural background levels of mercury are found in Eeyoulstchee, the dams have created concern since the 1970s since methylmercury is a powerful neurotoxin. Although mercury levels have decreased recently, average blood levels in communities of EI are still higher than the 2002 provincial average.

Mercury blood levels by gender and age group, Eeyoulstchee, 2002 to 2009

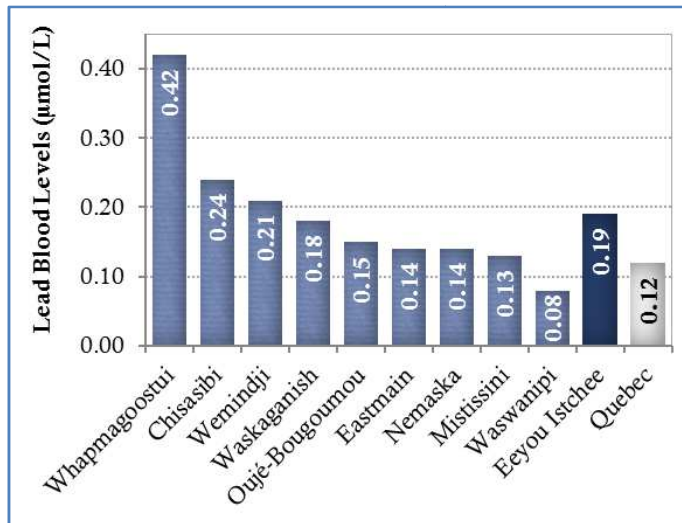


Sources: - Exposure and preliminary health assessments of the Oujé-BougoumouCree population to mine tailings residues, 2002;
- NituuchischaayihitaaAschii Survey, 2005 to 2009.

Lead Contamination

In EI, the most probable source of lead is lead shot from firing guns, then leading to contamination on hands and in game meat. EI results were 36.8% higher than those reported for Quebec.

Lead blood levels among residents age 15 and over, communities of Eeyoulstchee and Quebec, 2002 to 2009

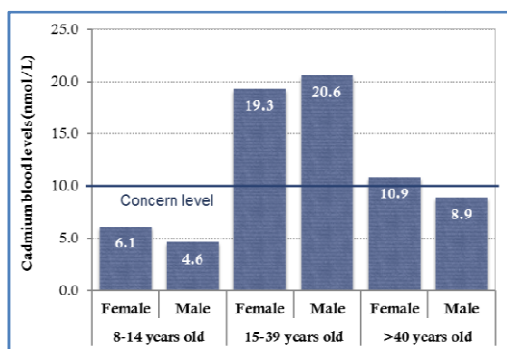


Sources: - Exposure and preliminary health assessments of the Oujé-Bougoumou Cree population to mine tailings residues, 2002;
- Nituuchischaayihitaa Aschii Survey, 2005 to 2009.

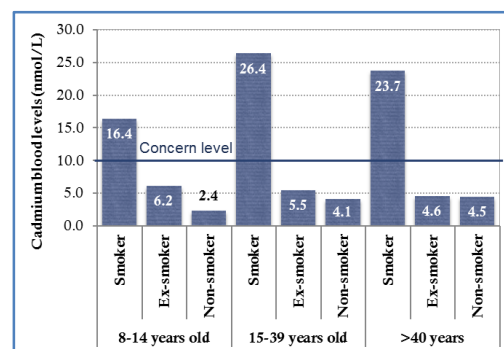
Cadmium contamination

Cadmium is severely toxic to the kidneys and can result in acute and chronic kidney failure requiring dialysis or transplant. Cigarette smoking is the most common source of exposure. Smoking is the only variable which explains these findings. Smokers have much higher levels than ex-smokers and non-smokers, while the levels in non-smokers are comparable to the rest of Quebec.

Cadmium blood levels by gender and age group, Eeyoulstchee, 2002 to 2009



Cadmium blood levels by smoker status and age group, Eeyoulstchee, 2002 to 2009



Sources: - Exposure and preliminary health assessments of the Oujé-Bougoumou Cree population to mine tailings residues, 2002;
- Nituuchischaayihitaa Aschii Survey, 2005 to 2009.

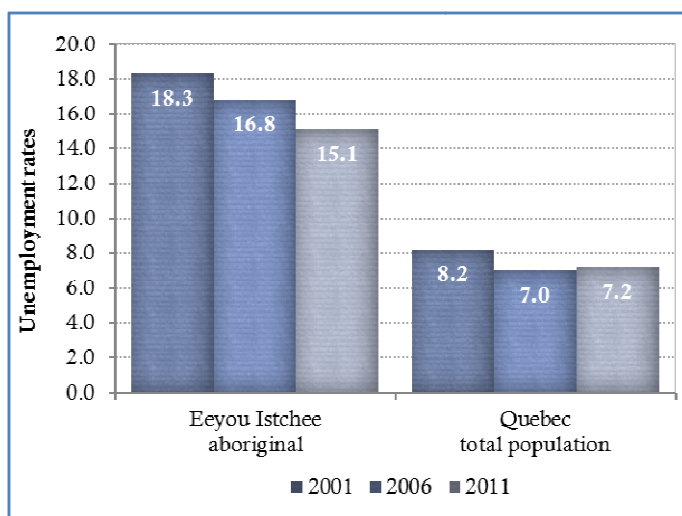
4- Employment and economy

Unemployment¹

Among the 10,380 aboriginal residents age 15 years or over in Eeyou Istchee, as reported by Statistics Canada, 6,240 (60.1%) were in the labour force and 4,135 (39.9%) were not (unwilling or unable to work and full-time students attending school). Of those in the labour force, 940 (15.1%) were unemployed.

The regional unemployment rate for aboriginal residents aged 15 years or over has dropped since 2001, when the rate was 18.3%.

Unemployment rates of population age 15 years or over, Eeyou Istchee aboriginal and Quebec total, 2001, 2006 and 2011

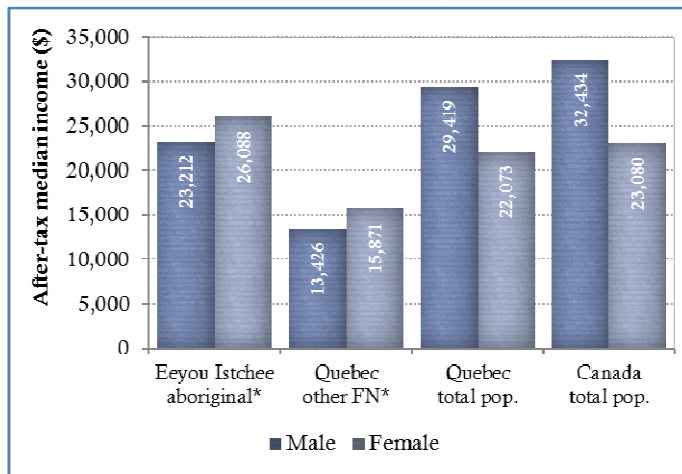


Sources: Statistics Canada 2001, 2006 censuses and 2011 National Household Survey

¹Data on employment rates need to be treated with caution since most of the information available dates back to 2010, as collected by the 2011 Statistics Canada Household Survey. Furthermore, the existence of the Hunters and Trappers Income Support Program complicates the picture.

Gender income gap

After-tax median income of population age 15 years or over who reported an income, by gender, Eeyou Istchee and other First Nations of Qc aboriginal populations, Quebec and Canada total population, 2010



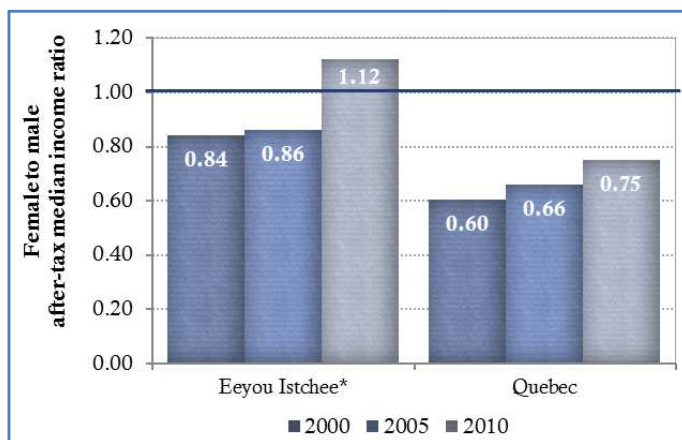
Note: * Exact figure unavailable; Weighted average of communities' after-tax median income used.

Source: Statistics Canada 2011 National Household Survey

This measure compares men as a group to women as a group to see if one makes more than the other. Canada has a poor record of wage equality: 35th out of 130 nations with a 2013 female to male ratio of 0.71, behind countries such as Sri Lanka, Kazakhstan and Egypt. In 2010, Quebec did not fare much better with a female-to-male ratio of 0.75. Eeyou Istchee is now showing a reverse trend.

The gender gap in Eeyou Istchee has changed drastically in the past years. While the female-to-male after-tax median income ratio of aboriginal residents was 0.84, in 2000 and 0.86, in 2005, it has increased to 1.12, in 2010. This means that men as a group make \$1 and women as a group are making \$1.12.

Female to male after-tax median income ratio of population age 15 years or over who reported an income, Eeyou Istchee aboriginal population and Quebec total population, 2000, 2005 and 2010



Notes: The black line at 1.0 show the level at which both regions are equal;

*: 2010 exact figure unavailable; Weighted average of communities' after-tax median income used.

Sources: Statistics Canada 2001, 2006 censuses and 2011 National Household Survey

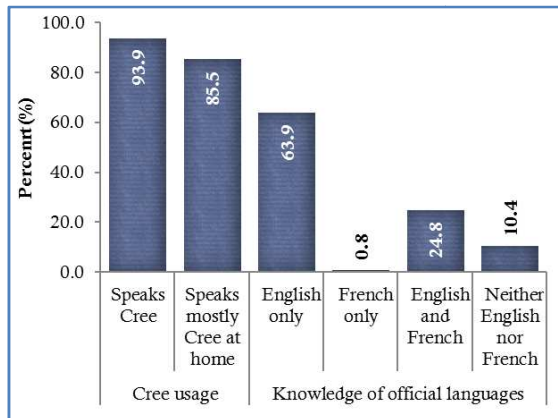
Other on reserve First Nations of Quebec also show a pattern similar to that of Eeyou Istchee, with a ratio of 1.18.

5- Culture

Language

In 2011, Cree was spoken by 93.9% of Eeyou Istchee aboriginal residents and 85.5% of them spoke Cree as the main language at home.

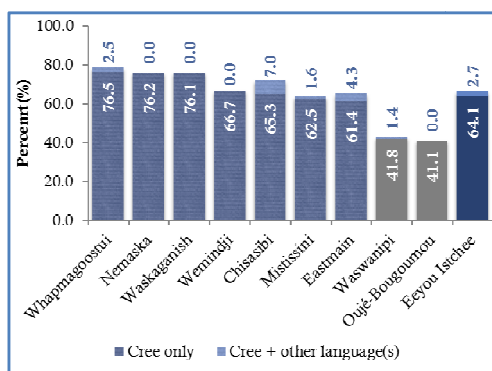
Language characteristics, Eeyou Istchee aboriginal population, 2011



Sources: Statistics Canada 2011 census and 2011 National Household Survey

In a 2013 high school survey, 73.2% of Eeyou Istchee students reported speaking only Cree at home while another 8.8% spoke Cree and another language, for a combined total of 82.0% for Cree usage (data not shown). English was reported as the second most common language, spoken by 93.9% of all residents (63.9% English only + 24.8% English and French). Another 10.4% of the population declared speaking neither English nor French. These individuals most likely spoke Cree only.

Cree usage at work, aboriginal population age 15 or over, communities of Eeyou Istchee, 2011



Source: Statistics Canada 2011 National Household Survey

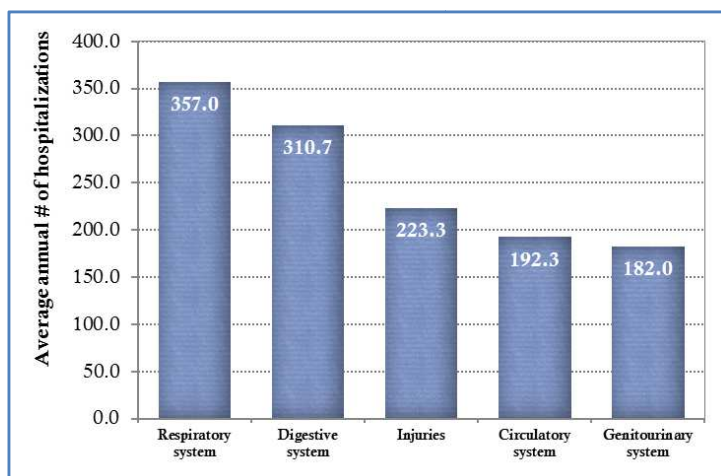
6- Physical Health and Health Services

Hospital admissions and readmissions are an important topic in the healthcare community. Reducing hospital utilization can result in a leaner, more efficient system with lower costs and greater health outcomes. Whenever possible, cases that require hospitalization are sent locally to the Chisasibi Hospital. Else, or if a transfer is required, they are then sent to Chibougamau, Val-d'Or or Montreal for major cases.

Morbidity (hospitalizations)

For the 2010-11 to 2012-13 fiscal years period, Eeyou Istchee's leading causes for hospitalizations were related to the respiratory system, digestive system, injuries, circulatory system and genitourinary system.

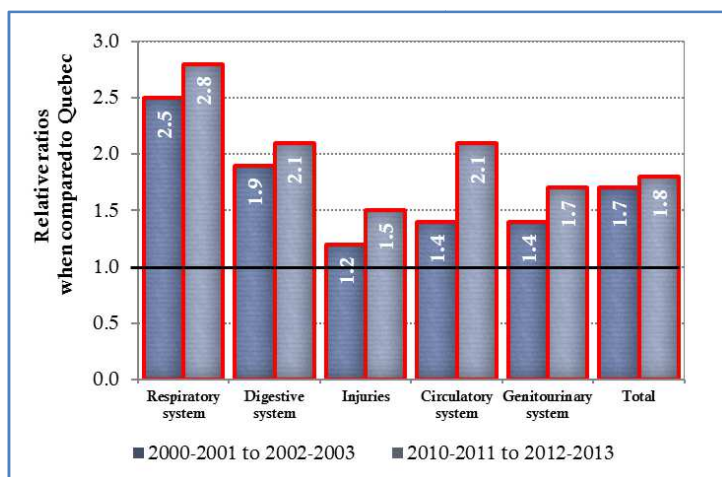
Average annual number of hospitalizations, Eeyou Istchee, 2010-11 to 2012-13



Source: MSSS, MED-ECHO database, 2010-11 to 2012-13

Eeyou Istchee hospitalization rates for all leading causes have been and are still significantly higher than in Quebec.

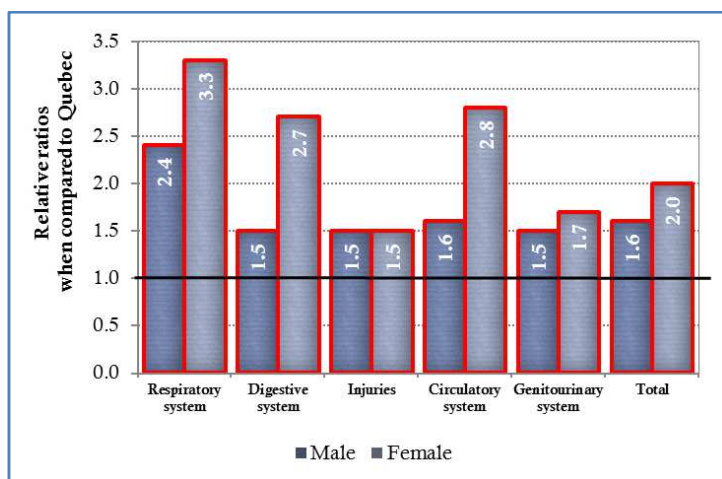
Relative ratios when standardized hospitalization rates are compared to Quebec, by leading cause, Eeyou Istchee, 2000-01 to 2002-03 and 2010-11 to 2012-13



Sources: - MSSS, MED-ECHO database, 2010-11 to 2012-13;
 - MSSS, ISQ population estimates and projections, June 2015.

Once these rates are age standardized, it becomes evident that, apart from injuries, females are hospitalized at a much higher rate than males when compared to Quebec.

Relative ratios when standardized hospitalization rates are compared to Quebec, by leading cause and sex, Eeyou Istchee, 2010-11 to 2012-13

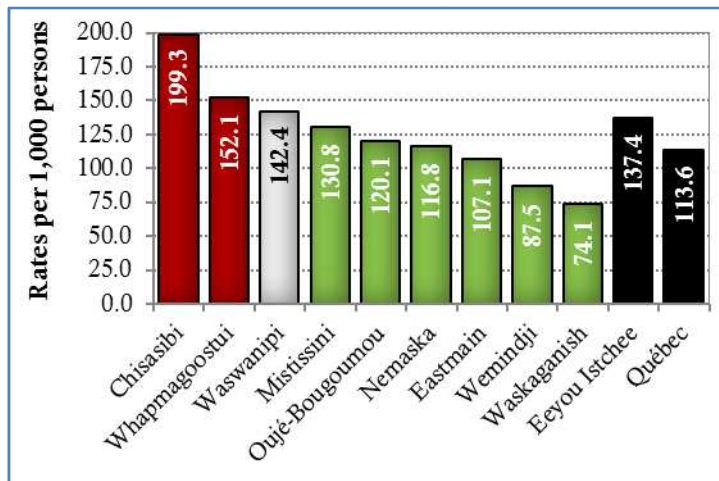


Sources: - MSSS, MED-ECHO database, 2010-11 to 2012-13;
 - MSSS, ISQ population estimates and projections, June 2015.

Excepted Waswanipi, all communities show a significant difference with the rest² Eeyou Istchee, Chisasibi and Whapmagoostui being higher, the others lower.

² Considering that the large size of some of the communities can influence the results of the whole region, all comparisons are done with the total of the other communities.

Hospitalization rates for all causes by community of Eeyou Istchee and Quebec, 2010-11 to 2012-13

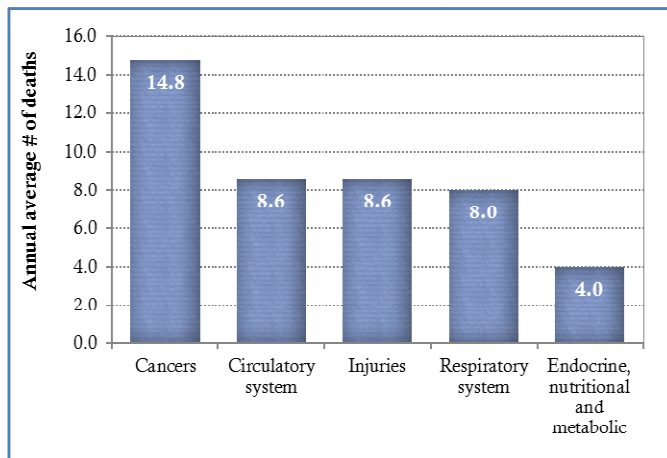


Sources: - MSSS, MED-ECHO database, 2010-11 to 2012-13;
- MSSS, ISQ population estimates and projections, June 2015.

Mortality

Cancers are the main cause of mortality in Eeyou Istchee, followed by deaths related to the circulatory system, injuries, the respiratory system and the Endocrine, nutritional and metabolic system.

Average annual number of deaths by leading cause, Eeyou Istchee, 2009-2013

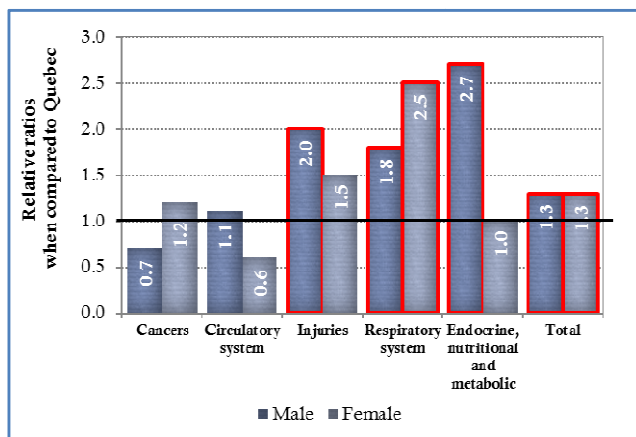


Source: MSSS, Mortality database, 2009 to 2013

There have been some changes in the rates over the years, but none is significant.

Once rates are standardized, men die of endocrine diseases 2.7 times more often than in Quebec and women die from respiratory diseases 2.5 more often.

Relative ratios when standardized mortality rates are compared to Quebec by leading cause and sex, Eeyou Istchee, 2009-2013

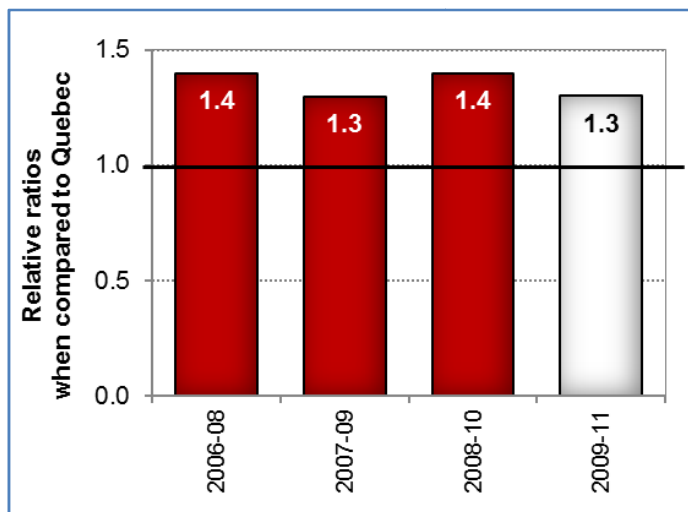


Sources: - MSSS, Mortality database, 2000 to 2013;
- MSSS, ISQ population estimates and projections, June 2015.

Avoidable deaths

The following indicator examines deaths in people younger than 75 from both preventable and treatable causes. Deaths from preventable causes are those that might have been avoided through efforts such as vaccinations, lifestyle changes (such as quitting smoking) or injury prevention, while deaths from treatable causes are those that could potentially have been avoided through effective screening and treatment of disease. Excepted for the last period, all differences between Eeyou Istchee and Quebec are significant.

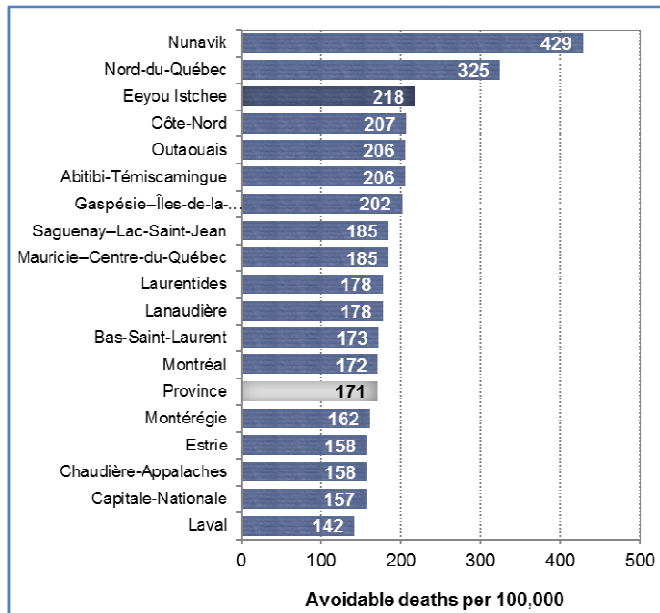
Relative ratios when standardized rates for avoidable deaths from preventable and treatable causes are compared to Quebec, 3 years mobile average, Eeyou Istchee, 2006-2008 to 2009-2011



Source: Canadian Institute of Health Information, June 2015

Eeyou Istchee presents the third highest rate of avoidable deaths from preventable and treatable causes among the Health regions of Quebec for the period of 2009 to 2011.

Avoidable deaths from preventable and treatable causes per 100,000, Health regions of Quebec 2009-2011

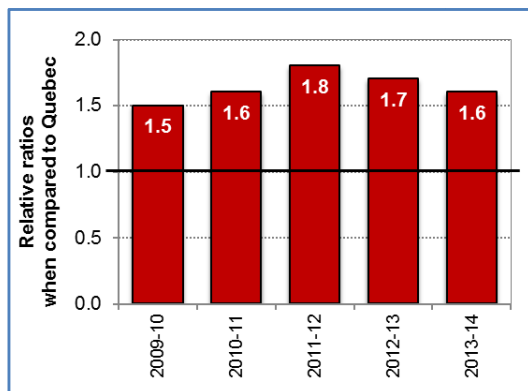


Source: Canadian Institute of Health Information, June 2015

Readmission rates

Urgent returns to hospital are difficult for patients and costly for the health system. This indicator looks at how many patients were readmitted to hospital within 30 days of their initial discharge. While not all readmissions can be prevented, the rate can often be reduced through better follow-up and coordination of care for patients after discharge.

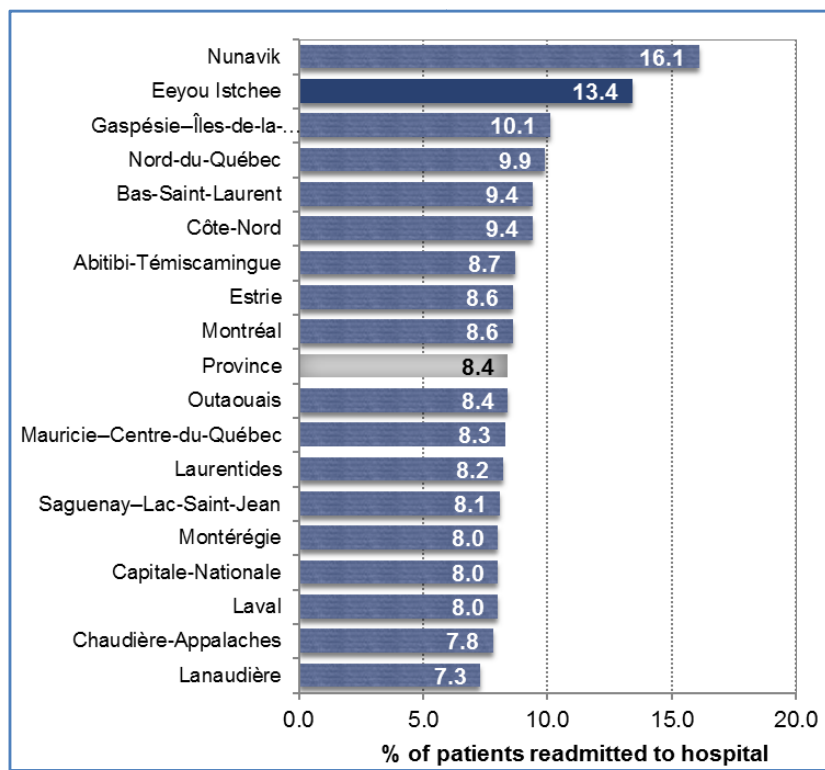
Relative ratios when Eeyou Istchee readmission rates are compared to Quebec, 2008-2009 to 2013-2014



Source: Canadian Institute of Health Information, June 2015

Eeyou Istchee presents the second highest rate of hospital readmissions among the Health regions of Quebec for the period of 2013-2014.

Readmission rates, Health regions of Quebec 2013-2014

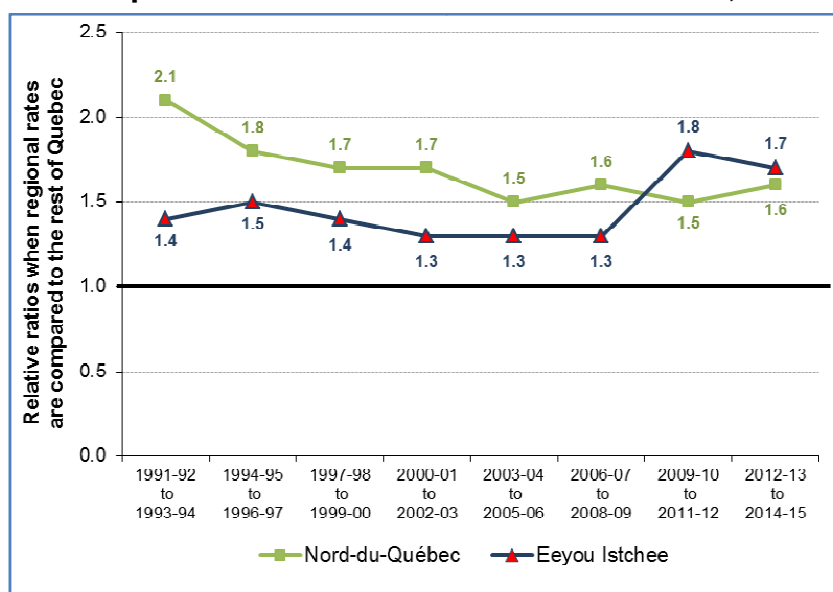


Source: Canadian Institute of Health Information, June 2015

Injuries

The regional rates of hospitalizations following an injury have always been significantly higher than the rates of the rest of Quebec. There has been an important increase in the past two periods, going from 1.3 times the provincial rate, in 2006-07 to 2008-09, to 1.7 times in 2012-13 to 2014-15, an increase of 28%.

Relative ratios when Eeyou Istchee and Nord-du-Québec standardized rates of hospitalizations following an injury are compared to the rates of the rest of Quebec, 1991-92 to 2014-15



Note: Red markers on Eeyou Istchee's line indicate significantly higher rates when compared to the rest of Quebec. The black line, at 1.0, shows the level at which a result is equal to the result of the rest of the province.

Sources: - MSSS, MED_ÉCHO data banks, 2012-13 to 2014-15;
- MSSS, ISQ population estimates and projections, June 2015.

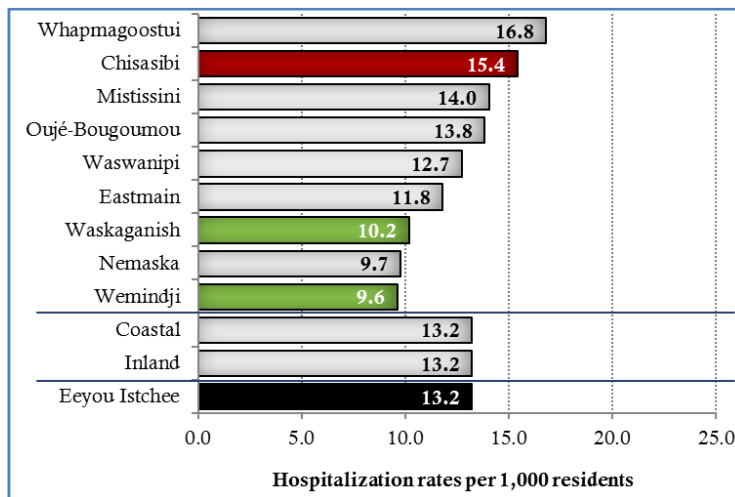
Total and average annual number of hospitalizations following an injury, Eeyou Istchee, 2012-13 to 2014-15

Type of injury	Total number for period	Average annual number
Falls	175	58.3
Self-injuries	120	40.0
Assaults	97	32.3
Transport accidents	51	17.0
Struck by, against	36	12.0
Cutting/piercing	19	6.3
Accidental poisoning	18	6.0
Fire/burns	13	4.3
Overexertion	13	4.3
Other injuries or unspecified	124	41.3
Total	666	222.0

Sources: MSSS, MED_ÉCHO data banks, 2012-13 to 2014-15

Male / female relative ratio = 1.3 / 1.0: significant difference

Hospitalization rates following an injury, per 1,000 residents, communities of Eeyou Istchee, 2012-13 to 2014-15

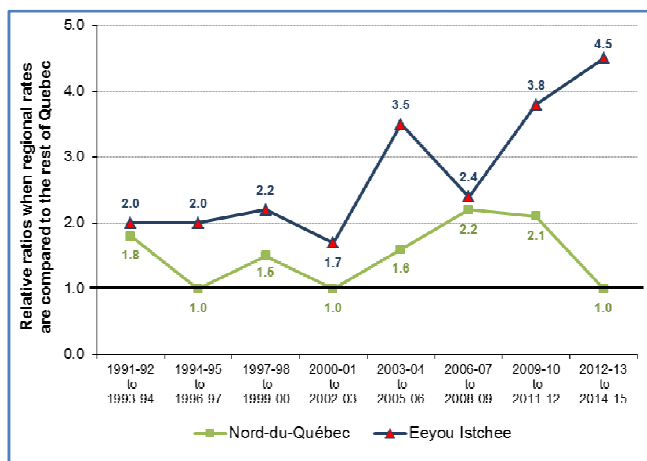


Note: Green indicate significantly lower rates when compared to the rest of Eeyou Istchee, while white indicates no significant difference.

Sources: - MSSS, MED_ÉCHO data banks, 2012-13 to 2014-15;
- MSSS, JBNQA Cree beneficiary lists, 2012 to 2014.

Hospitalizations for an intentional self-harm

Relative ratios when Eeyou Istchee and Nord-du-Québec standardized rates of hospitalizations for intentional self-harm are compared to the rates of the rest of Quebec, 1991-92 to 2014-15



Note: Red markers on Eeyou Istchee's line indicate significantly higher rates when compared to the rest of Quebec. The black line, at 1.0, shows the level at which a result is equal to the result of the rest of the province.

Sources: - MSSS, MED_ÉCHO data banks, 2012-13 to 2014-15;
- MSSS, ISQ population estimates and projections, June 2015.

Total and average annual number of hospitalizations for intentional self-harm, Eeyou Istchee, 2012-13 to 2014-15

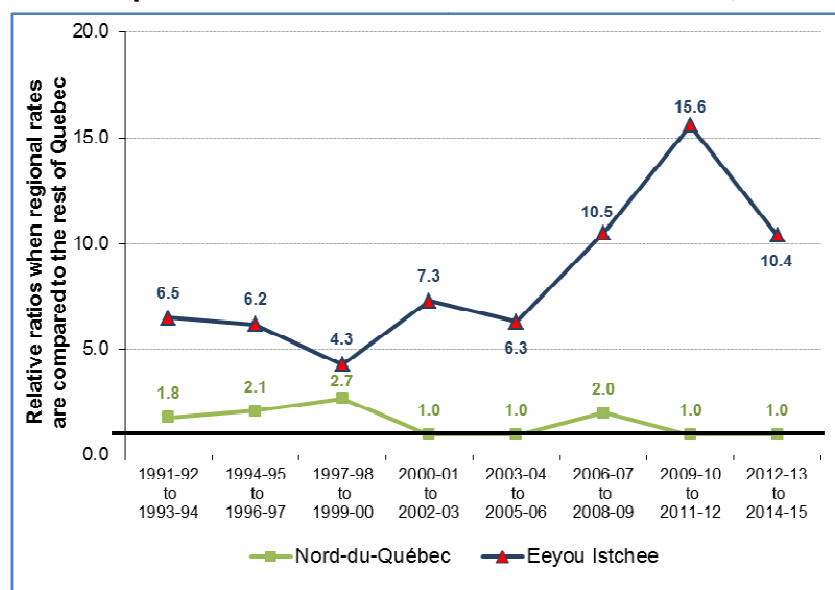
Mean of self-harm	Total number for period	Average annual number
Intentional self-poisoning	85	28.3
Intentional self-harm by sharp object	14	4.7
Intentional self-harm by hanging, strangulation and suffocation	12	4.0
Other mean or unspecified	9	3.0
Total hospitalizations for self-harm	120	40.0

Sources: MSSS, MED_ÉCHO data banks, 2012-13 to 2014-15.

Female / male relative ratio = 1.6 / 1.0: significant difference

Hospitalizations following an assault

Relative ratios when Eeyou Istchee and Nord-du-Québec standardized rates of hospitalizations following an assault are compared to the rates of the rest of Quebec, 1991-92 to 2014-15



Note: Red markers on Eeyou Istchee's line indicate significantly higher rates when compared to the rest of Quebec. The black line, at 1.0, shows the level at which a result is equal to the result of the rest of the province.

Sources: - MSSS, MED_ÉCHO data banks, 2012-13 to 2014-15;
- MSSS, ISQ population estimates and projections, June 2015.

Total and average annual number of hospitalizations following an assault, Eeyou Istchee, 2012-13 to 2014-15

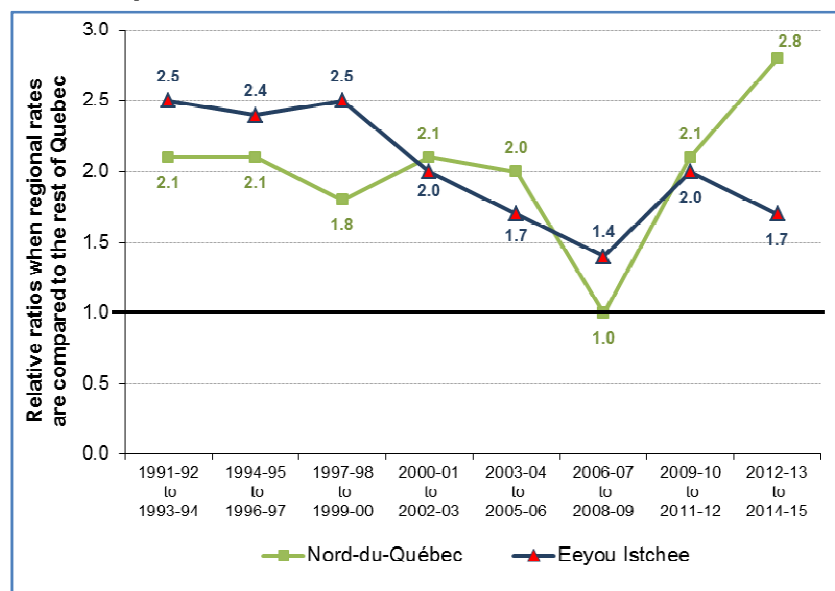
Mean of assault	Total number for period	Average annual number
Assault by bodily force	70	23.3
Assault by sharp object	13	4.3
Assault by blunt object	9	3.0
Other means of assault	10	3.3
Total	102	34.0

Sources: MSSS, MED_ÉCHO data banks, 2012-13 to 2014-15.

Male / female relative ratio = 3.1/1.0: significant difference

Hospitalizations following a transport accident

Relative ratios when Eeyou Istchee and Nord-du-Québec standardized rates of hospitalizations for transport accidents are compared to the rates of the rest of Quebec, 1991-92 to 2014-15



Note: Red markers on Eeyou Istchee's line indicate significantly higher rates when compared to the rest of Quebec. The black line, at 1.0, shows the level at which a result is equal to the result of the rest of the province.

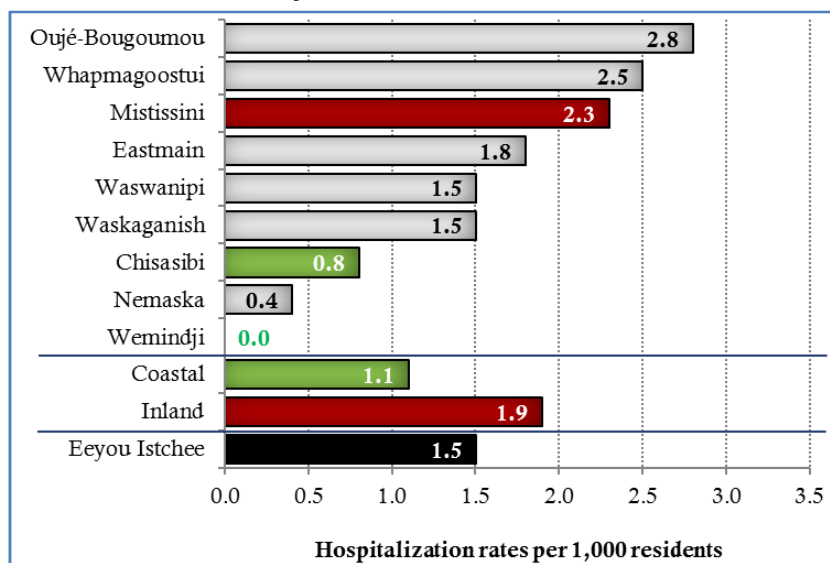
Sources: - MSSS, MED_ÉCHO data banks, 2012-13 to 2014-15;
- MSSS, ISQ population estimates and projections, June 2015.

Total and average annual number of hospitalizations for transport accidents by vehicle type, Eeyou Istchee, 2012-13 to 2014-15

Vehicle type (driver or passenger)	Total number for period	Average annual number
Motor vehicle traffic accidents (all types)	26	8.7
Off-road vehicles non-traffic accidents	25	8.3
Total	51	17.0

Sources: MSSS, MED_ÉCHO data banks, 2012-13 to 2014-15.
No significant difference between male and female.

Hospitalization rates for transport accidents, per 1,000 residents, communities of Eeyou Istchee, 2012-13 to 2014-15



Note: Green indicate significantly lower rates when compared to the rest of Eeyou Istchee, while red indicate significantly higher rates. White indicates no significant difference.

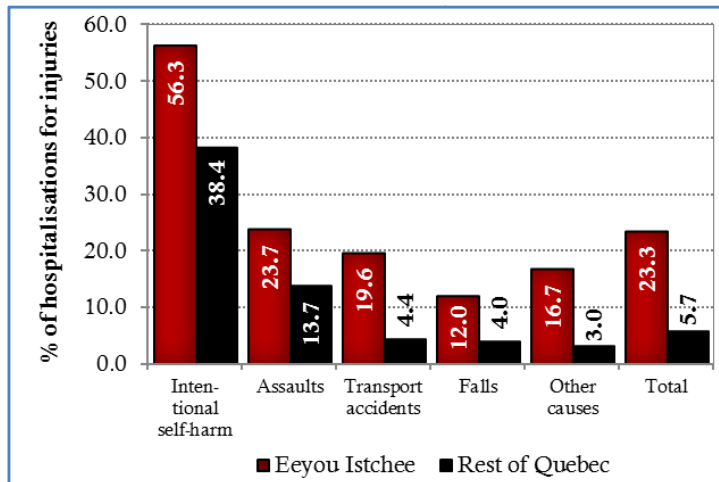
Sources: - MSSS, MED_ÉCHO data banks, 2012-13 to 2014-15;
- MSSS, JBNQA Cree beneficiary lists, 2012 to 2014.

Hospitalizations following an injury, with intoxication

During the period of 2012-13 to 2014-15, some form of intoxication was reported in almost a quarter (23.3%) of all hospitalizations following and accident and involving an Eeyou Istchee resident. This was significantly higher than the provincial rate of 5.7%

Alcohol was the most commonly reported substance used and reported in 83.2% of all hospitalizations following an accident with intoxication.

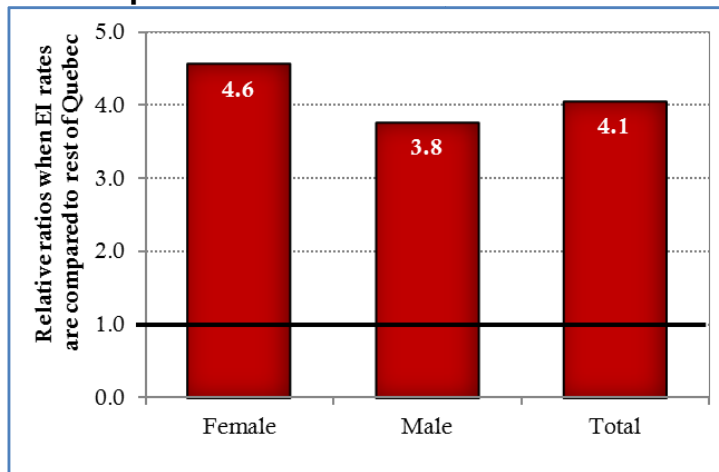
Proportion (%) of hospitalizations for injuries with a primary or secondary diagnosis of intoxication, by type of injury, Eeyou Istchee and rest of Quebec, 2012-13 to 2014-15



Note: Red indicate significantly higher rates when compared to the rest of Quebec.

Sources: MSSS, MED_ÉCHO data banks, 2012-13 to 2014-15;

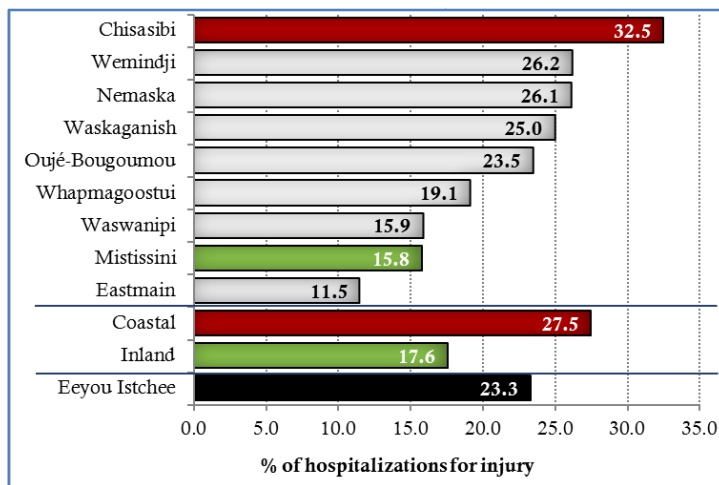
Relative ratios when Eeyou Istchee standardized rates of hospitalizations for injuries with a primary or secondary diagnosis of intoxication are compared to the rates of the rest of Quebec, 2012-13 to 2014-15



Note: Red indicate significantly higher rates when compared to the rest of Quebec.

Sources: MSSS, MED_ÉCHO data banks, 2012-13 to 2014-15;

Hospitalization rates for hospitalizations for injuries with a primary or secondary diagnosis of intoxication, per 1,000 residents, communities of Eeyou Istchee, 2012-13 to 2014-15



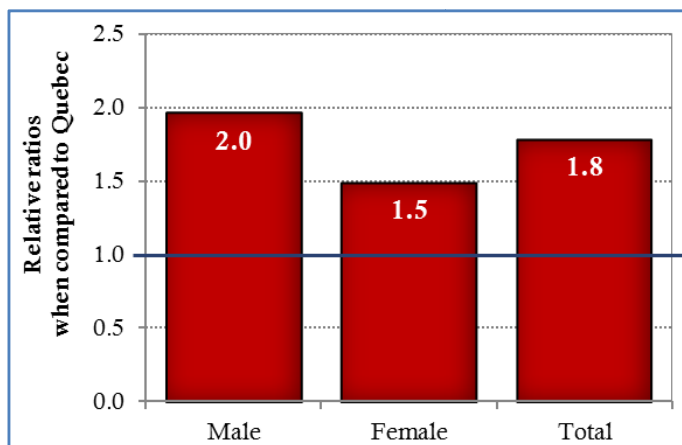
Note: Green indicate significantly lower rates when compared to the rest of Eeyou Istchee, while red indicate significantly higher rates. White indicates no significant difference.

Sources: - MSSS, MED_ÉCHO data banks, 2012-13 to 2014-15;
- MSSS, JBNQA Cree beneficiary lists, 2012 to 2014.

Mortality following an injury

Once standardized for age and sex structure difference, the regional mortality rate was 1.8 times the rate of Quebec during the latter period. Males die of injuries at a much higher rate than females, and twice as much as males in Quebec.

Relative ratios when standardized mortality rates following an injury are compared to Quebec by sex, Eeyou Istchee, 2009 to 2013

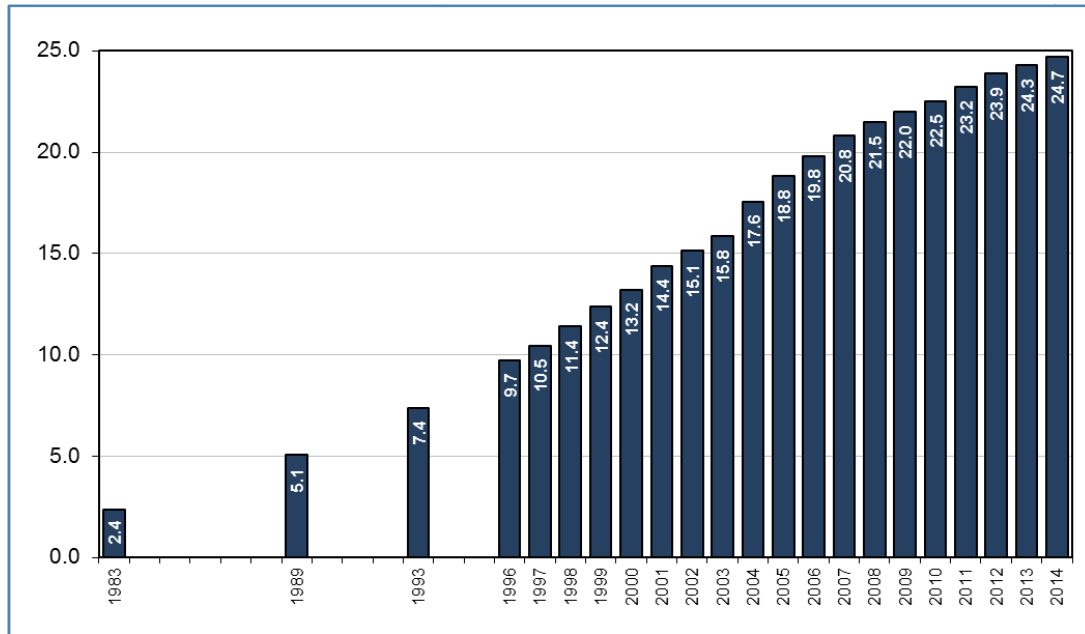


Sources: - MSSS, Mortality database, 2009 to 2013;
- MSSS, ISQ population estimates and projections, June 2015.

Diabetes

As of December 31st, 2014, almost a quarter of the Cree population aged 20 years or more had been diagnosed with diabetes.

Crude prevalence (%) of diabetes, population aged 20 years and over, Eeyou Istchee, 1983 to 2014

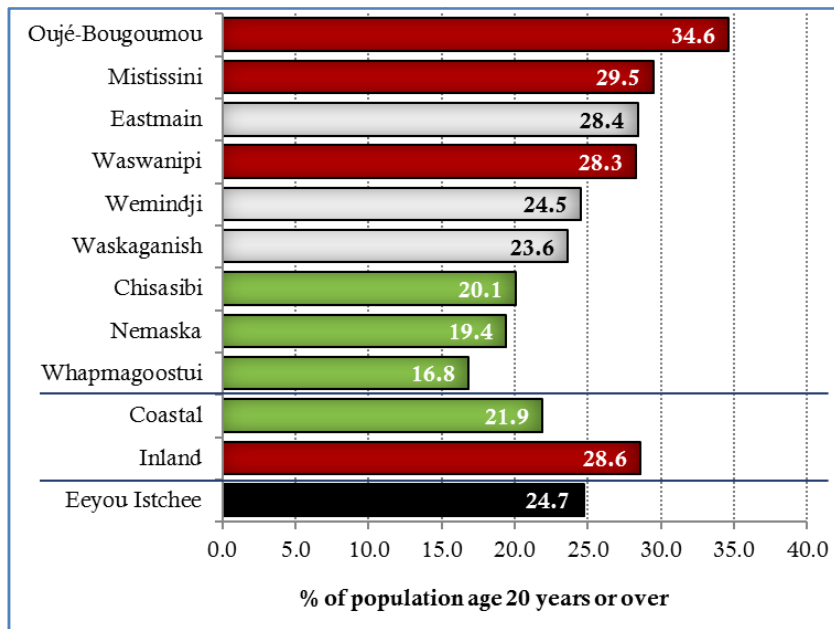


Note: 1983, 1989 and 1993 rates were initially reported for 15 years and over. The rates presented here were corrected to 20+.

Sources: - 1983 data from Thouez et al. (1990);
- 1989 data from Brassard et al. (1993);
- 1993 data from Veronneau and Robinson (1993);
- 1996 to 2014: CDIS, October 2015 extractions (revised);
- MSSS, James Bay Agreement beneficiary list, estimates for December 31st of each year.

Oujé-Bougoumou had the highest rate of people with diabetes, while Chisasibi, Nemaska and Whapmagoostui, the lowest.

Crude prevalence (%) of diabetes, population aged 20 years and over, communities of Eeyou Istchee, 2014



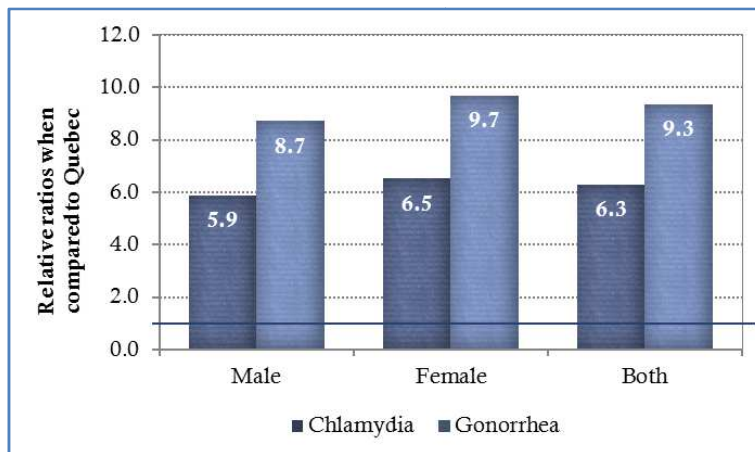
Note: Green indicate significantly lower rates when compared to the rest of Eeyou Istchee, while white indicates no significant difference.

Sources: - CDIS, October 2015 extractions (revised);
- MSSS, JBNQA Cree beneficiary lists, estimates for December 31st 2014.

Sexually Transmitted Infections (STI)

Once standardized for age and sex structure difference, the 2013 regional Chlamydia rates are 6.3 times the Quebec average, while Gonorrhea rates are 9.3 times. Rates have increased considerably from 2004 to 2013 with 38% more Chlamydia cases and 178% more Gonorrhea. Hepatitis C rates are sporadic in the region, with 13 cases reported during the 2009 to 2013 period. HIV rates are low for now, with just a few positive cases.

**Relative ratios when standardized STI rates are compared to Quebec by sex,
Eeyou Istchee, 2011 to 2013**



Sources: - LSPQ, MADO database, 2011 to 2013;
- MSSS, ISQ population projections, 2010;
- INSPQ, Portrait des ITSS, 2013.

Body Weight

Obesity is a high risk factor for chronic diseases in the region. Historical data indicates that the obesity rate, based on a BMI (Body Mass Index) of 30 or greater, has increased greatly in the region, going from 39.4%, in 1991, to 70.0%, in 2002-2009 for those aged 18 years and over.

**Obesity rates among persons aged 18 years and over,
Eeyou Istchee, 1991, 2003 and 2002-2009**

Body weight	1991	2003	2002-2009
Normal (BMI <25)	23.4	12.6	8.5
Overweight (BMI >=25 and <30)	37.3	32.5	21.5
Obese (BMI >=30)	39.4	54.8	70.0

Note: There were methodological differences between the three sources so these results should be treated as indicating certain trends only.

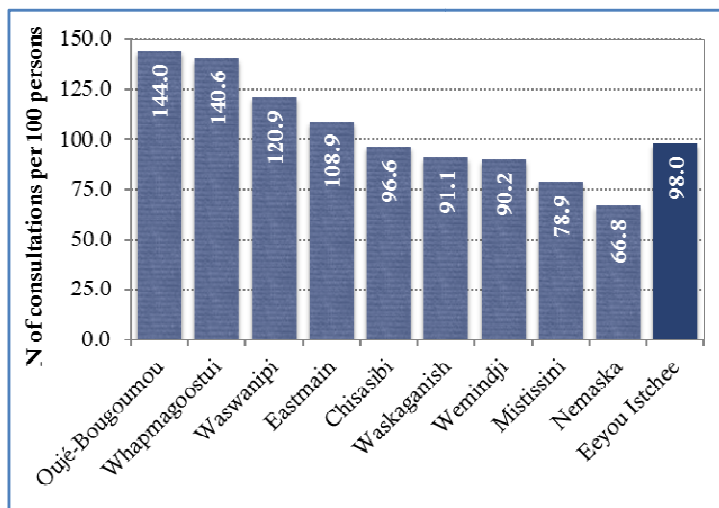
Sources: - CNHSSJB/INSPQ Canadian Community Health Survey, 2003.
- Exposure and preliminary health assessments of the Oujé-Bougoumou Cree population to mine tailings residues, 2002;
- Nituuchischaayihitaaui Aschii Survey, 2005 to 2009.

Dentistry

Dental health in Eeyou Istchee is worse than elsewhere in Quebec. Among Eeyou children of school age aged 5 to 12 years, 2000 have an evident need for treatment of caries, 2000 to 2500 are at elevated risk of developing an irreversible dental carie; on average, from 7 baby teeth to 12 permanent teeth are irreversibly decayed, missing, or filled. In 2014-15, 330 children or 10% of the 1 to 9 year old population, were referred for general anesthesia in Montreal. Each year, around 23 individuals are hospitalized for dental health problems. Among these, 13 are 9 year old or younger. On average their hospitalization last two days.

Today, every community has at least one dentist. In 1998, the total number of dentists in Eeyou Istchee was 9 — 1 dentist for 1,300 residents. In 2008, this rose to 17 dentists — 1 for every 860. In contrast, Montreal had 1 dentist for every 1,560 persons in 2012 and the province had 1 for every 2,225.

Dentist consultations per 100 persons by community of Eeyou Istchee, 2013-2014



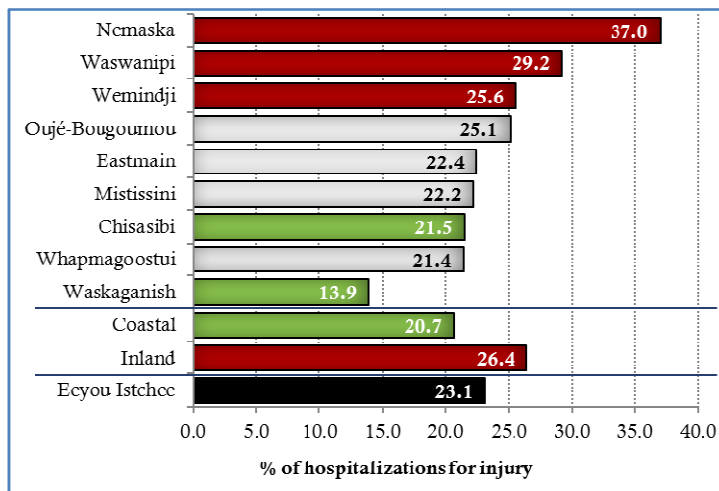
Sources: - CBHSSJB annual report, 2013-2014;
- MSSS, JBNQA Cree beneficiary list, 2013.

The waiting time for treatment in most clinics is satisfactory, except for Chisasibi and Whapmagoostui where the waiting time is over six months and emergency appointments are still very common.

Once weighted for population change, the total number of visits (not individual patients) to the dentist in Eeyou Istchee decreased from 105.9 per 100 residents, in 2003-2004, to 98.0 in 2013-2014 (-7.5%).

Dental clinic performance is hindered by a very high level of absenteeism for dental appointments. Almost one out of four appointments (23.1%) in Eeyou Istchee is a no-show. Chisasibi, Nemaska, Waswanipi and Wemindji have higher rates of no-shows than the other communities of Eeyou Istchee while Waskaganish has a lower rate.

Proportion of no-shows per 100 dentist appointments by community of Eeyou Istchee, 2013-2014



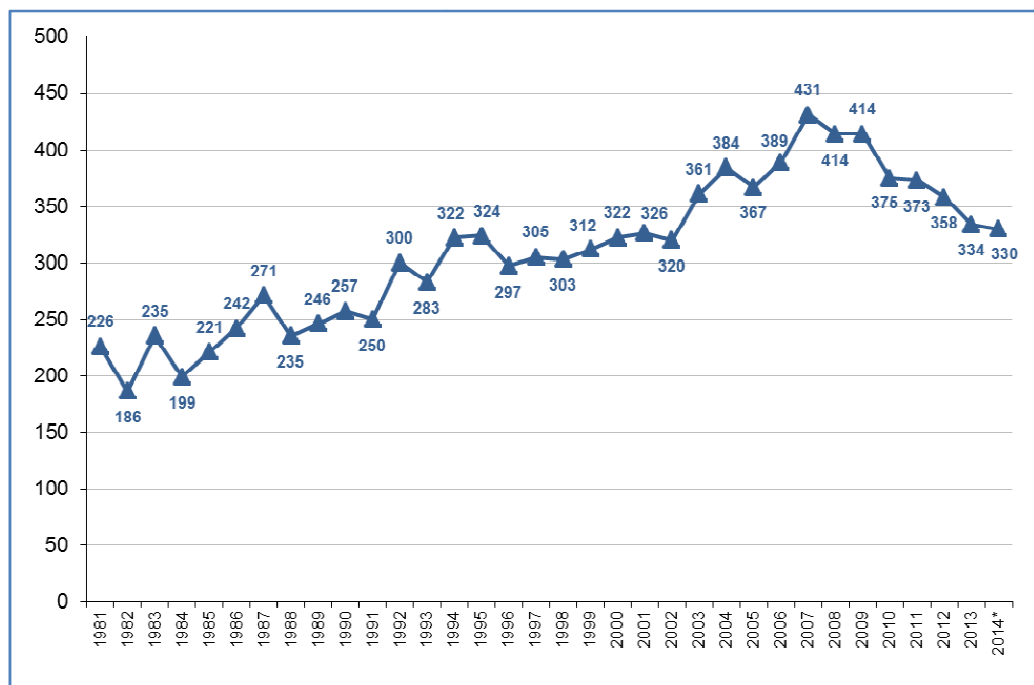
Source: CBHSSJB annual report, 2013-2014

7- Maternal and Infant Health

Number of births

The number of live births in Eeyou Istchee has fluctuated through the years, with an average annual number of 354 during the period of 2010 to 2014. The average annual number of births between 2011 and 2013 by community was: Chisasibi-97, Eastmain-19, Mistissini-65, Nemaska-14, Uujé-Bougoumou-16, Waskaganish-54, Waswanipi-45, Wemindji-28, Whapmagoostui-18.

Number of live births, Eeyou Istchee, 1981 to 2014



Note *: The 2014 figure is only available for the region and not at the community level.

Sources: - INSPQ, Infocentre de santé publique, 2016-02-11 extraction;

- 2014: MSSS, Naissances, décès, accroissement naturel et mariages par MRC, Québec, 2002-2014.

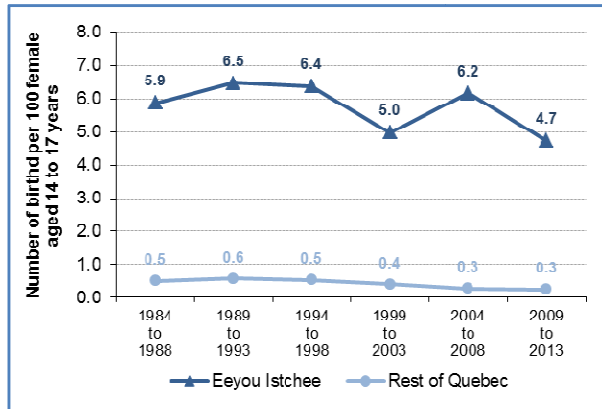
Mothers' age at time of delivery

The average age of mothers from Eeyou Istchee at the time of delivery continues to be about 3.5 years younger than the average age of other mothers from the rest of Quebec, even though the average age has increased steadily since 1984-1986.

Teen pregnancy

In Eeyou Istchee, teenagers' annual delivery rate has fluctuated over time. During the period of 1984-1988, of all teens aged 14 to 17, on average, 5.9% of them delivered a live infant. This declined to an average of 4.7% each year in the 2009-2013 period (an annual average of 27 / 562 live deliveries).

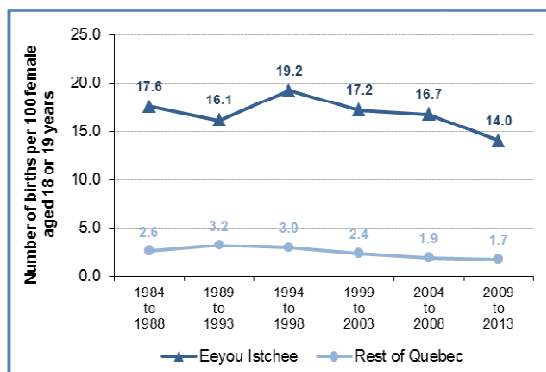
Annual average number of deliveries per 100 teens aged 14-17 years, Eeyou Istchee and Quebec, 1984-1988 to 2009-2013



Sources: - MSSS, Births data bank, 1984 to 2013;
 - ISQ, Population estimates and projections, 1981 to 2005, January 2010;
 - ISQ, Population estimates and projections, 2006 to 2036, June 2015.

As well, during the period of 1984-1988, of all teens aged 18 to 19, on average, 17.6% of them delivered a live infant each year. This declined to an average of 14.0% each year in the 2009-2013 period (an annual average of 39 / 276 live deliveries).

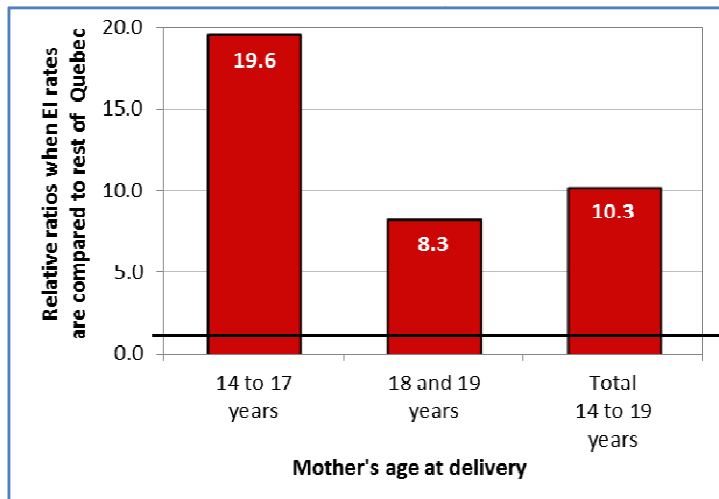
Annual average number of deliveries per 100 teens aged 18-19 years, Eeyou Istchee and Quebec, 1984-1988 to 2009-2013



Sources: - MSSS, Births data bank, 1984 to 2013;
 - ISQ, Population estimates and projections, 1981 to 2005, January 2010;
 - ISQ, Population estimates and projections, 2006 to 2036, June 2015.

When compared to the rest of Quebec, the teen delivery ratios were respectively 19.6 times higher for teens aged 14 to 17 years old and 8.3 times higher for teens aged 18 and 19 years old. Overall, the teen delivery ratio in Eeyou Istchee compared to Quebec was 10.3 times higher for all teens aged 14 to 19.

Relative ratios when Eeyou Istchee's teen delivery rates are compared to the rates of the rest of Quebec, 2009-2013



Note: Red indicates significantly higher rates when compared to the rest of Quebec. The black line at 1.0 show the level at which both regions are equal.

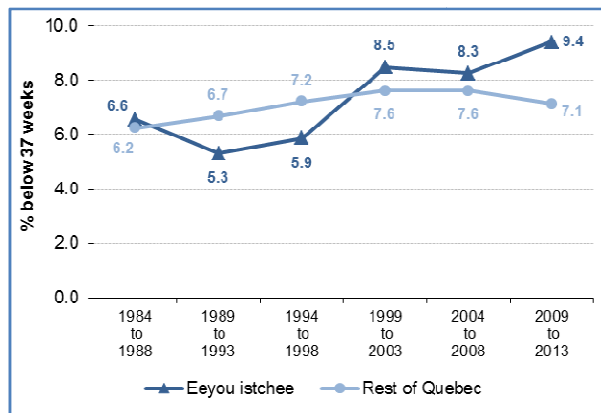
Sources: - MSSS, Births data bank, 2009 to 2013;

- ISQ, Population estimates and projections, 2006 to 2036, June 2015.

Prematurity

The rate of premature births born live before 37 weeks of gestation has fluctuated from the early 1980s, sometimes above and sometimes below the Quebec rate. In the latest 2009-2013 period, 9.4% of all live births were premature (an annual average of 34 / 365 live births). This current rate for the 2009-2013 period is 1.3 times the rate for the rest of the province.

Proportion of live births with gestational duration below 37 weeks, Eeyou Istchee and rest of Quebec, 1984-1988 to 2009-2013

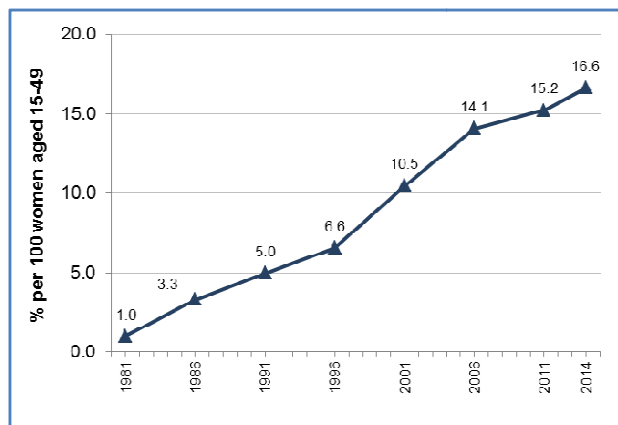


Source: INSPQ, Infocentre de santé publique, 2016-02-17 extraction

Diabetes in pregnancy

When a mother has diabetes, not only will her pregnancy have increased risks, but her infant will be born with a significantly increased risk of developing type 2 diabetes at an early age. Diabetes in pregnancy is divided between gestational diabetes mellitus (GDM) and pre-existing type 2 diabetes. Impaired glucose tolerance in pregnancy (IGT-P) is currently included in GDM as it is clinically very similar. The number of women of childbearing age (aged 15 to 49 years) diagnosed with type 2 diabetes has risen from almost none (0.8%) prior to 1981, to 16.6%, in 2014 (739 cases out of a population of 4,442 women aged 15 to 49 years).

Proportion of women of childbearing age (15-49 years) with type 2 diabetes, Eeyou Istchee, 1981 to 2014



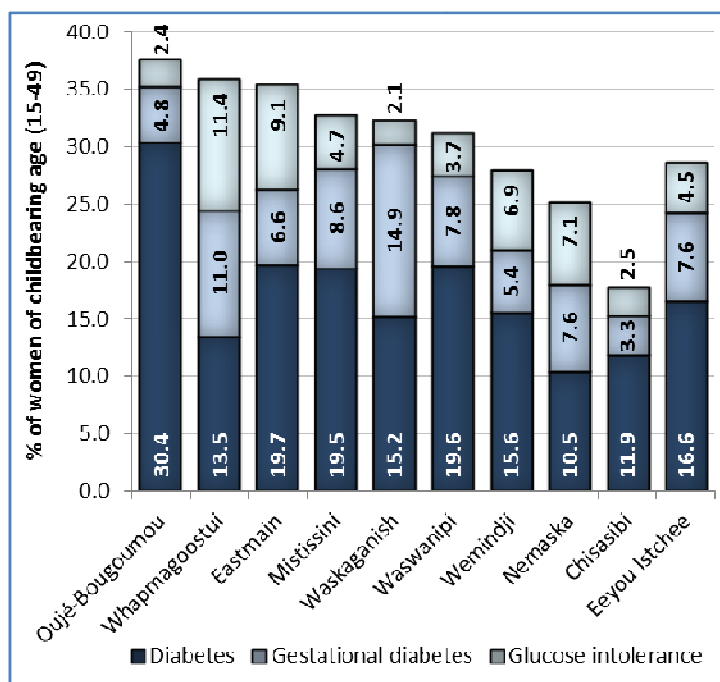
Sources: - Cree Diabetes Information System, 2014;
- MSSS, JBA beneficiary list, 1982 to 2015.

Gestational diabetes

The diabetes reporting system is fairly accurate for reporting Type 2 diabetes. It may be less complete for gestational diabetes mellitus (GDM) and impaired glucose tolerance (IGT). In the most recent report (to the end of December 2014), apart from those already diagnosed with type 2 diabetes, 7.6% of women of childbearing age (15-49 years) had had at least one episode of GDM while an additional 4.5% had tested positive to an Impaired glucose tolerance (IGT) test done when they were not pregnant.

Overall, diabetes-related conditions have affected a minimum of 28.7% of women of childbearing age in the region. The communities with the lowest and the highest proportions had 17.7% and 37.6% respectively. Not surprisingly, in the 2012-13 to 2014-15 period, mothers from Eeyou Istchee were hospitalized 7.1 times more frequently than mothers from the rest of Quebec for diabetes related conditions.

Diabetes, gestational diabetes and impaired glucose tolerance rates per 100 women of childbearing age (15 to 49 years), Eeyou Istchee, December 31st, 2014

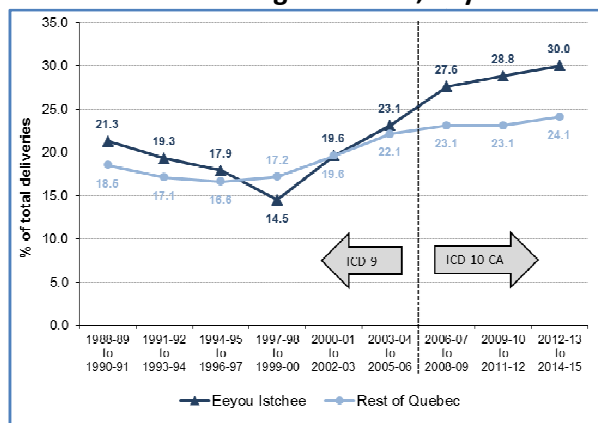


Sources: - Cree Diabetes Information System, 2014;
- MSSS, JBA beneficiary list, 2014 and 2015.

Caesarean sections

C-section rates have seen a dramatic increase from 21.3% in the 1988-89 to 1990-91 period, to 30.0%, in the 2012-13 to 2014-15 period (an annual average of 98 cases / 328 deliveries). In the same period, Quebec's rates increased from 18.5% to 24.1%.

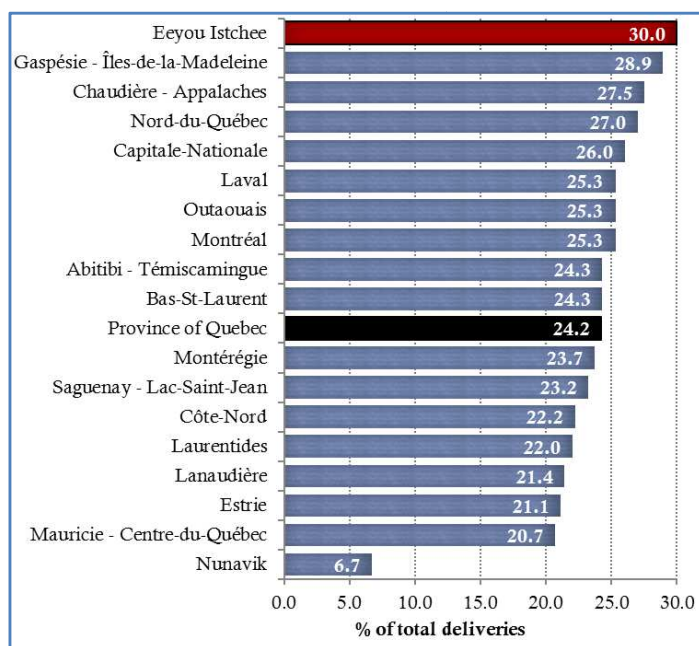
C-section rates among deliveries, Eeyou Istchee and Quebec, 1988-89 to 2014-15



Sources: MSSS, MED-ECHO databases, 1988-89 to 2014-15

Eeyou Istchee is now the health region in Quebec with the highest rate of C-sections, a significant difference with the rest of Quebec.

C-section rates among deliveries by health region, Quebec, 2012-13 to 2014-15

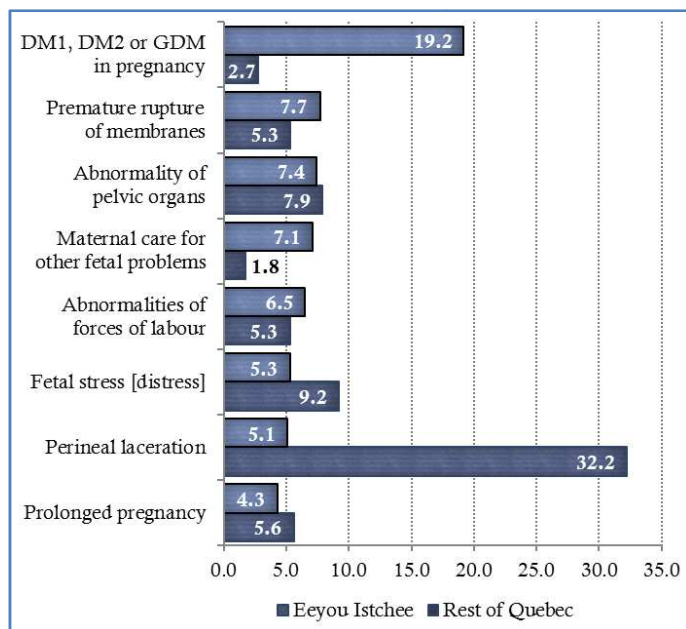


Note: Red indicates significantly higher rates when compared to the rest of Quebec.

Sources: MSSS, MED-ECHO databases, 2012-13 to 2014-15

Mothers' hospitalisations at delivery

Proportion of mother's hospitalizations* at time of delivery by main diagnosis, per 100 deliveries, Eeyou Istchee and rest of Quebec, 2012-13 to 2014-15



Note *: Women slated for a C-section are included

Sources: MSSS, MED-ECHO databases, 2012-13 to 2014-15

Average annual number of hospitalization of mothers at time of delivery by main diagnosis, Eeyou Istchee, 2012-13 to 2014-15

DM1, DM2 or GDM in pregnancy	Premature rupture of membranes	Abnormality of pelvic organs	Maternal care for other fetal problems	Abnormalities of forces of labour	Fetal stress (distress)	Perineal laceration	Prolonged pregnancy
63	25	24	23	21	17	17	14

Note *: Women slated for a C-section are included

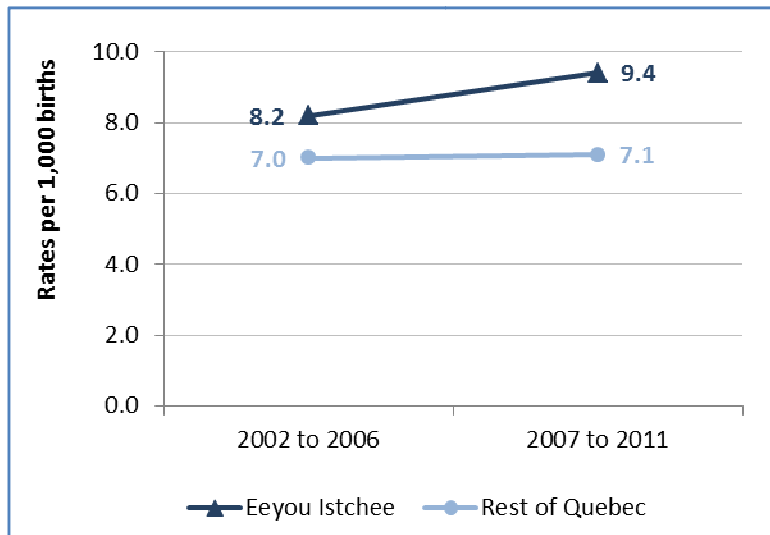
Sources: MSSS, MED-ECHO databases, 2012-13 to 2014-15

Perinatal mortality

Perinatal mortality is based on the number of still-births and of infants who died aged 6 days or less (less than week).

Although some fluctuations show up in the rates, there are no significant differences between the two periods or between Eeyou Istchee and the rest of Quebec. There were a total of 19 perinatal deaths during the period of 2007-2011, or less than 4 cases on average, per year, in a total of 2,015 births (including stillbirths).

Perinatal* mortality rates per 1,000 births, Eeyou Istchee and Rest of Quebec, 5 year period average, 2002-2006 to 2007-2011



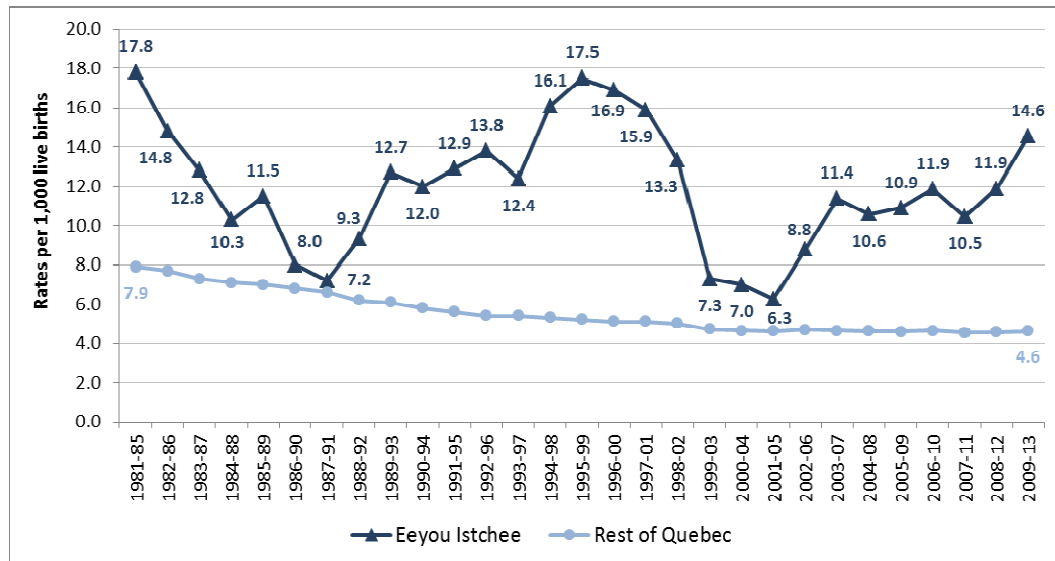
Source: INSPQ, Infocentre de santé publique, 2016-02-11 extraction

Infant mortality

Infant mortality is based on the death of infants aged 364 days or less (less than a year). Stillbirths are not included.

Infant mortality rates in Eeyou Istchee have fluctuated a lot over time, and have increased in the past 5 years reported (2009-2013) to 14.6 deaths per 1,000 live births (an annual average of 5 deaths / 371 live births) during the same period, resulting in a significant difference 3.2 times the rate of the rest of the province.

Infant mortality, 5 year moving average*, Eeyou Istchee and Quebec, 1991-1995 to 2009-2013

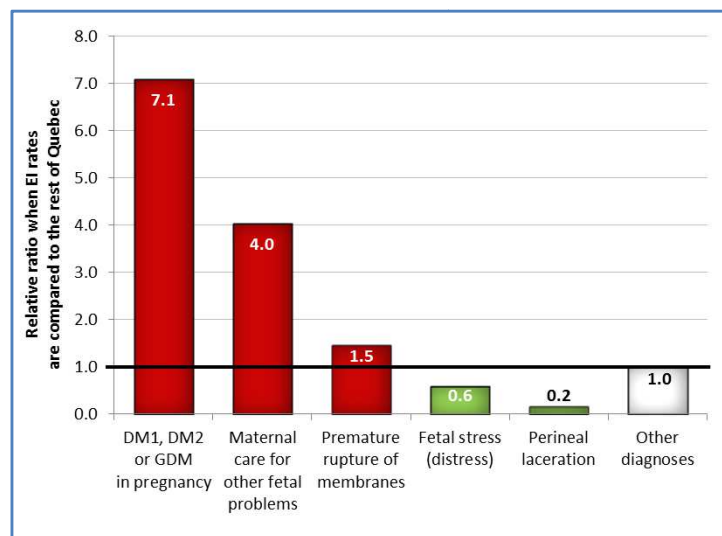


Note *: A moving average is a method commonly used with time series data to smooth out short-term fluctuations.

Sources: - Écho-Santé Québec, 1991 to 2003;

- INSPQ, Infocentre de santé publique, 2016-02-11 extraction.

Relative ratios when Eeyou Istchee mother's hospitalization rates are compared to the rates of the rest of Quebec, 2012-13 to 2014-15



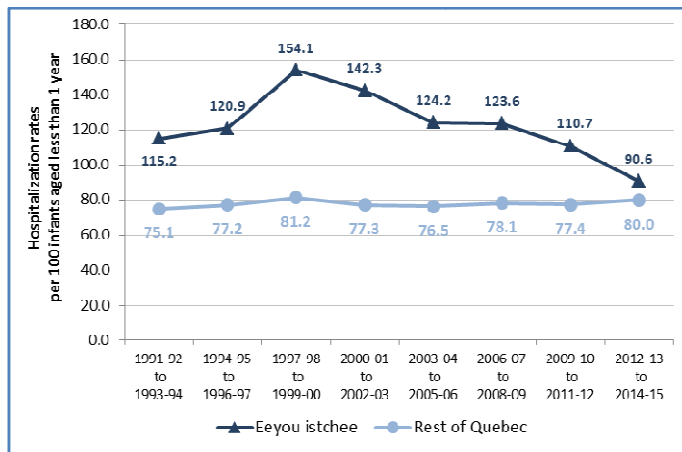
Note: Red indicates significantly higher rates when compared to the rest of Quebec, while green indicates significantly lower rates. White indicates no significant difference. The black line at 1.0 show the level at which both regions are equal.

Sources: MSSS, MED-ECHO databases, 2012-13 to 2014-15

Infant morbidity: aged less than 1 year old

The hospitalization rates for infants aged less than one year has constantly declined since the 1997-98 – 1999-00 period, reaching a level almost at par with the rest of Quebec, but still significantly higher.

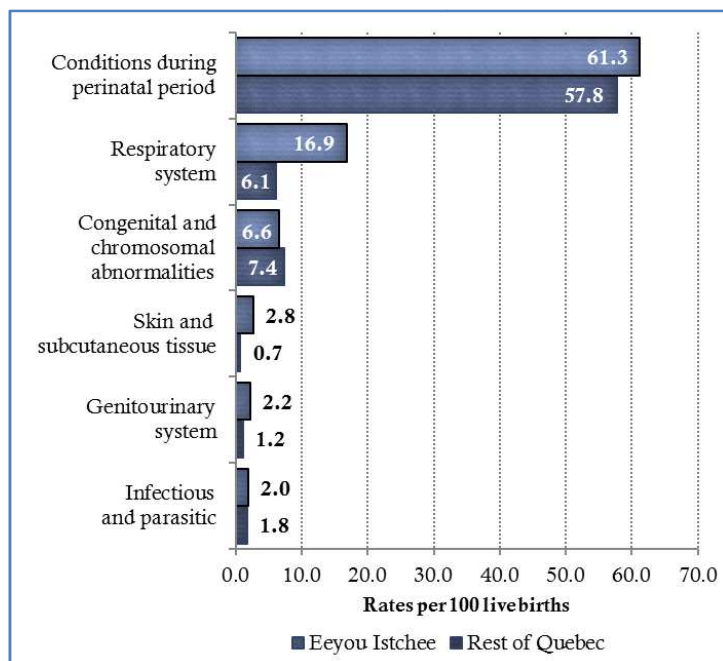
Hospitalization rates during the first year of life, Eeyou Istchee and rest of Quebec, 1991-92 to 2014-15



Source: INSPQ, Infocentre, 2016-02-14 extraction

During the 2012-13 to 2014-15 period, the primary cause of hospitalizations of Eeyou infants aged less than 1 year were under the code of “Conditions during the perinatal period” (annual average of 205 / 340 live births). This accounted for more than six hospitalizations out of 10, resulting in a hospitalization rate of 61.3 per 100 infants, about the same as what is observed in the rest of Quebec.

**Hospitalization rates per 100 infants aged less than 1 year
by main diagnosis, Eeyou Istchee and rest of Quebec, 2012-13 to 2014-15**



Sources: - INSPQ, Infocentre de santé publique, 2016-02-11 extraction;
- MSSS, MED-ÉCHO databases, 2012-13 to 2014-15.

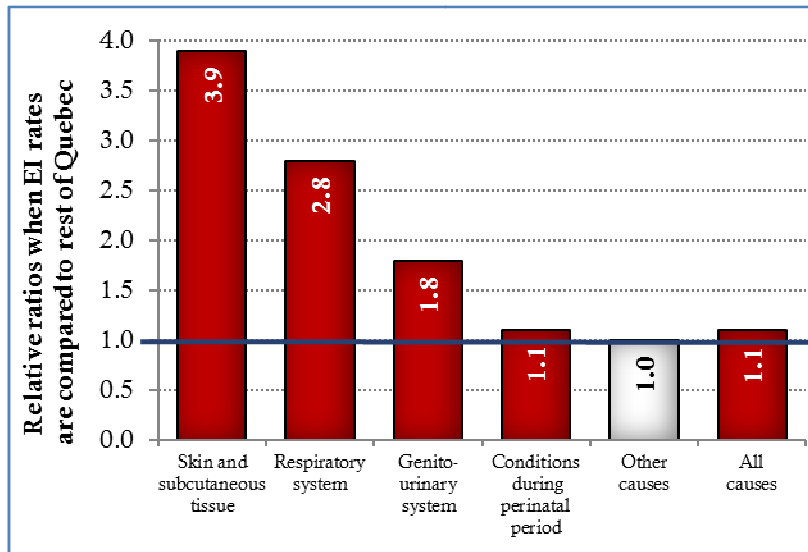
**Average annual number of hospitalization of infants aged less than 1 year
by main diagnosis, Eeyou Istchee, 2012-13 to 2014-15**

Conditions during perinatal period	Respiratory system	Congenital and chromosomal abnormalities	Skin and subcutaneous tissue	Genitourinary system	Infectious and parasitic	All causes
205	57	22	10	7	7	340

Sources: - INSPQ, Infocentre de santé publique, 2016-02-11 extraction;
- MSSS, MED-ÉCHO databases, 2012-13 to 2014-15.

The most significant differences for that age group were hospitalizations for “Skin and subcutaneous tissues diseases”, at 3.9 times the rate of the rest of the province but with only 10 cases on average per year, and “Respiratory system diseases” at 2.8 times the rate of the rest of Quebec with an annual average of 57 cases.

Relative ratios when hospitalization rates of EI infants aged less than 1 are compared to the rest of Quebec, 2012-13 to 2014-15



Note: Red indicates significantly higher rates when compared to the rest of Quebec, while White indicates no significant difference. The black line at 1.0 shows the level at which both regions are equal.

Sources: - INSPQ, Infocentre de santé publique, 2016-02-11 extraction;
 - MSSS, MED-ÉCHO databases, 2012-13 to 2014-15.