Nunavik health profile - 2018

Population health - 15 years of age or older

Medical-administrative component

PRODUCTION

The team responsible for Aboriginal health considerations at the Institut national de santé publique du Québec (INSPQ) was mandated by the Nunavik Regional Board of Health and Social Services (NRBHSS) to produce this profile.

WRITING

Institut National de santé publique du Québec (INSPQ)

COORDINATION

Julie Laforest, MA, Scientific unit head
Direction - Développement des individus et des communautés, INSPQ (2021)

Roseline Olivier-Pilon, Social worker, M. Sc., Scientific unit head
Direction - Développement des individus et des communautés, INSPQ (2019-2020)

WITH THE COOPERATION OF

Moisan, Caroline, PhD, Scientific advisor
Direction - Développement des individus et des communautés, INSPQ (2021)

Anne-Julie Lafrenaye-Dugas, Ph. D., Scientific advisor
Direction - Développement des individus et des communautés, INSPQ (2021)

Gabrielle Désilets, Ph. D., Scientific advisor
Direction - Développement des individus et des communautés, INSPQ (2019-2020)

Marianne Dubé, Research technician
Direction - Développement des individus et des communautés, INSPQ (2019-2020)

Faisca Richer, MD, M. Sc., CMSQ, FRCPC, Medical specialist, Public health
Direction - Développement des individus et des communautés, INSPQ (2017-2019)

Isabelle Duguay, B. Sc. N., Scientific advisor
Direction - Développement des individus et des communautés, INSPQ (2017-2019)

Marie Hélène Lussier, Scientific advisor
Bureau d'information et d'études en santé des populations, INSPQ (2017- 2019)

Carolyne Alix, M. Sc., Scientific advisor
Bureau d'information et d'études en santé des populations, INSPQ (2017- 2019)

Susie Gagnon, M.A., Scientific advisor
Direction de l'analyse et de l'évaluation des systèmes de soins et des services, INSPQ (2017- 2019)

Nathalie Auger, M.D., M. Sc., FRCPC, Medical specialist,
Bureau d'information et d'études en santé des populations, INSPQ (2017- 2019)

Christine Blaser, Ph. D., Specialized scientific advisor
Bureau d'information et d'études en santé des populations, INSPQ (2017- 2019)

Marie-Claude Boisclair, B. Sc., Statistician
Bureau d'information et d'études en santé des populations, INSPQ (2017- 2019)

Nathalie Gravel, DESS SIG, Geomatics analyst,
Bureau d'information et d'études en santé des populations, INSPQ (2017- 2019)

Siyi He, M. Sc., Scientific advisor
Bureau d'information et d'études en santé des populations, INSPQ (2017- 2019)

Ernest Lo, Ph. D., Statistician and in-house researcher
Bureau d'information et d'études en santé des populations, INSPQ (2017- 2019)

Sylvie Martel, M. Sc., Scientific advisor
Bureau d'information et d'études en santé des populations, INSPQ (2017- 2019)

Matthieu Tandonnet, DESS SIG, Geomatics analyst,
Bureau d'information et d'études en santé des populations, INSPQ (2017- 2019)

AND MEMBERS OF THE NUNAVIK REGIONAL BOARD OF HEALTH AND SOCIAL SERVICES (NRBHSS)

Marie Rochette, MD, M. Sc., FRCPC, Director of Public Health

Fabien Pernet, Assistant to the Executive Director

AS WELL AS REVISERS

Marie-Noëlle Caron, MD, M.Sc.

Marie Josée Gauthier, Planning, programming and research officer

Philippe Dufresne, Data Analyst

Sébastien Dubé, M. Sc., M.B.A., QEPE (Quality, Evaluation, Performance and Ethics) team coordinator

Hamado Zoungrana, M.Sc., Research and surveillance officer

The revisers were asked to provide comments as to the pre-final version of this notice and as such, did not revise nor endorse the final content.

We wish to thank all of our collaborators for their help with the extraction, analysis and interpretation of the statistics put forth, as well as everyone who provided comments and edited the content during the revision phase.

Suggested quote:

Institut national de santé publique du Québec. Nunavik health profile - 2018: The health of adults and seniors [unpublished document]. Nunavik Regional Board of Health and Social Services (NRBHSS) and Institut National de santé publique du Québec (INSPQ).

Table of Contents

List of figures

List of abbreviations and acronyms

PYLL	Potential years of life lost
BIESP	Bureau d'information et d'études en santé des populations
UTHC	Ungava Tulattavik Health Centre
INSPQ	Institut national de santé publique du Québec
DSD	Digestive system diseases
CSD	Circulatory system diseases
RSD	Respiratory system diseases
MSSS	Ministère de la Santé et des Services sociaux (department of health and social services)
NRBHSS	Nunavik Regional Board of Health and Social Services
IT or NIT	Intentional trauma or Non-intentional trauma
TCBJ	Terres-Cries-de-la-Baie-James region
DS	Digestive system
RS	Respiratory system
MV	Motor vehicles
ORV	Off-road vehicles

Highlights

Major variances still present in terms of general health in Nunavik and Québec

Over the past 15 years, the life expectancy of women in Nunavik stayed steady at 69 years while that of men increased by 5 years, to reach 66 years. The variance between life expectancy in Nunavik and elsewhere in Québec continues to grow, both for women and for men, and was at an average of 15 years for the period from 2010 to 2014.

The increase in the life expectancy of men is consistent with the slight decrease (non-significant) in mortality (all causes combined) for this same group. Conversely, hospitalizations, for all types of causes, have grown significantly over the last two decades. This rise, however, can be attributed to changes in the criteria for reporting hospitalizations at the Ungava Tulattavik Health Centre (UTHC)[1] in 2012.

The primary causes of mortality and hospital morbidity vary depending on age. Youth and adults (15 to 54 years old) are particularly touched by non-intentional trauma (NIT)[2], whereas seniors (55 years or more) mostly suffer from complications associated with chronic diseases, such as cancer, respiratory system diseases (RSD) and circulatory system diseases (CSD).

Non-intentional trauma – Primary cause of mortality and morbidity among youth and adults between 15 and 54 years old

While mortality due to NIT is decreasing in Nunavik, the rates in the region are still very high compared to other populations with similar characteristics as that in Nunavik[3]. The primary causes vary according to age group. For the 15 to 34 year old group, off-road vehicles (ORV) and motor vehicles (MV) take first and second place as regards causes of NIT; falls are in the number one spot for persons aged 35 years or more.

The number of hospitalizations due to NIT has grown significantly in Nunavik, particularly among the 15 to 34 year old age group[4]. There has also been a marked rise in the rate of hospitalizations due to falls between 2007 and 2017[4].

As for intentional trauma (IT)[2], it was observed that over the past few years, mortality rates by suicide and homicide in the region remained stable at significantly higher rates than those of other populations in Québec. Hospitalization rates for suicide attempts and assault, however, rose significantly between 2007 and 2017, particularly among young adults between the ages of 15 and 34[4].

The health of seniors aged 55 years or more – Emergence of chronic diseases

The primary chronic diseases noted among the elderly were cancers, RSD and CSD. The most prevalently encountered cancers in Nunavik are cancers of the respiratory system (RS) and the digestive system (DS). And while cancer cases are likely to grow in Nunavik over the next decades, cancer rates for the region are quite similar to those elsewhere in Québec. In addition, mortality rates due to cancer continue to be significantly higher in Nunavik than elsewhere in Québec. And yet, hospitalization rates for all types of cancers are dropping in Nunavik, bringing the statistics for the region closer to those of other regions of Québec. Hospitalization rates due to cancer are higher for the population of the Hudson Coast than that of the Ungava Coast.

1 This modification to the reporting criteria is addressed in section 2, *Methodological note*.

2 See section 3.3 for a definition of IT and NIT.

3 More specifically, regions 10 (Nord-du-Québec) and 18 (Terres-Cries-de-la-Baie-James).

4 This increase can nonethleless be partly explained by the change in the reporting of hospitalizations at the UTHC in 2012.

With the exception of hospitalizations related to tuberculosis, hospitalization and mortality rates involving respiratory system diseases (RSD) are decreasing. Tuberculosis rates were rising in Nunavik these past few years, with youth between the ages of 15 and 34 being particularly impacted by RSD. And while the mortality rate for CSD appears to have dropped over the past few years in Nunavik, hospitalizations in the region are rising.

1 Objectives and background

Three health profiles[5] were established for the purpose of providing an overall portrait of the health of the entire Nunavik population. These profiles present the medical-administrative data available up to 2018, and constitute an updated portrait of the health of the Nunavimmiut, given that the previous profiles were prepared in 2014-2015 (NRBHSS, in collaboration with the INSPQ, 2014, 2015). These profiles were developed at the request of the Nunavik Regional Board of Health and Social Services (NRBHSS), in conjunction with the Nunavik Clinical Plan[6] underway, an initiative that will be used in the preparation of a regional health services offer for 2040.

This profile describes the health of the population aged 15 years or more in Nunavik. It begins with an overview of trends in the general health indicators (more specifically, life expectancy) as well as the rates and primary causes of death and hospitalization. The most frequently-encountered problems in certain specific age groups are then addressed, notably intentional trauma and non-intentional trauma as well as chronic diseases. And lastly, the implications of the data presented in this profile on health programs and services to offer the region's population are examined.

To further document the health portrait depicted in this profile, reports published subsequent to the Inuit health survey *Qanuilirpitaa? 2017* are cited when relevant. *Qanuilirpitaa? 2017* is a representative health survey conducted in Nunavik in 2017 which addressed a wide range of health indicators. Overall, 1,326 people aged 16 years or more from Nunavik's 14 communities participated (Hamel et al., 2020). The survey is referred to as *Qanuilirpitaa? 2017* in this profile.

2 Methodological note

2.1 Targeted population and data sources

This profile examines the health of **Nunavik residents aged 15 years or more**. The demographic and socioeconomic data presented in this profile were extracted from several provincial medical-administrative databases, including registers concerning demographic events (births and deaths), the MED-ECHO database[7] on regional hospitalizations, national databases (census information) and data on demographic projections. The primary and secondary sources are noted underneath each figure.

Warning regarding the validity of the Census data: The indicators obtained using data from the 2016 Census should be interpreted with caution as no adjustments were made to compensate for undercoverage. Given the high proportion of nonresponses in Nunavik (15%), there is a significant risk of bias.

Warning regarding the interpretation of projections: Projections must not be interpreted as forecasts of an expected future, but rather, as a possible future should trends continue. As with all statistical projections, the calculation of projections is based on assumptions for predicting population growth. Despite the scientific rigour of these assumptions, actual population growth can differ from what is predicted, particularly at the regional level. These data can also differ slightly from that obtained from other sources, and should thus be interpreted with caution.

Warning regarding the interpretation of data on hospitalizations[8] in Nunavik: Hospitalization indicators (rates, numbers) are based on the home territory (e.g., sociosanitary regions of Québec[9])

[5] The first profile, "Sociodemographic background", addresses various demographic and socioeconomic indicators for the entire Nunavik population (INSPQ, 2021a) and the second one, "The health of mothers and children", explores several health indicators concerning families, mothers and children living in Nunavik (INSPQ, 2021b).

[6] The Clinical Plan is a document that will be submitted to the Ministère de la Santé et des Services sociaux (department of health and social services) (MSSS) for examination and approval. The objective of this document is to clearly define needs, propose pertinent clinical solutions and develop infrastructure models able to support the necessary clinical organization and meet current needs and needs over the next two decades (NRBHSS, 2021).

[7] System that comprises data on hospitalizations in Québec (MED-ECHO).

[8] The data refer to hospitalizations and not to individuals. This is important, as any one individual could be hospitalized on more than occasion over a given period (Institut national de santé publique du Québec, 2015c).

[9] The sociosanitary region targeted in this profile is Nunavik (17), a region that includes the Tulattavik Health Centre in Ungava and the Inuulitsivik Health Centre.

of patients rather than the place of hospitalization (hospital centre). This ensures that the indicators reflect the hospitalization experience of a territory's residents (in this case, Nunavik), regardless of where (the place) they are treated. The main diagnosis is the one used to record hospitalizations; it is the most important trouble or illness presented by the patient during his hospitalization.

In 2012, a significant modification was brought to the criteria for reporting hospitalizations at the Ungava Tulattavik Health Centre (UTHC) in the provincial Register of hospitalizations. The 24 h criterion for hospitalizations was changed to 4 h; it remained at 24 h for all other regional and provincial health centres. This change triggered a marked increase in hospitalizations for the population of the Ungava Coast during the periods studied.

In preparing this profile, it was difficult to determine whether the increase was solely the result of this administrative artifact or rather, a reflection of an actual increase in hospital morbidity. Furthermore, it was impossible to identify whether all types of hospitalization were touched in the same manner. Likewise, this change in recording criteria complicates the task of comparing the populations of the region's two coasts, as well as those of Nunavik and Québec's other sociosanitary regions. Data is thus provided for general information purposes, but no comparisons were drawn.

Because this profile was primarily designed to support an improvement in the health services provided in the Nunavik region, **the control population, for comparison purposes, is that of Québec**. Whenever possible and relevant, data regarding populations in other regions of Québec were presented; these other regions notably included region 10 (Nord-du-Québec) and region 18 (Terres-cries-de-la-Baie-James; TCBJ). Drawing comparisons with populations that are in some ways similar to that in Nunavik allows for revealing startling differences in terms of the health experience of the Nunavik population. In an effort to put the rates presented into perspective, a balloon is included (in the figures) to better illustrate, as a number or a percentage, the true proportion for a given period.

In addition to comparison populations, the data are presented according to gender (male/female), age groups of interest (e.g., 0-14 years, 15-34 years, 35-54 years) and home coast (Ungava Coast/Hudson Coast). The age groups illustrated vary according to the data sources.

2.1.1 INTERPRETATION OF THE PRESENTED STATISTICS

Working with small samples is unavoidable and must be top-of-mind when interpreting the statistics obtained on Québec's Aboriginal populations, including in Nunavik. In order to take into account the epidemiological and ethical issues raised, the following rules of good practice were adopted (Centre for Epidemiology and Evidence, 2015):

A. **To avoid any breach of confidentiality,** no statistics based on a numerator of less than 5 should be distributed, nor should certain categories of variables be aggregated to increase their size.

B. **With the goal of increasing the power** (and by extension, the stability) of the statistics presented, years are aggregated into 4- or 5-year periods and age categories are limited to no more than four.

C. **To decrease the risk of bias**, an asterisk (*) is placed after all data with a coefficient of variation between 16.66% and 33.33% to indicate that this information must be interpreted with caution. Data with a coefficient of variation greater than 33.33% are followed by two asterisks (**). These values (**) are provided for information purposes.

D. **Comparisons** that are temporal, territorial or between various subpopulations are only considered statistically significant when there is an absence of confidence interval overlap at

95%[10]. When variances do not meet these criteria, they are clearly identified as “non statistically significant trends” that should be interpreted with caution.

These good practices do not apply to all sources of population data, especially the Census as explained in the box in section 2.1. The various warnings explain why it is not always possible to display all of the desired overlaps (e.g., age, gender and administrative subregion) for all of the available indicators.

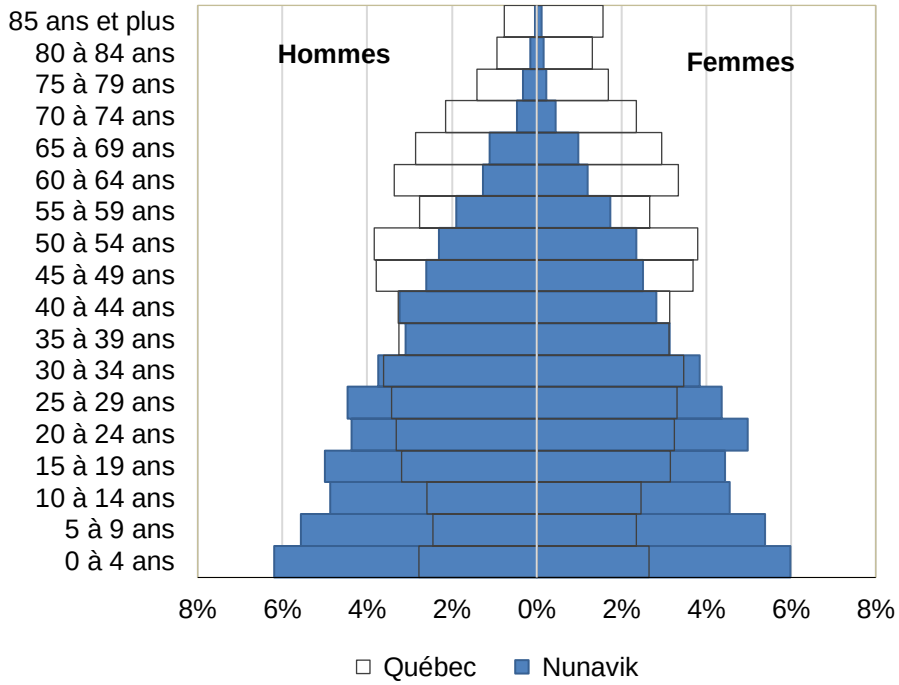
[10] Confidence intervals of 95% are clearly indicated in the graphs; the text, in turn, will clearly mention the statistically significant variance.

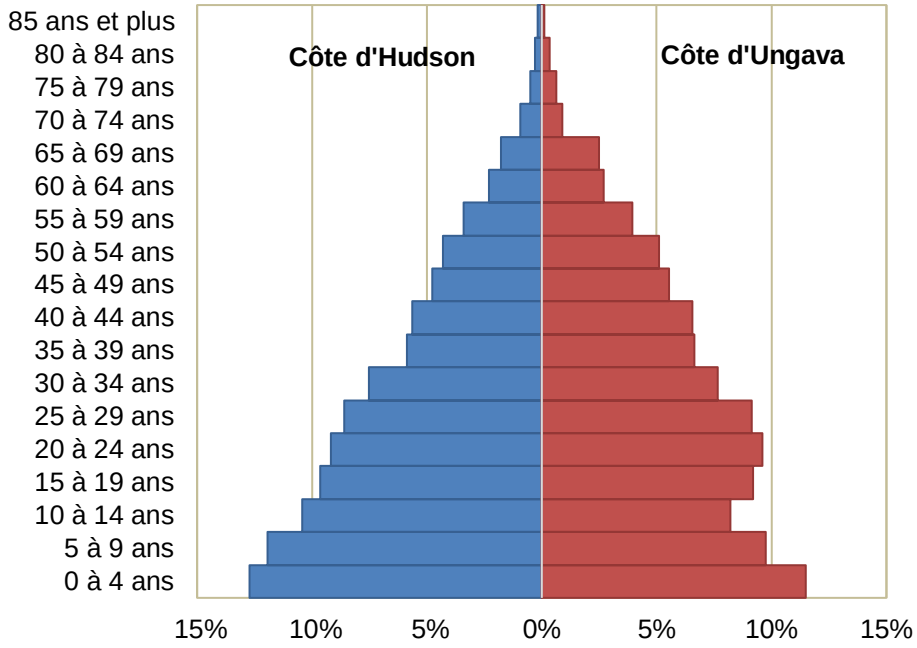
3 Data on the adult population and seniors

3.1 Nunavik: a population undergoing change

The aging adult population is proportionally less significant in Nunavik than elsewhere in Québec (graph at the top of Figure 1). A slightly more important growth can also be observed in the proportion of aging persons on the Ungava Coast compared to the Hudson Coast (graph at the bottom of Figure 1).

Figure 1 Population distribution according to age and gender, Québec, Nunavik, and Nunavik coasts, 2016

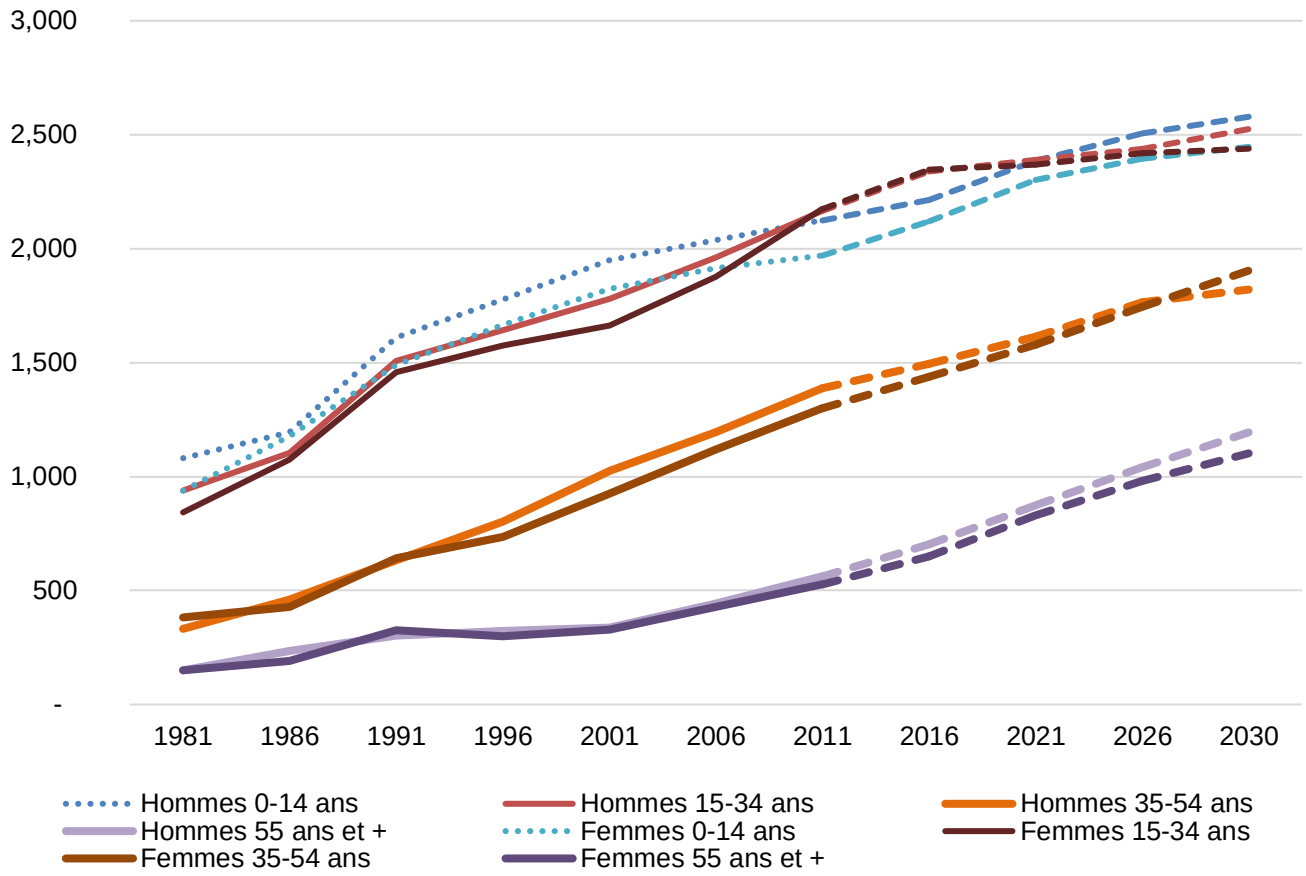




Secondary source: Infocentre de santé publique du Québec.
Primary sources: MSSS, Estimations et projections démographiques, electronic version (1981-1995: April 2012 version, 1996-2036: May 2017 version).

As mentioned in the profile “Sociodemographic background”, a visible increase in the proportion of the population aged 35 years or more can be observed in Nunavik (INSPQ, 2021a). And in both Nunavik and elsewhere in Québec, persons aged 55 years or more experienced constantly increasing growth rates; this rate, however, grew much faster in Nunavik than in Québec. Figure 2 illustrates that projections by gender are similar.

Figure 2 **Population (n) from 1981 to 2010 and population projections from 2011 to 2030, men and women, by age group, Nunavik**



Secondary source: Infocentre de santé publique du Québec.
Primary sources: MSSS, Estimations et projections démographiques à partir de 2011, electronic version (1981-1995: April 2012 version, 1996-2036: May 2017 version).

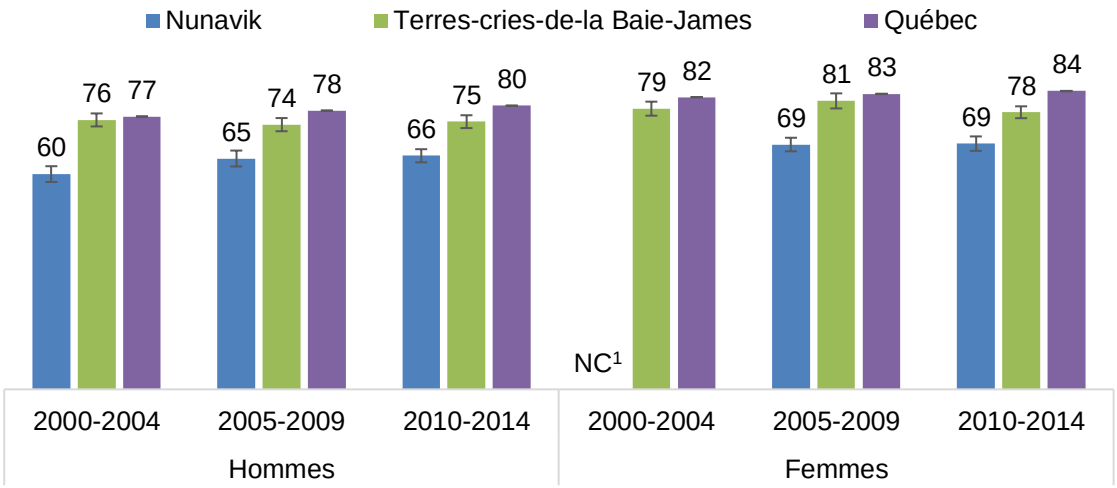
3.2 Indicators of the general health status of the population

This section considers the health status indicators for the population of Nunavik, especially life expectancy, along with the rates and primary causes of mortality and hospitalization.

3.2.1 LIFE EXPECTANCY

Since the year 2000, the life expectancy of men in Nunavik rose by around 5 years, reaching 66 years in 2010-2014; that of women, in turn, remained stable at 69 years (Figure 3). These data on life expectancy, however, continue to be significantly lower than those for Québec as a whole for 2010-2014. The variance between Québec and Nunavik is around 15 years.

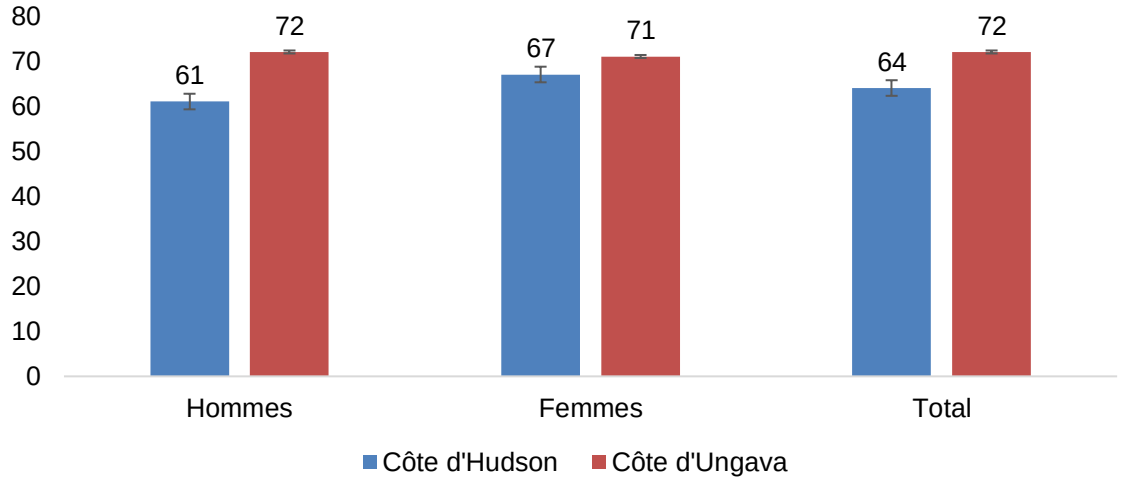
Figure 3 **Life expectancy (years), men and women, Nunavik, Terres-Cries-de-la-Baie-James region and Québec as a whole, 2000-2004, 2005-2009 and 2010-2014**



Secondary source: Infocentre de santé publique du Québec.
Primary sources: - MSSS, Register of deaths (electronic file), update and territorial breakdown, version M34-2017;
- MSSS, Estimations et projections démographiques, electronic version (1981-1995: April 2012 version, 1996-2036: May 2017 version); - MSSS, Register of births (electronic file), update and territorial breakdown, version M34-2017.
Note: Population estimates based on age and gender for the years 1981 to 1995 were not revised by Statistics Canada. These data may therefore differ from that obtained from other sources. Life expectancy calculations were performed by Ernest Lo using the Brass method.
[1] Not calculable (NC): Data missing due to mortality quotients above 100%.

Data in Figure 4 reveal that the life expectancy of residents of the Hudson Coast is statistically lower, by 8 years, than that of the population of the Ungava Coast. An analysis by gender illustrates a statistically significant difference only as regards men.

Figure 4 **Life expectancy (years), men, women and both genders combined, Nunavik, Nunavik coasts, 2010-2014**

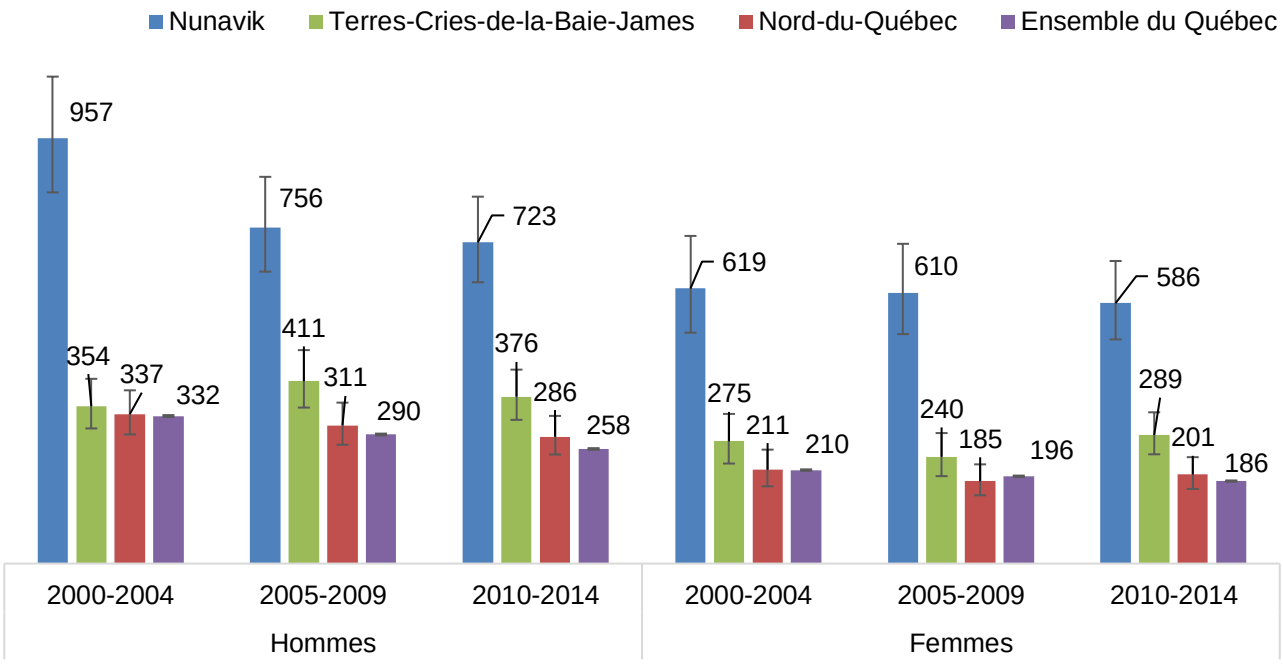


Secondary source: Infocentre de santé publique du Québec.
Primary sources: - MSSS, Register of deaths (electronic file), update and territorial breakdown, version M34-2017;
- MSSS, Estimations et projections démographiques, electronic version (1981-1995: April 2012 version, 1996-2036: May 2017 version); - MSSS, Register of births (electronic file), update and territorial breakdown, version M34-2017.
Note: Population estimates based on age and gender for the years 1981 to 1995 were not revised by Statistics Canada. These data may therefore differ from that obtained from other sources. Life expectancy calculations were performed by Ernest Lo using the Brass method.

3.2.2 RATES AND PRIMARY CAUSES OF MORTALITY IN NUNAVIK

The increase in the life expectancy of men is consistent with a downwards trend (non-significant) in the mortality rates for this group during the period considered in Nunavik (Figure 5). This being said, the mortality rates for men[11] in Nunavik are two to three times greater than they are in other populations in the province. Figure 6 reveals that persons aged 55 years or more have a more visible decrease in their mortality rates, all causes combined.

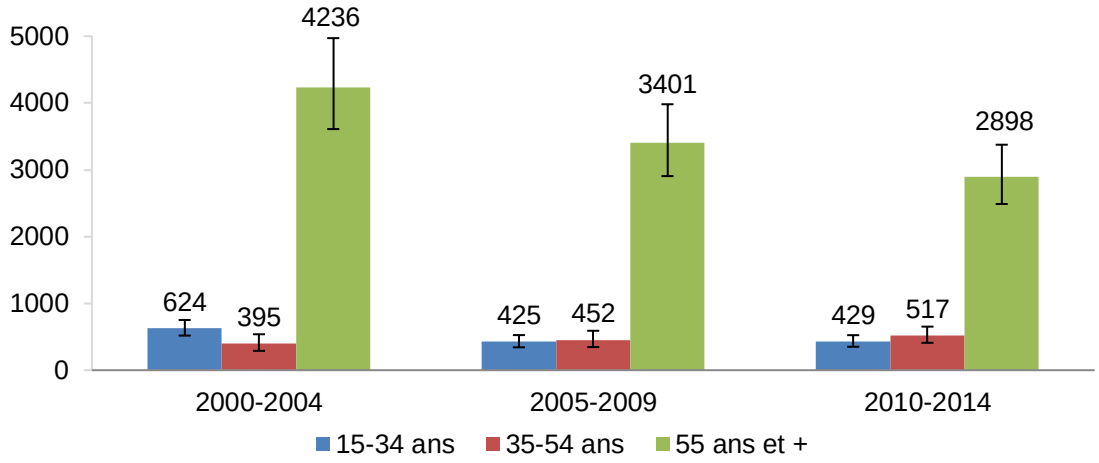
Figure 5 **Adjusted mortality rates (/100,000), men and women, Nunavik, Nord-du-Québec, Terres-Cries-de-la-Baie-James region and Québec as a whole, 2000-2004, 2005-2009 and 2010-2014**



Secondary source: Infocentre de santé publique du Québec.
Secondary sources: -
MSSS, Register of deaths (electronic file), update and territorial breakdown, version M34-2017;
- MSSS, Estimations et projections démographiques, electronic version (1981-1995: April 2012 version, 1996-2036: May 2017 version).
Indicator updated on February 12, 2018.

[11] The crude mortality rate refers to the number of deaths in a given year per 100,000 people, beginning on July 1st of that same year (Statistics Canada, 2010)

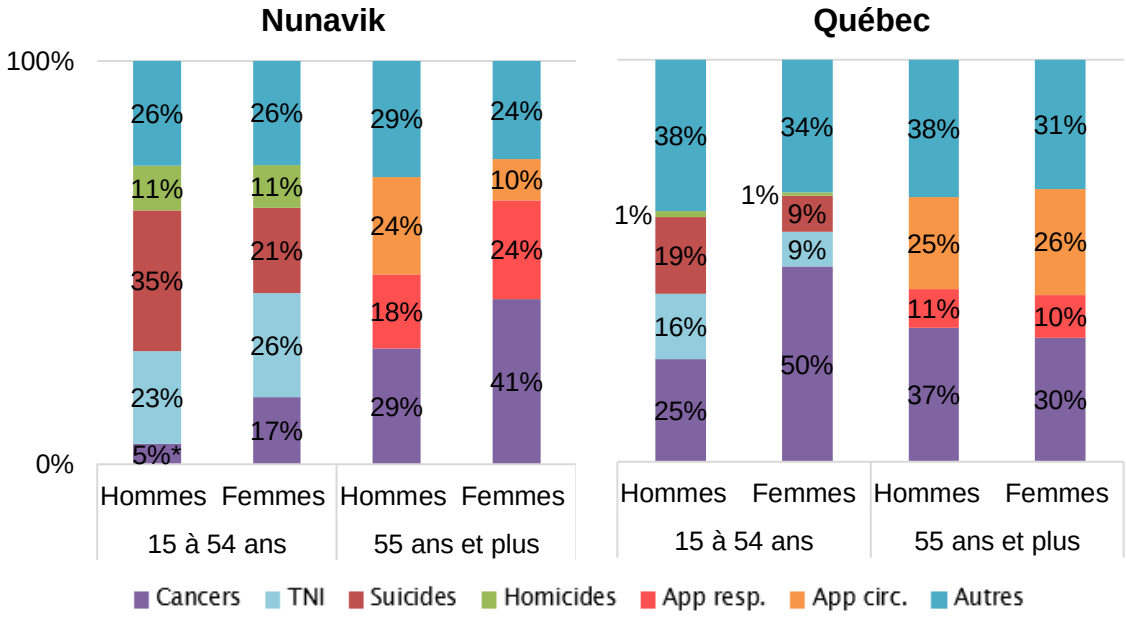
Figure 6 **Crude mortality rates (/100,000), all causes combined, by age group, Nunavik, 2000-2004, 2005-2009 and 2010-2014**



Secondary source: Infocentre de santé publique du Québec. Indicator updated on February 12, 2018.
Primary sources:
- MSSS, Register of deaths (electronic file), update and territorial breakdown, version M34-2017;
- MSSS, Estimations et projections démographiques, electronic version (1981-1995: April 2012 version, 1996-2036: May 2017 version).

Like what is observed elsewhere in Québec, causes of death in Nunavik differ depending on age (Figure 7). In fact, in Nunavik, intentional trauma (suicide and assault) and NIT[12] are the primary causes of death among youth and adults aged 15 to 54. Among those aged 55 years or more, RSD, CSD and cancer are the most frequent causes, and this for both regions. Moreover, the relative importance of these causes varies according to gender (Figure 8).

Figure 7 **Breakdown (%) of the primary causes of death, men and women, 15 to 54 years and 55 years or more, Nunavik and Québec as a whole, 2010-2014**



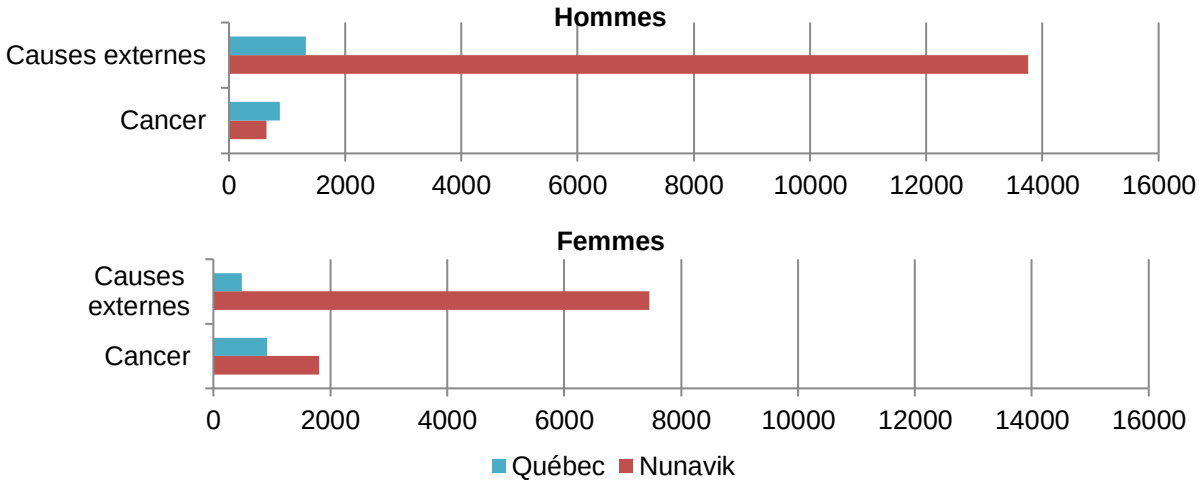
Secondary source: Infocentre de santé publique du Québec. Indicator updated on February 12, 2018.
Primary sources:
MSSS, Register of deaths (electronic file), update and territorial breakdown, version M34-2017;
- MSSS, Estimations et projections démographiques, electronic version (1981-1995: April 2012 version, 1996-2036: May 2017 version).
Note: The recorded causes of death include: cancers of all types, non-intentional trauma (NIT, e.g., injuries due to falls, fire, etc.), intentional trauma (IT, e.g., suicides and homicides), respiratory system diseases (RSD or resp. diseases), circulatory system diseases (CSD or circ. diseases) and "others" (less frequent causes).

[12] IT and NIT are discussed in section 3.3.

***** Coefficient of variation between 16.66% and 33.33%. The value must be interpreted with caution.

Hence, as illustrated by the graphs in Figure 8, "external causes"[13] account for the majority of early deaths in Nunavik, and this for both men and women. Figure 8 presents the potential years of life lost (PYLL)[14] by gender.

Figure 8 Adjusted rates for potential years of life lost (/100,000), men and women, 2010-2014



Secondary source: Infocentre de santé publique du Québec. Indicator updated on February 12, 2018.
Primary sources:
MSSS, Register of deaths (electronic file), update and territorial breakdown, version M34-2017;
- MSSS, Estimations et projections démographiques, electronic version (1981-1995: April 2012 version, 1996-2036: May 2017 version).

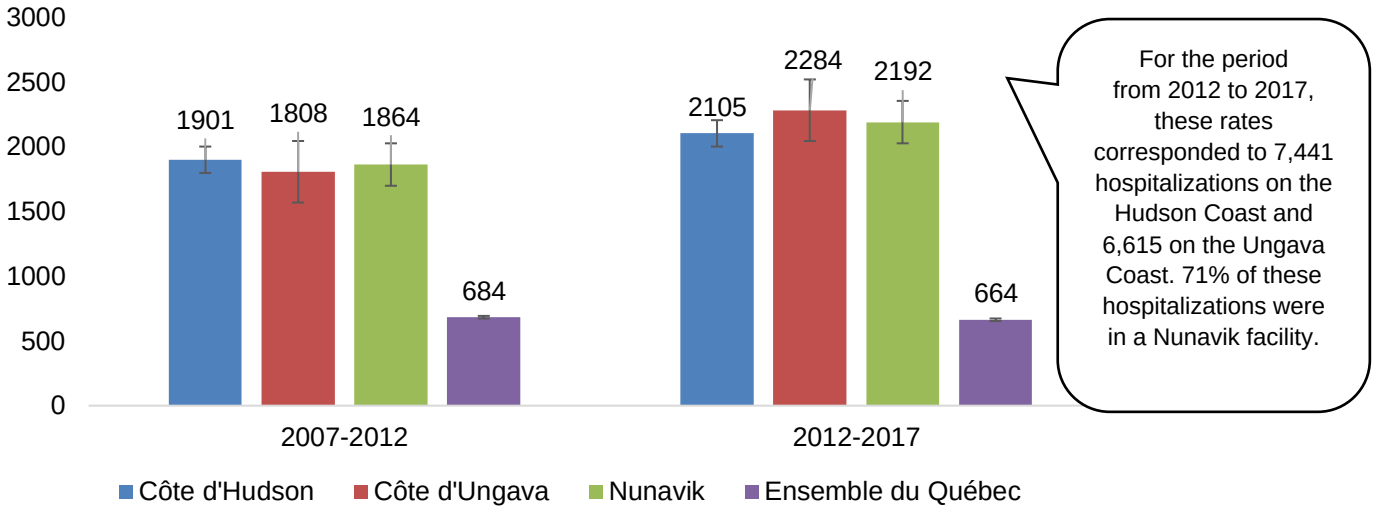
3.2.3 RATES AND PRIMARY CAUSES OF HOSPITALIZATION IN NUNAVIK

The number of hospitalizations among Nunavik residents is rising. As shown in Figure 9, hospitalization rates for all types of causes have increased, and this regardless of home coast.

[13] The term "external causes", in a context of death, refers to traumatic injuries resulting from external events, and include all types of trauma (intentional trauma and non-intentional trauma).

[14] PYLL is an indicator of early deaths. This statistic measures the number of years of life lost due to a death deemed to be "early", i.e., before reaching the age of 75 years. For example, a person who dies at 35 years of age is said to have lost 40 potential years of life (Bureau d'information et d'études en santé des populations [BIESP], Institut national de santé publique du Québec [INSPQ], 2020).

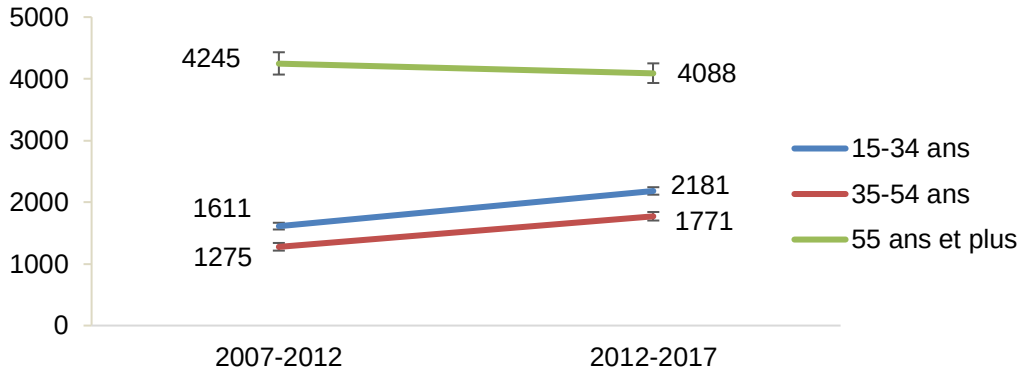
Figure 9 **Adjusted hospitalization rates (/10,000), all causes combined, Nunavik, Nunavik coasts and Québec as a whole, 2007-2012 and 2012-2017**



Secondary source: Infocentre de santé publique du Québec.
Primary sources:
- MSSS, Register of hospitalizations, MED-ECHO (electronic file), update and territorial breakdown, version M34-2017;
- MSSS, Estimations et projections démographiques, electronic version (1981-1995: April 2012 version, 1996-2036: May 2017 version).
Note: The interpretation of temporal trends for the periods 2007-2012 and 2012-2017 should be done with great caution given the modifications to the reporting criteria for defining hospitalizations at UTHC.

The hike in hospitalization rates for all types of causes is clearly more significant on the Ungava Coast than on the Hudson Coast[15]. This increase corresponds to that observed in the hospitalization rates of persons aged 15 to 54 (the hospitalization rates for persons aged 55 years or more having apparently remained stable [Figure 10]). Furthermore, the graphs in Figure 11 show that these trends will persist over time.

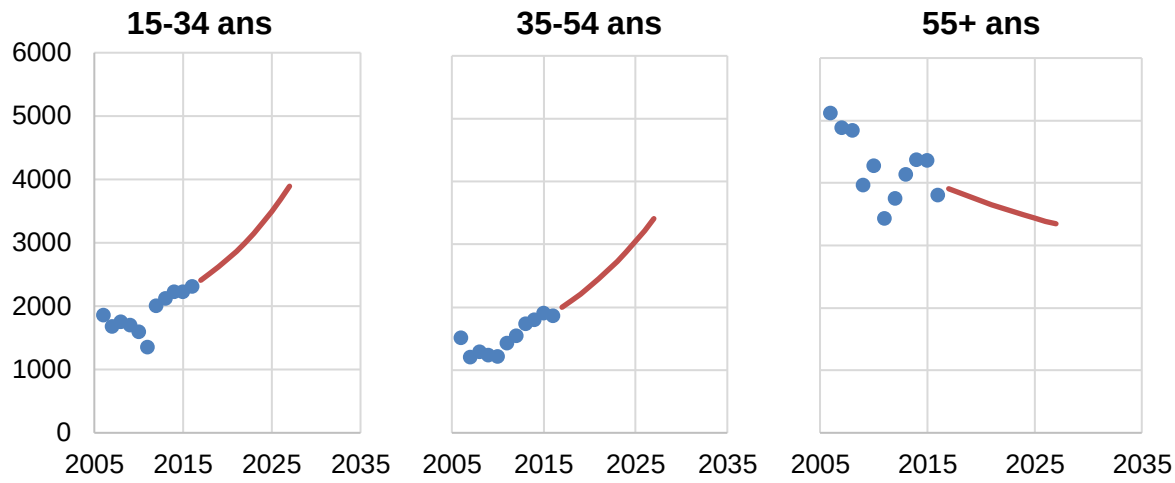
Figure 10 **Crude hospitalization rates (/10,000), all causes combined, by age group, Nunavik, 2007-2012 and 2012-2017**



Secondary source: Infocentre de santé publique du Québec. Indicator updated on February 12, 2018.
Primary sources:
- MSSS, Register of hospitalizations, MED-ECHO.
- MSSS, Estimations et projections démographiques, electronic version (1981-1995: April 2012 version, 1996-2036: May 2017 version).
Note: The interpretation of temporal trends for the periods 2007-2012 and 2012-2017 should be done with great caution given the modifications to the reporting criteria for defining hospitalizations at UTHC.

Figure 11 **Projections (2017-2035) for hospitalization rates (/10,000), by age group, Nunavik**

[15] It bears noting that this increase could be partly related to the changes made to reporting criteria for hospitalizations at the UTHC during the periods under consideration.



Secondary source: Infocentre de santé publique du Québec. Indicator updated on February 12, 2018.
Primary sources:
- MSSS, Register of hospitalizations, MED-ECHO (electronic file), update and territorial breakdown, version M34-2017;
- MSSS, Estimations et projections démographiques, electronic version (1981-1995: April 2012 version, 1996-2036: May 2017 version).
Note: Data from 2006 to 2016 were obtained from the Infocentre (blue dots) and projections for the period from 2017 to 2027 were calculated by Ernest Lo. The interpretation of temporal trends for the periods 2007-2012 and 2012-2017 should be done with great caution given the modifications to the reporting criteria for defining hospitalizations at UTHC.

The primary causes of hospitalization are similar to those for mortality in the region, i.e., mainly IT and NIT for young adults (15-34 years) and middle-aged adults (35-54 years), and chronic diseases for persons aged 55 years or more (not indicated).

3.2.4 IN SHORT

1. The life expectancy of women in Nunavik has remained stable, at 69 years. As for men, their life expectancy increased by about 5 years, reaching 66 years in 2010-2014. The variance between the average life expectancy in Nunavik and that in Québec is nonetheless still around 15 years.
2. The increase in the life expectancy of men is consistent with the non-significant downwards trend in mortality from all causes combined, especially in men aged 55 years or more.
3. The primary causes of mortality and hospital morbidity seemingly vary according to age, with trauma (intentional and non-intentional) constituting the primary cause of mortality for all age groups. Chronic diseases rank second among the elderly.

3.3 Intentional trauma (IT) and non-intentional trauma (NIT) among youth and adults

This section presents the health profile of people between the ages of 15 and 54.

A distinction is drawn between intentional trauma (IT) and non-intentional trauma (NIT). IT notably speaks to suicide and interpersonal violence (e.g., homicide), and NIT mostly refers to injuries resulting from an accident or an involuntary action (e.g., highway accidents and falls) (INSPQ, 2015b). NIT includes all injuries resulting from falls, fire and drowning, as well as those occurring while travelling. In the "real world", it can be difficult to determine whether the events in play were the result of an intentional act or not. Moreover, both of these categories involve common risk factors, especially mental health issues and substance abuse (INSPQ, 2015a).

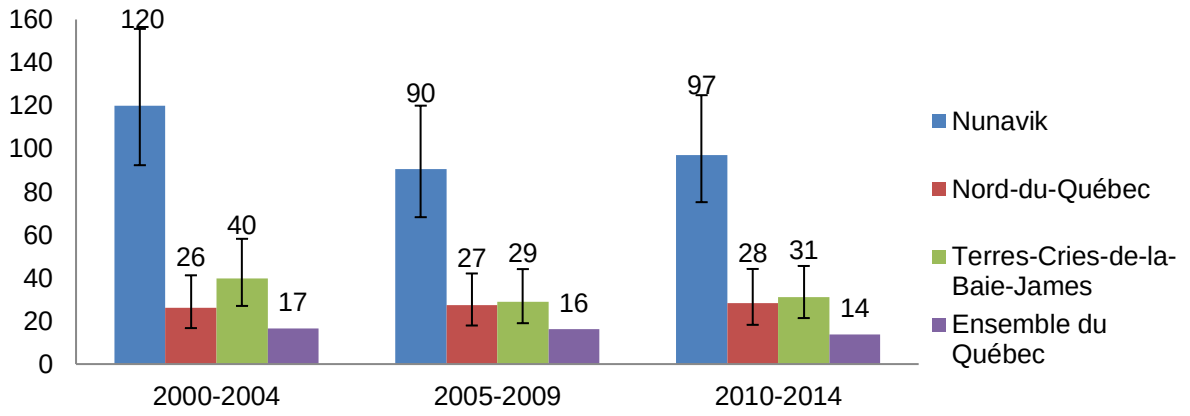
One of the reports in *Qanuilirpitaa ? 2017* considers NIT on the basis of gender, age, type of injuries and medical care required as treatment (Beaulieu et al., 2020). Moreover, because the use of substances is an important risk factor in both IT and NIT, *Qanuilirpitaa ? 2017* generated a report intitled Substance use, which describes the excessive drug and alcohol consumption among the Nunavik population (Bélanger et al., 2020).

3.3.1 NIT

3.3.1.1 Mortality

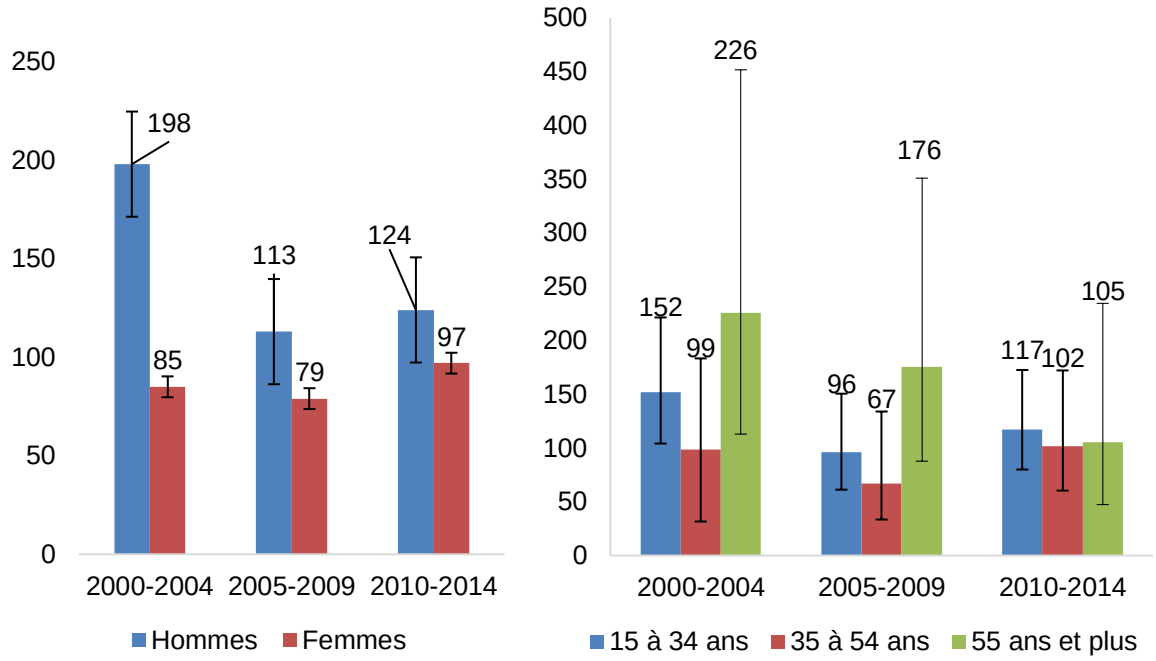
Mortality rates associated with NIT in Nunavik are about 7 times greater than in Québec. Nunavik's mortality rates due to NIT are also nearly 3 times higher than those for Québec's other Nordic populations, be they Aboriginal or not (Figure 12). Figure 13 reveals a stable mortality rate due to NIT among women over the past few years, but a high rate men persons aged 55 years or more.

Figure 12 Adjusted mortality rates (/100,000) associated with NIT, Nunavik, Nord-du-Québec, Terres-Cries-de-la-Baie-James region and Québec as a whole, 2000-2004, 2005-2009 and 2010-2014



Secondary source: Infocentre de santé publique du Québec. Indicator updated on February 12, 2018.
Primary sources:
MSSS, Register of deaths (electronic file), update and territorial breakdown, version M34-2017;
- MSSS, Estimations et projections démographiques, electronic version (1981-1995: April 2012 version, 1996-2036: May 2017 version).

Figure 13 **Crude mortality rates (/100,000), associated with NIT, men and women, by age group, Nunavik, 2000-2004, 2005-2009 and 2010-2014**



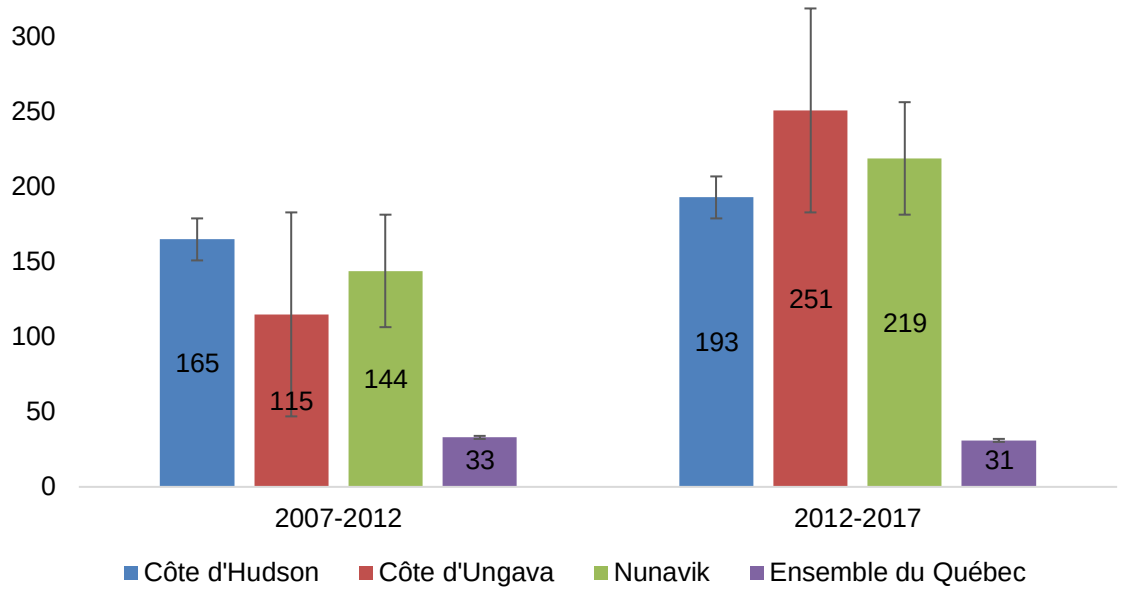
Source: Infocentre de santé publique du Québec. Indicator updated on February 12, 2018.
Primary sources:
MSSS, Register of deaths (electronic file), update and territorial breakdown, version M34-2017;
- MSSS, Estimations et projections démographiques, electronic version (1981-1995: April 2012 version, 1996-2036: May 2017 version).

3.3.1.2 Hospital morbidity

Hospitalization rates associated with NIT grew significantly during the periods considered[16] (Figure 14), except in Québec, which has a low hospitalization rate that has remained stable over the past few years.

[16] Reminder: this variance can be partly explained by the changes to the reporting criteria for UTHC hospitalizations during the periods considered.

Figure 14 Adjusted hospitalization rates (/10,000) associated with NIT, Nunavik, Nunavik coasts and Québec as a whole, 2007-2012 and 2012-2017

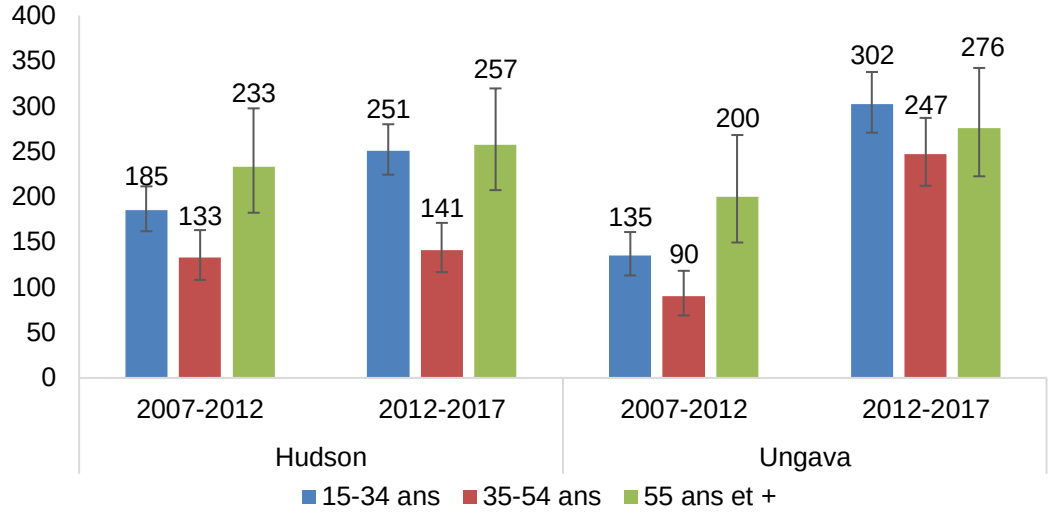


Secondary source: Infocentre de santé publique du Québec. Indicator updated on February 12, 2018.
Primary sources:
- MSSS, Register of hospitalizations, MED-ECHO (electronic file), update and territorial breakdown, version M34-2017;
- MSSS, Estimations et projections démographiques, electronic version (1981-1995: April 2012 version, 1996-2036: May 2017 version).
Note: The interpretation of temporal trends for the periods 2007-2012 and 2012-2017 should be done with great caution given the modifications to the reporting criteria for defining hospitalizations at UTHC.

Moreover, an increase in the number of hospitalizations due to NIT has been observed among the 15-34 year-old age groups on both coasts. This increase is particularly significant among persons aged 15 to 34 who live on the Ungava Coast[17] (Figure 15).

[17] Reminder: this increase can be partly explained by the changes to the reporting criteria for UTHC hospitalizations.

Figure 15 **Crude hospitalization rates (/10,000) associated with NIT, by age group, Nunavik coasts, 2007-2012 and 2012-2017**



Secondary source: Infocentre de santé publique du Québec. Indicator updated on February 12, 2018.
Primary sources:
- MSSS, Register of hospitalizations, MED-ECHO (electronic file), update and territorial breakdown, version M34-2017;
- MSSS, Estimations et projections démographiques, electronic version (1981-1995: April 2012 version, 1996-2036: May 2017 version).
Note: The interpretation of temporal trends for the periods 2007-2012 and 2012-2017 should be done with great caution given the modifications to the reporting criteria for defining hospitalizations at UTHC.

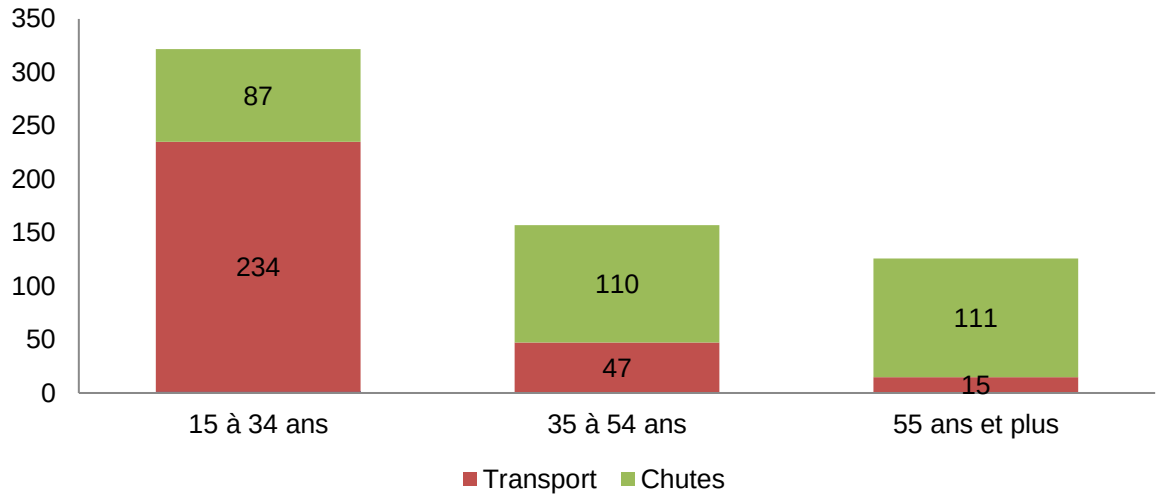
Two major causes of hospitalization associated with NIT were revealed: injuries related to transportation and injuries related to falls. Injuries related to transportation include all injuries suffered by a pedestrian, cyclist or passenger in a motor vehicle (MV)[18]. Also included are injuries related to an accident on a public highway or while using an off-road vehicle (ORV)[19]. Injuries related to falls are injuries that occur when a persons falls involuntarily; they are discussed on page 29.

As seen in the graph in Figure 16, hospitalizations related to transportation and falls vary according to age. Accidents related to transportation are a frequent cause of hospitalization among young adults (15-34 years), but the frequency of this cause diminishes with age. As for falls, they become a more frequent cause of hospitalization among persons aged 55 years or more.

[18] Motor vehicles (MV) are motorized vehicles - such as a car - designed or outfitted to travel along roads and highways (Canada Revenue Agency, 2005).

[19] Off-road vehicles (ORV) are motor vehicles designed to be used off-road (i.e., not on designated roads or highways). This category of vehicles includes snowmobiles and all-terrain vehicles (ATV) such as four-wheelers (Canada Revenue Agency, 2005).

Figure 16 Number of hospitalizations (/10,000) associated with NIT, by cause, by age group, Nunavik, 2012-2017

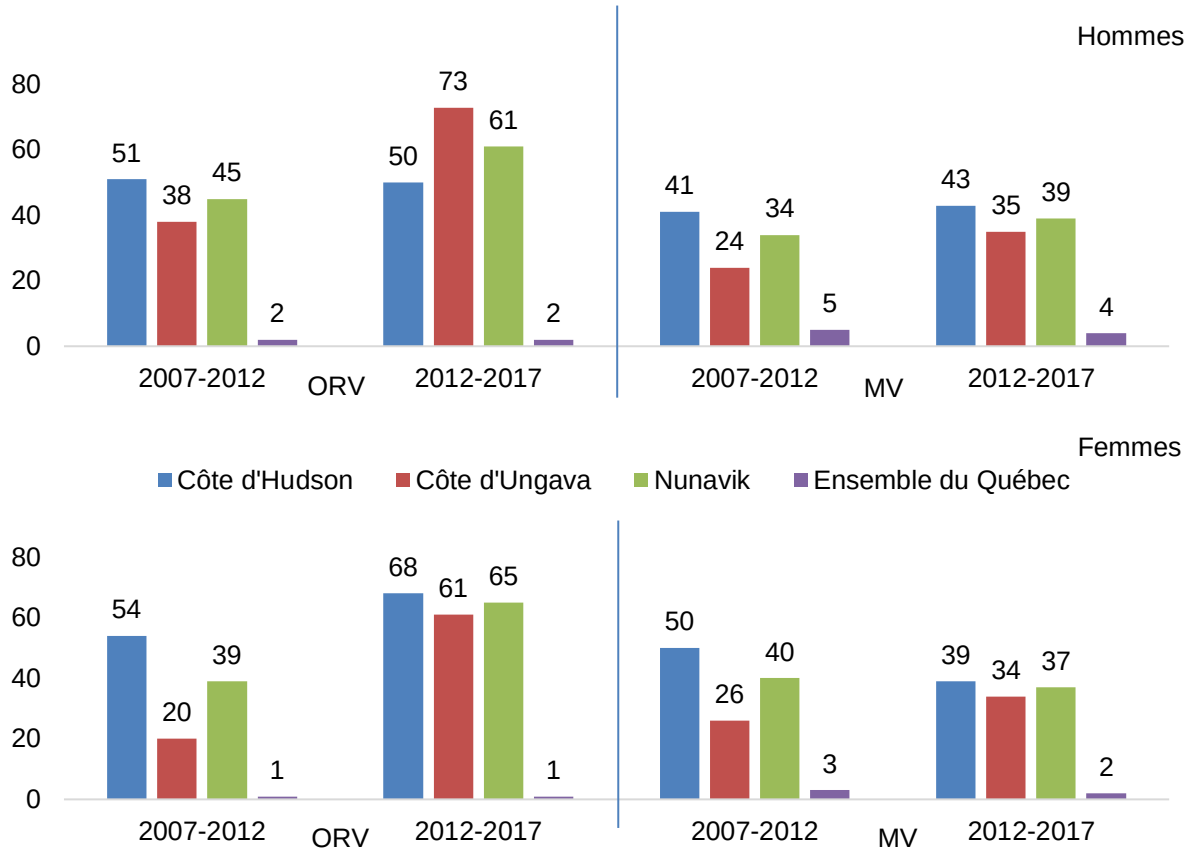


Sources: Infocentre de santé publique du Québec. Indicator updated on February 12, 2018.
Primary sources:
- MSSS, Register of hospitalizations, MED-ECHO (electronic file), update and territorial breakdown, version M34-2017;
- Discharge Abstract Database metadata (DAD), Canadian Institute for Health Information, update and territorial breakdown, version M34-2107;
- MSSS, Estimations et projections démographiques, electronic version (1981-1995: April 2012 version, 1996-2036: May 2017 version).
Note: The interpretation of temporal trends for the periods 2007-2012 and 2012-2017 should be done with great caution given the modifications to the reporting criteria for defining hospitalizations at UTHC.

Injuries related to transportation. Injuries associated with a MV or ORV are one of the most frequent causes of hospitalization in Nunavik, all ages combined. In fact, the graph in Figure 17 illustrates that hospitalizations related to MV or ORV accidents are up to 20 times greater in Nunavik than elsewhere in Québec for the two periods considered[20].

[20] And while this variance can be partly explained by changes to the reporting criteria for UTHC hospitalizations, it is still worthy of note.

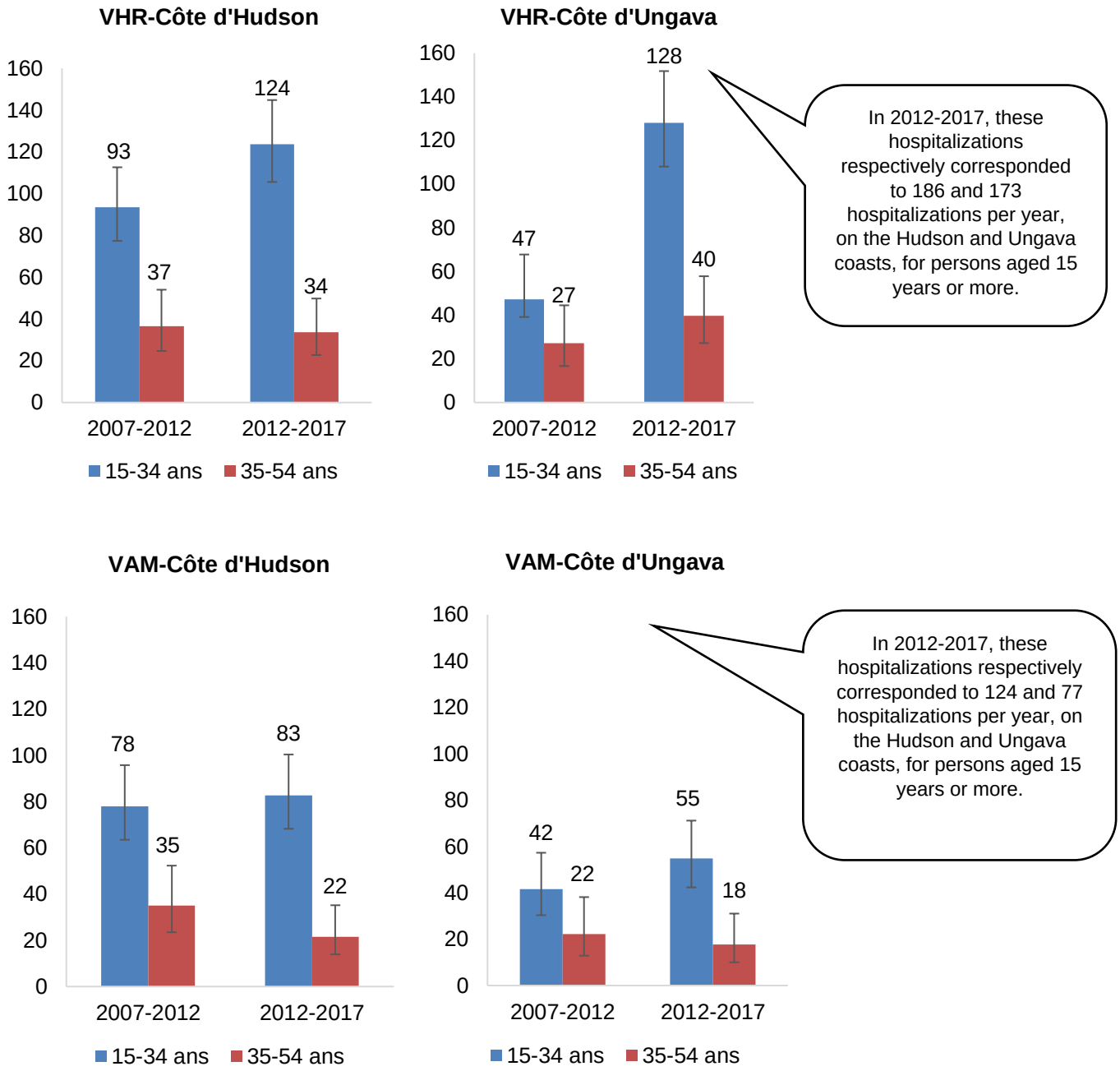
Figure 17 **Adjusted hospitalization rates (/10,000) associated with NIT involving a MV or ORV, men and women, Nunavik, Nunavik coasts and Québec as a whole, 2007-2012 and 2012-2017**



Secondary source: Infocentre de santé publique du Québec. Indicator updated on February 12, 2018.
Primary sources:
- MSSS, Register of hospitalizations, MED-ECHO (electronic file), update and territorial breakdown, version M34-2017;
- Discharge Abstract Database metadata (DAD), Canadian Institute for Health Information, update and territorial breakdown, version M34-2107;
- MSSS, Estimations et projections démographiques, electronic version (1981-1995: April 2012 version, 1996-2036: May 2017 version).
Note: The interpretation of temporal trends for the periods 2007-2012 and 2012-2017 should be done with great caution given the modifications to the reporting criteria for defining hospitalizations at UTHC.

An examination of the age groups allows for noting that injuries by MV and ORV mainly involve young adults (15-34 years), irrespective of type of vehicle and home coast (Figure 18).

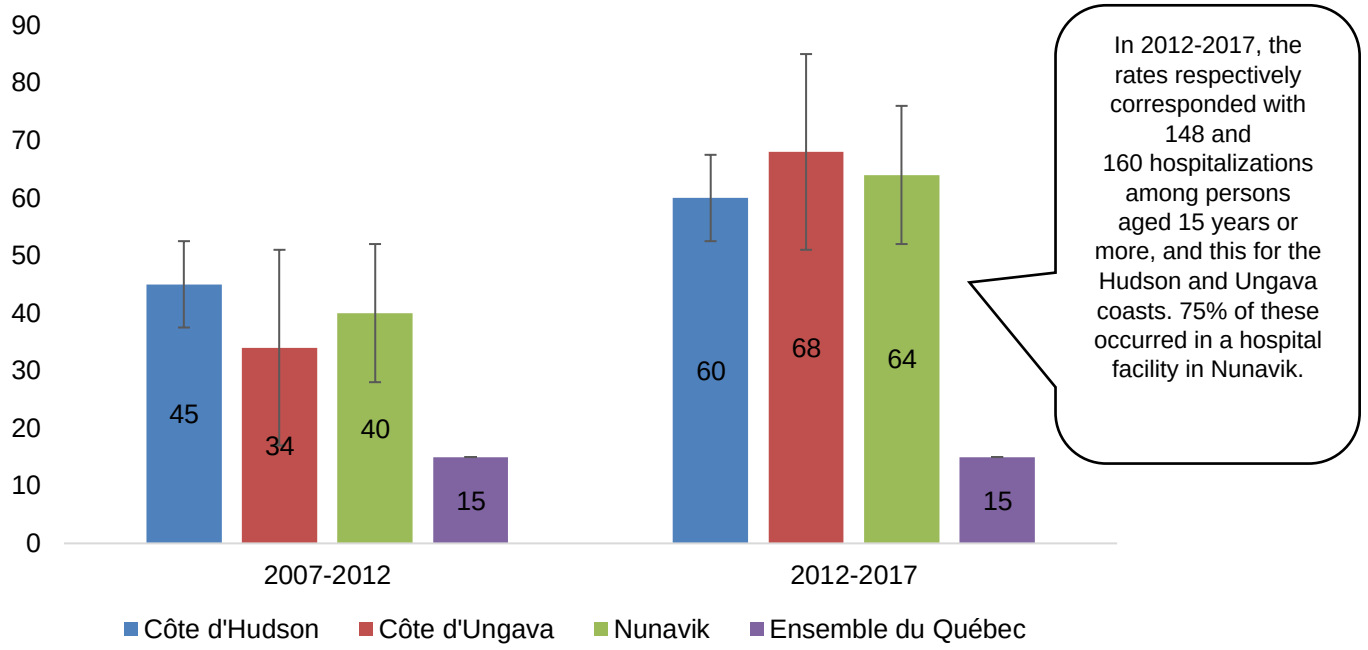
Figure 18 **Crude hospitalization rates (/10,000) associated with NIT involving a MV or ORV, by age group, Nunavik coasts, 2007-2012 and 2012-2017**



Secondary source: Infocentre de santé publique du Québec. Indicator updated on February 12, 2018.
Primary sources:
- MSSS, Register of hospitalizations, MED-ECHO (electronic file), update and territorial breakdown, version M34-2017;
- MSSS, Estimations et projections démographiques, electronic version (1981-1995: April 2012 version, 1996-2036: May 2017 version).
Report in the tab *Plan national de surveillance* (national monitoring program) from the public health Infocentre of the Institut national de santé publique du Québec, on April 12, 2018 at 9:53 a.m.
Note: The interpretation of temporal trends for the periods 2007-2012 and 2012-2017 should be done with great caution given the modifications to the reporting criteria for defining hospitalizations at UTHC.
Note: Statistics for persons aged 55 years or more can no longer be provided, given that the coefficient of variation is greater than 33.33%.

Injuries linked to falls. Falls are also a frequent cause of hospital morbidity in Nunavik. The region notably has hospitalization rates that are up to 4 times those in Québec for the periods considered[21] (Figure 19). What's more, the figures in Nunavik are actually on the rise.

Figure 19 Adjusted hospitalization rates (/10,000) associated with NIT subsequent to a fall, Nunavik, Nunavik coasts and Québec as a whole, 2007-2012 and 2012-2017

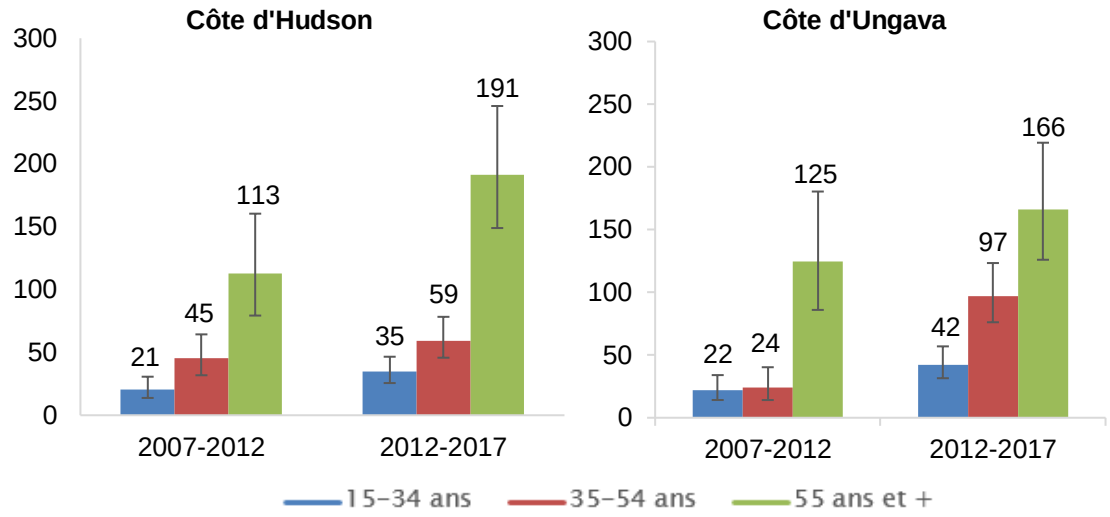


Secondary source: Infocentre de santé publique du Québec. Indicator updated on February 12, 2018.
Primary sources:
- MSSS, Register of hospitalizations, MED-ECHO (electronic file), update and territorial breakdown, version M34-2017;
- MSSS, Estimations et projections démographiques, electronic version (1981-1995: April 2012 version, 1996-2036: May 2017 version). Report in the tab *Plan national de surveillance* (national monitoring program) from the public health Infocentre of the Institut national de santé publique du Québec, on April 12, 2018 at 9:53 a.m.
Note: The interpretation of temporal trends for the periods 2007-2012 and 2012-2017 should be done with great caution given the modifications to the reporting criteria for defining hospitalizations at UTHC.

Figure 20 reveals that these increase vary according to age. The rates for persons aged 55 years or more are significantly higher than those in lower age groups, and this for both coasts. When considering the difference between the periods examined, the only statistically significant difference is the increase recorded for the 35-54 year age group[22].

[21] Reminder: this variance can be partly explained by the changes to the reporting criteria for UTHC hospitalizations.
[22] Reminder: this increase can be partly explained by the changes to the reporting criteria for UTHC hospitalizations.

Figure 20 **Crude hospitalization rates (/10,000) associated with NIT subsequent to a fall, by age group, Nunavik, Nunavik coasts, 2007-2012 and 2012-2017**



Secondary source: Infocentre de santé publique du Québec. Indicator updated on February 12, 2018.
Primary sources:
- MSSS, Register of hospitalizations, MED-ECHO (electronic file), update and territorial breakdown, version M34-2017;
- MSSS, Estimations et projections démographiques, electronic version (1981-1995: April 2012 version, 1996-2036: May 2017 version).
Note: The interpretation of temporal trends for the periods 2007-2012 and 2012-2017 should be done with great caution given the modifications to the reporting criteria for defining hospitalizations at UTHC.

3.3.2 IT

This section addresses topics that may be sensitive to some readers (e.g., suicide). There are support resources for persons with suicidal thoughts and their loved ones; we urge anyone who feels the need to please reach out for help[23].

As previously mentioned, IT include suicidal behaviour and interpersonal violence. This profile considers mortalities due to suicides[24] and homicides, as well as hospitalizations subsequent to suicide attempts and assault.

3.3.2.1 Suicidal behaviour

The elevated rate of suicide among Inuit in Canada is the most urgent challenge facing our people and it demands a national response. (Yet), Inuit did not, historically, suffer from disproportionately high rates of suicide (Inuit Tapiriit Kanatami [ITK], 2016).

The report intitled *Mental Health and Wellness* in *Qanuilirpitaa? 2017* considers psychological distress, suicidal behaviour (including both suicidal ideation and suicide attempts) and circumstances potentially leading to such behaviour among the population of Nunavik, according to age and gender (Muckle et al., 2020).

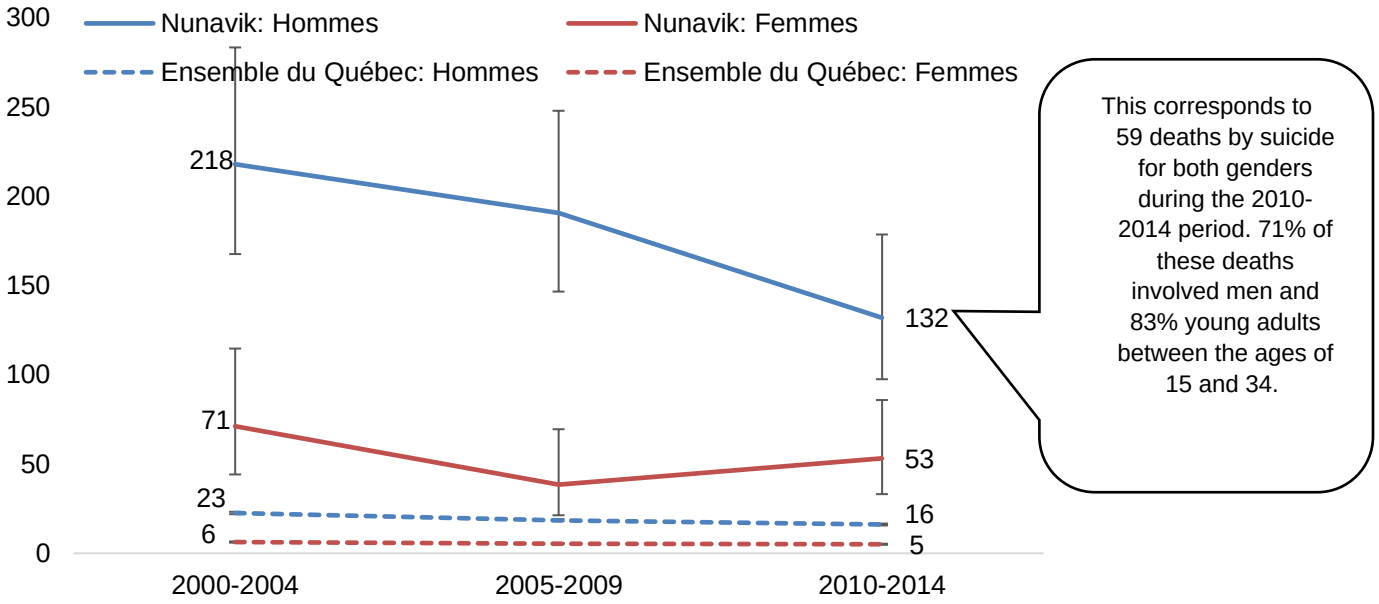
[23] Kamaqtsiaqtut Help Line (1 800 265-3333 OR chat OR 1 855 242-3310; Inuit Values and Practices, NRBHSS (1 877 686-2845); Kids Help Phone (1 800 668-6868), www.kidshelpphone.ca.

[24] Deaths by suicide are defined with specific codes established by the International Classification of Diseases (ICD) and confirmed by the Coroner's Office.

According to the available data[25], the suicide rate recorded in the region in 2010-2014 (93/100,000) for men and women was still 8 times greater than that in Québec (11/100,000) for the same period (Figure 21). Between 2000 and 2015, in fact, Nunavik had an average of 13 deaths by suicide per year. 2008 was the year with the greatest number of deaths by suicide (*n* = 18), and 2006 and 2007 were the two years with the fewest number of such deaths recorded (*n* = 10). For the most recent years where data is available, namely between 2012 and 2015 inclusively, 11 deaths per year were recorded. Hanging is the most frequently used means of suicide for all of the periods considered (data for this paragraph not indicated).

Mortality rates by suicide in Nunavik vary greatly, according to age and gender. In fact, as is the case elsewhere in Québec, the mortality rate among men is twice as high as it is among women (Figure 21). In addition, the age group most impacted is young adults between 15 and 34 years of age (see the balloon in Figure 21). Lastly, a drop (non-significant) in mortality by suicide is visible among men in Nunavik during the period considered; this rate appears stable for women during the same period (Figure 21).

Figure 21 Adjusted mortality rates (/100,000) by suicide, men and women, Nunavik and Québec as a whole, 2000-2004, 2005-2009 and 2010-2014

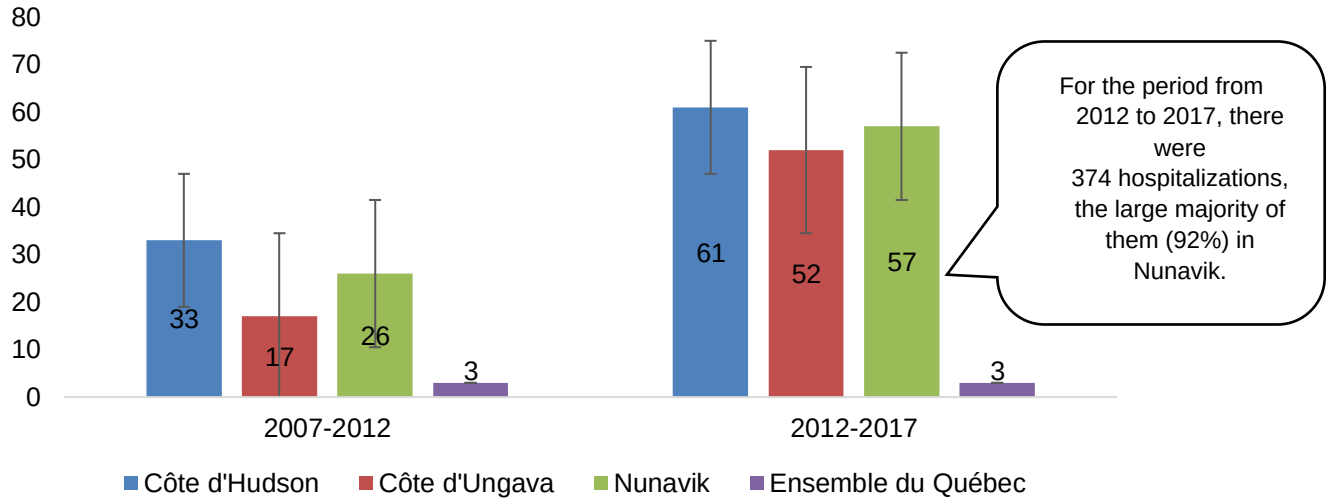


Secondary source: Infocentre de santé publique du Québec. Indicator updated on February 12, 2018.
Primary sources:
MSSS, Register of deaths (electronic file), update and territorial breakdown, version M34-2017;
- MSSS, Estimations et projections démographiques, electronic version (1981-1995: April 2012 version, 1996-2036: May 2017 version).
Note: Rates for the Nord-du-Québec and des Terres-Cries-de-la-Baie-James regions are based on numerators that are too small to be presented.

[25] Reminder: the data presented do not include information on the suicides that occurred between 2015 and 2018. Also, the data is not broken down by community, and this for reasons of confidentiality and statistical power. These limits regarding methodology can result in the profile presented herewith not reflecting the true situations in some communities. And regardless, it remains true that even the smallest number of deaths is nothing short of tragic. The sense of urgency becomes undeniably greater, however, when these events transpire within a short period of time in a same community.

Also, hospitalization rates in connection with suicide attempts have grown continuously over the past several years in Nunavik, such that the variances with the population of Québec have become more significant (Figure 22). It also appears that this increase impacts both coasts nearly equally, despite the bias regarding the data on hospitalizations for residents of the Ungava Coast.

Figure 22 Adjusted hospitalization rates (/10,000) associated with a suicide attempt, Nunavik, Nunavik coasts and Québec as a whole, 2007-2012 and 2012-2017

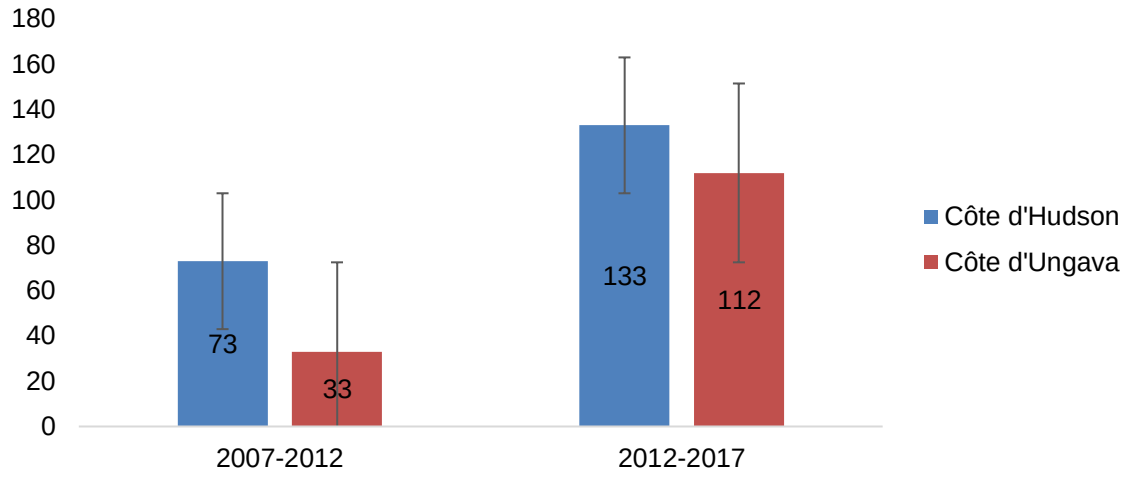


Secondary source: Infocentre de santé publique du Québec. Indicator updated on February 12, 2018.
Primary sources:
- MSSS, Register of hospitalizations, MED-ECHO (electronic file), update and territorial breakdown, version M34-2017;
- MSSS, Estimations et projections démographiques, electronic version (1981-1995: April 2012 version, 1996-2036: May 2017 version).
Note: The interpretation of temporal trends for the periods 2007-2012 and 2012-2017 should be done with great caution given the modifications to the reporting criteria for defining hospitalizations at UTHC.

Figure 23 reveals that the number of hospitalizations subsequent to a suicide attempt among adults less than 35 years of age[26] is particularly high, compared with other age groups, and this on both Nunavik coasts. Also, hospitalization rates associated with a suicide attempt are much higher among women than among men (Figure 24).

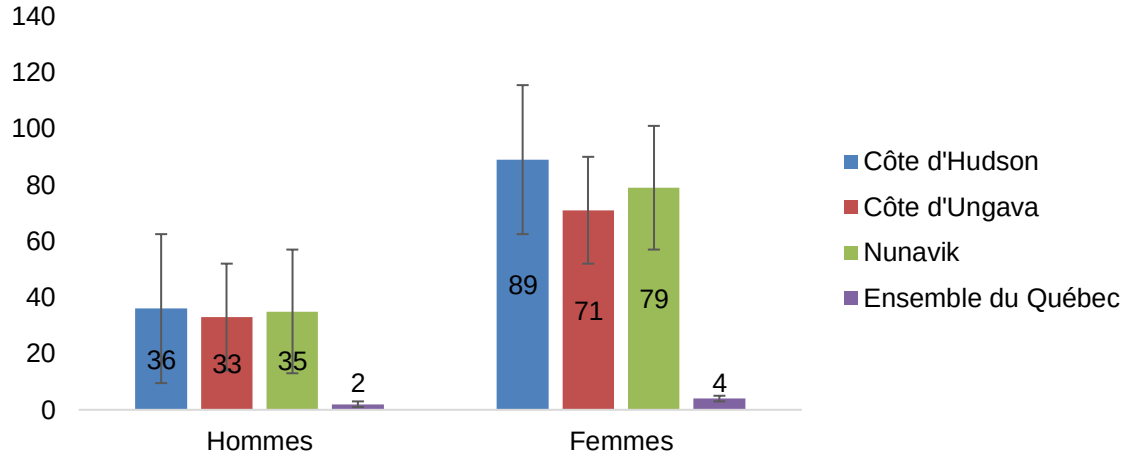
[26] Rates for groups over 35 years of age are based on numerators that are too small to allow for presenting the data.

Figure 23 **Crude hospitalization rates (/10,000) associated with a suicide attempt, 15 to 34 years of age, Nunavik, Nunavik coasts, 2007-2012 and 2012-2017**



Secondary source: Infocentre de santé publique du Québec. Indicator updated on February 12, 2018.
Primary sources:
- MSSS, Register of hospitalizations, MED-ECHO (electronic file), update and territorial breakdown, version M34-2017;
- MSSS, Estimations et projections démographiques, electronic version (1981-1995: April 2012 version, 1996-2036: May 2017 version).
Note: The interpretation of temporal trends for the periods 2007-2012 and 2012-2017 should be done with great caution given the modifications to the reporting criteria for defining hospitalizations at UTHC.

Figure 24 **Adjusted hospitalization rates (/10,000) associated with a suicide attempt, men and women, Nunavik, Nunavik coasts and Québec as a whole, 2012-2017**

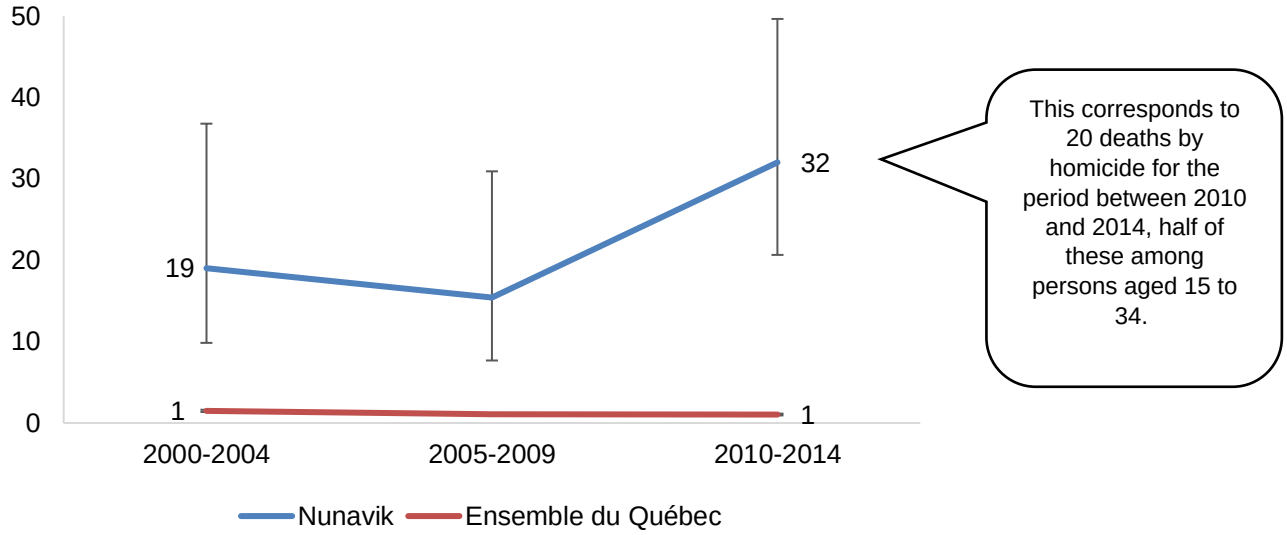


Secondary source: Infocentre de santé publique du Québec. Indicator updated on February 12, 2018.
Primary sources:
- MSSS, Register of hospitalizations, MED-ECHO (electronic file), update and territorial breakdown, version M34-2017;
- Discharge Abstract Database metadata (DAD), Canadian Institute for Health Information, update and territorial breakdown, version M34-2107;
- MSSS, Estimations et projections démographiques, electronic version (1981-1995: April 2012 version, 1996-2036: May 2017 version).
Note: The interpretation of temporal trends for the periods 2007-2012 and 2012-2017 should be done with great caution given the modifications to the reporting criteria for defining hospitalizations at UTHC.

3.3.2.2 Assault and homicides

The mortality rates due to homicide appear to have experienced a rise (non-significant) in Nunavik, with the effect that the variances with Québec as a whole have become more significant over the past year (Figure 25). In Québec, these rates appear to have remained stable over the same period.

Figure 25 Adjusted mortality rates (/100,000) due to homicide, Nunavik and Québec as a whole, 2000-2004, 2005-2009 and 2010-2014

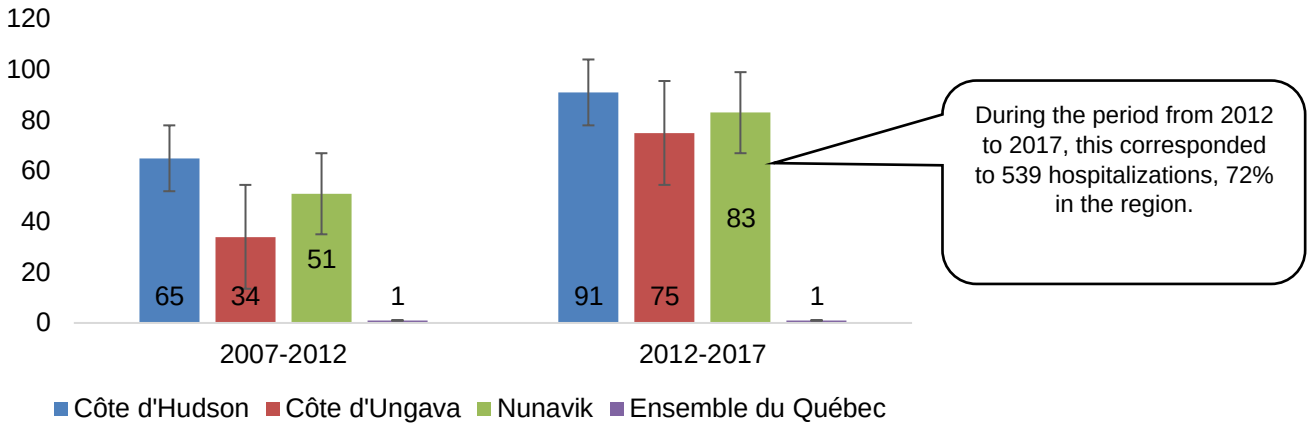


Secondary source: Infocentre de santé publique du Québec. Indicator updated on February 12, 2018.
Primary sources:
MSSS, Register of deaths (electronic file), update and territorial breakdown, version M34-2017;
- MSSS, Estimations et projections démographiques, electronic version (1981-1995: April 2012 version, 1996-2036: May 2017 version).

As for hospitalization rates associated with assault, these increased significantly in the region as opposed to Québec, where they remained stable (Figure 26). These increases are significant on both the Hudson Coast and the Ungava Coast, which purports that they cannot be explained by the information bias created with the modifications to the method of reporting UTHC hospitalizations during the last period.

The report *Interpersonal violence and community safety* in *Qanuilirpitaa ? 2017* notably provides data on physical violence suffered during childhood, as an adult and by the elderly, according to age, gender and other sociodemographic indicators (Muckle et al., 2021).

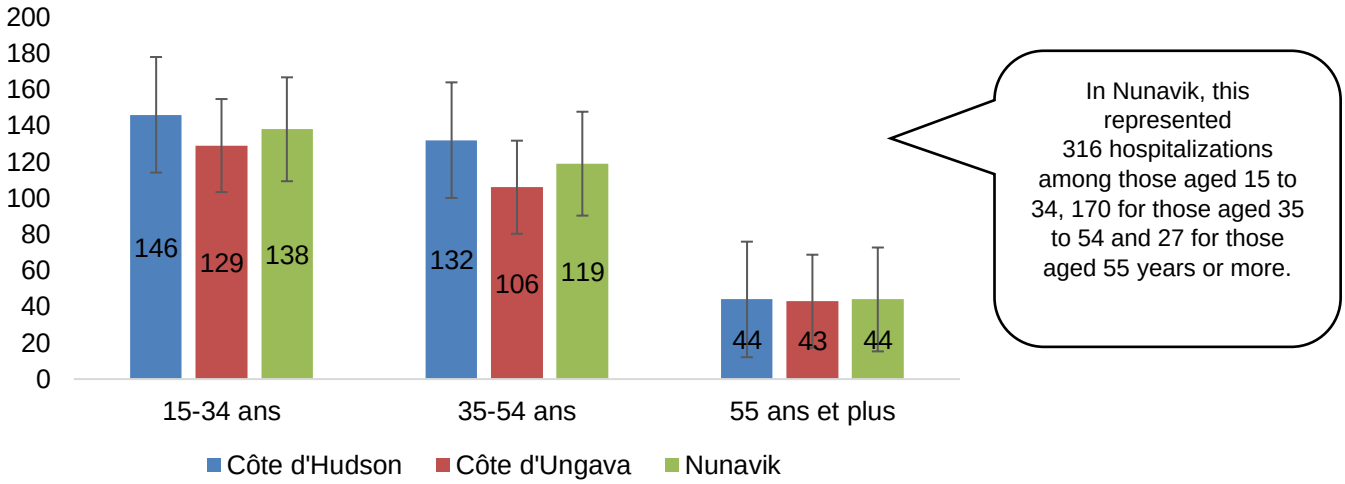
Figure 26 **Adjusted hospitalization rates (/10,000) associated with assault, Nunavik, Nunavik coasts and Québec as a whole, 2007-2012 and 2012-2017**



Secondary source: Infocentre de santé publique du Québec. Indicator updated on February 12, 2018.
Primary sources:
- MSSS, Register of hospitalizations, MED-ECHO (electronic file), update and territorial breakdown, version M34-2017;
- Discharge Abstract Database metadata (DAD), Canadian Institute for Health Information, update and territorial breakdown, version M34-2107;
- MSSS, Estimations et projections démographiques, electronic version (1981-1995: April 2012 version, 1996-2036: May 2017 version).
Note: The interpretation of temporal trends for the periods 2007-2012 and 2012-2017 should be done with great caution given the modifications to the reporting criteria for defining hospitalizations at UTHC.

As shown in Figure 27, hospitalization rates associated with assault are significatively lower among adults aged 55 years or more.

Figure 27 **Crude hospitalization rates (/10,000) associated with assault, by age group, Nunavik, Nunavik coasts, 2012-2017**



Secondary source: Infocentre de santé publique du Québec. Indicator updated on February 12, 2018.
Primary sources:
- MSSS, Register of hospitalizations, MED-ECHO (electronic file), update and territorial breakdown, version M34-2017;
- MSSS, Estimations et projections démographiques, electronic version (1981-1995: April 2012 version, 1996-2036: May 2017 version).
Note: The interpretation of temporal trends for the periods 2007-2012 and 2012-2017 should be done with great caution given the modifications to the reporting criteria for defining hospitalizations at UTHC.

3.3.3 IN SHORT

Non-intentional trauma:
1. Mortality rates in Nunavik are about 7 times greater than in Québec.
2. A rise was observed in the number of hospitalizations due to NIT among the 15-34 year old group on both coasts.
3. The primary causes of these hospitalizations vary according to age group. Accidents with off-road vehicles and motor vehicles are the primary cause for persons aged 15 to 34, and falls the primary cause of NIT among persons aged 35 years or more.
4. Injuries caused by off-road vehicles and motor vehicles mostly involved young adults (15-34 years), and this regardless of their home coast.

Intentional trauma:
1. The mortality rate by suicide in Nunavik is 8 times higher than that in Québec.
2. Hospitalization rates subsequent to suicide attempts have increased significantly among the population in Nunavik. This increase impacts both coasts nearly equally, despite the bias regarding the data on hospitalizations for residents of the Ungava Coast.
3. Also revealed are increases (non-significant) in deaths by homicide and significant increases in hospitalizations associated with assault, especially among those aged 15 to 34.

3.4 The health of seniors

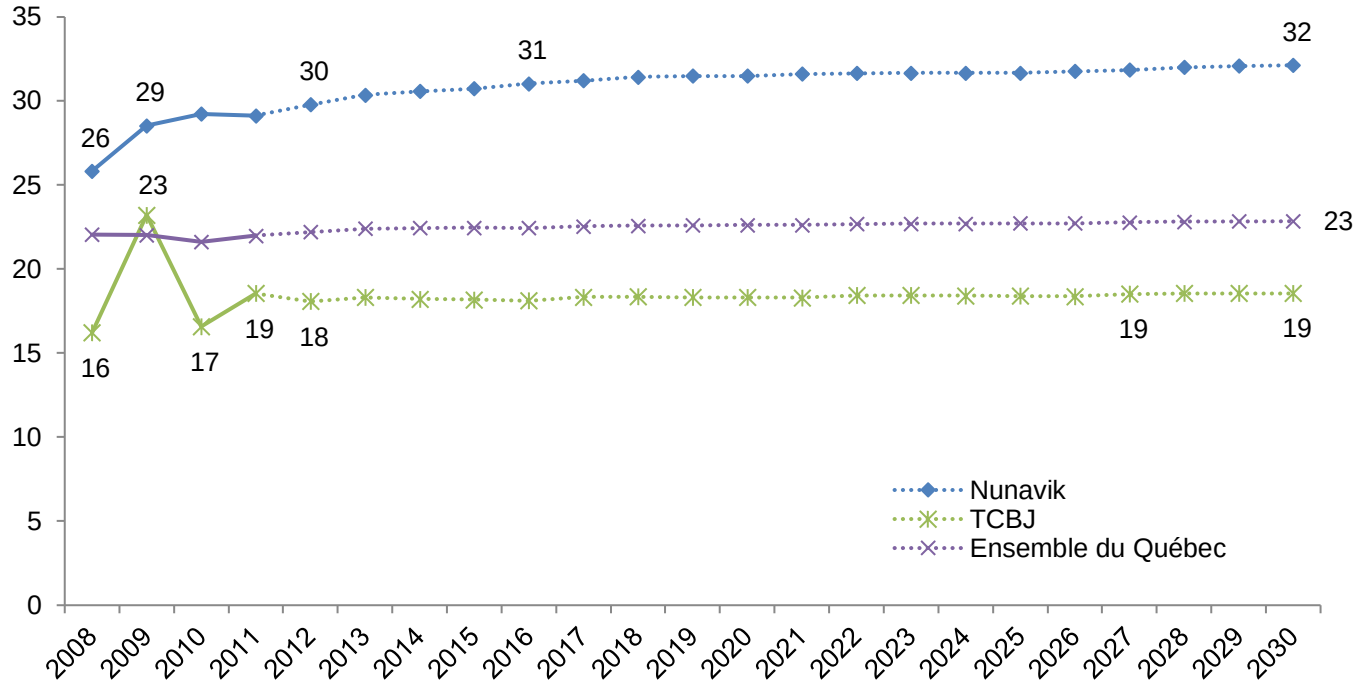
With the growth of Nunavik's elderly population, the frequency of chronic diseases will most likely increase over the coming years. As mentioned in section 3.2, the chronic diseases most frequently observed in persons aged 55 years or more include cancer, following by RSD and CSD.

3.4.1 CANCERS

Because the cancer registry for Québec was last updated in 2010, this report does not comprise any recent data on the incidence of cancer (new cases per year) in Nunavik. Given this, hospitalization data associated with cancer provide the best portrait of the situation at present.

Also, the latest incidence data can also be used to develop projections over time. Figure 28 illustrates that an increase in cancer incidence rates is already underway in Nunavik and should theoretically continue its course over the next 20 years. This trend also posits that if Québec rates in this regard remain stable, the variance between incidence rates in Nunavik and elsewhere in Québec will grow.

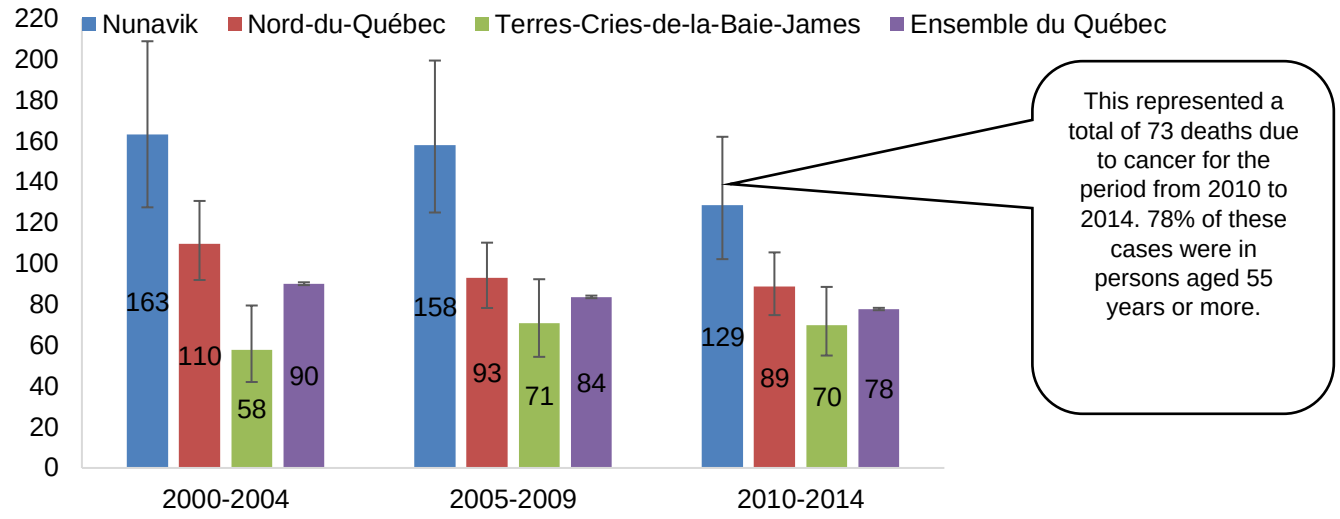
Figure 28 Cancer incidence rates and future projections (/100,000), Nunavik, Terres-Cries-de-la-Baie-James region and Québec as a whole, 2008 to 2030



Secondary source: Infocentre de santé publique du Québec. Indicator updated on May 8, 2017.
Primary sources:
- MSSS, Cancer registry, June 2013 version (electronic file), update and territorial breakdown, version M2013-2014;
- MSSS, Estimations et projections démographiques, electronic version (1981-1995: April 2012 version, 1996-2036: December 2014 version) according to the geographic breakdown in effect in April 2014.
Note: Data for the years 2008 to 2010 are based on the number of actual cases. These data consist of projections beginning in 2011.

Whereas cancer incidence rates will seemingly continue to rise over the coming years, mortality rates associated with cancer appear to display a certain tendency (non-significant) to drop in Nunavik over the period considered (Figure 29).

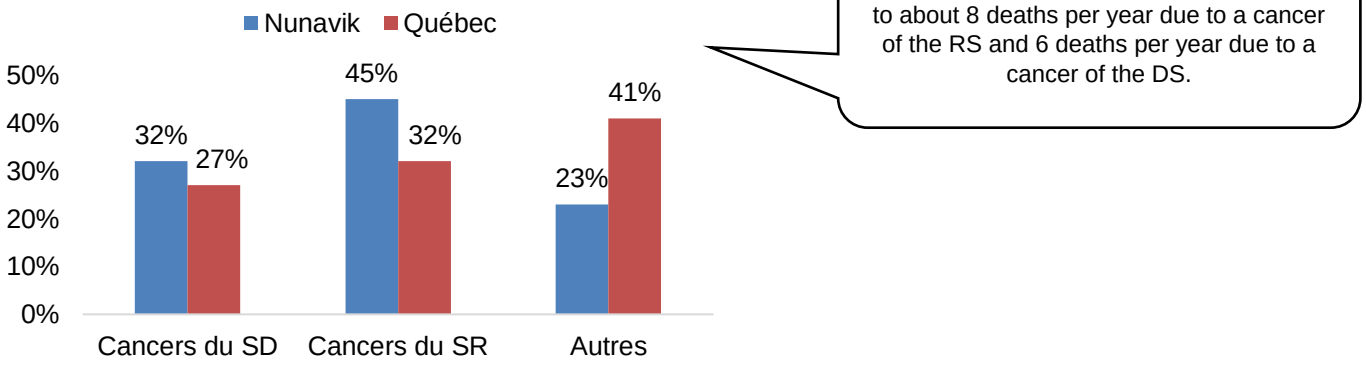
Figure 29 **Adjusted mortality rates (/100,000) associated with cancer, Nunavik, Nord-du-Québec, Terres-Cries-de-la-Baie-James region and Québec as a whole, 2000-2004, 2004-2009 and 2010-2014**



Secondary source: Infocentre de santé publique du Québec. Indicator updated on February 12, 2018.
Primary sources:
MSSS, Register of deaths (electronic file), update and territorial breakdown, version M34-2017;
- MSSS, Estimations et projections démographiques, electronic version (1981-1995: April 2012 version, 1996-2036: May 2017 version).

As regards cancer sites[27], cancers of the respiratory system (RS) are responsible for the greatest number of deaths, followed by cancers of the digestive system (DS). These two types of cancer are responsible for over three-quarters of the deaths from cancer in Nunavik, but only 60% of the deaths in Québec (Figure 30). It must also be noted that the number of deaths due to breast cancer and cervical cancer also account for a large portion of the cancer deaths in Nunavik and in Québec ("others", Figure 30). The number of deaths associated with these types of cancer in Nunavik is too small to be presented on its own.

Figure 30 **Proportion of deaths by cancer according to site, Nunavik and Québec as a whole, 2010-2014**

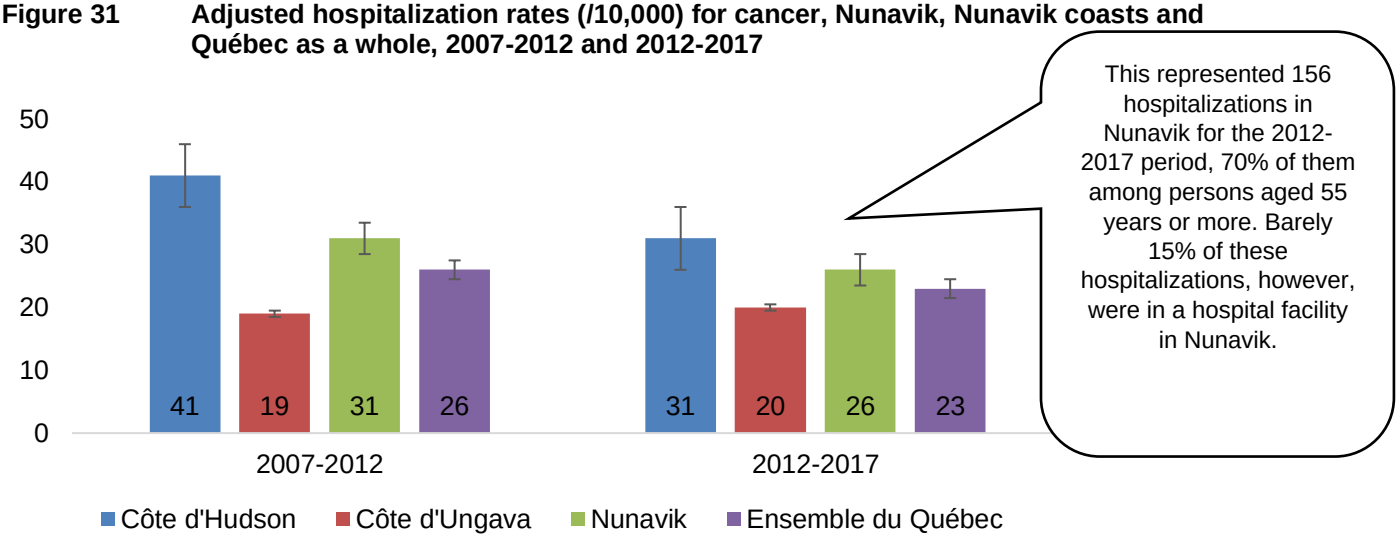


Secondary source: Infocentre de santé publique du Québec. Indicator updated on February 12, 2018.
Primary sources:
MSSS, Register of deaths (electronic file), update and territorial breakdown, version M34-2017;
- MSSS, Estimations et projections démographiques, electronic version (1981-1995: April 2012 version, 1996-2036: May 2017 version).

[27] Origin of the tumor (topography).

Hospitalization rates for cancer are about the same in Nunavik as elsewhere in Québec (Figure 31). This is consistent with cancer incidence rates, which were still relatively low compared to those of Québec from 2008 to 2010 (Figure 28). Between 2007 and 2017, the variance between the two Nunavik coasts became narrower (Figure 31).

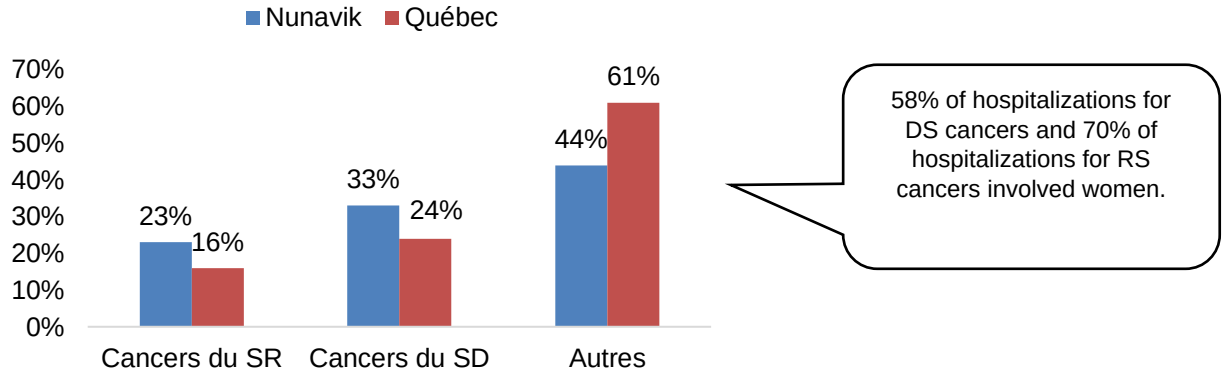
Figure 31 Adjusted hospitalization rates (/10,000) for cancer, Nunavik, Nunavik coasts and Québec as a whole, 2007-2012 and 2012-2017



Secondary source: Infocentre de santé publique du Québec. Indicator updated on February 12, 2018.
Primary sources:
- MSSS, Register of hospitalizations, MED-ECHO (electronic file), update and territorial breakdown, version M34-2017;
- MSSS, Estimations et projections démographiques, electronic version (1981-1995: April 2012 version, 1996-2036: May 2017 version).
Note: The interpretation of temporal trends for the periods 2007-2012 and 2012-2017 should be done with great caution given the modifications to the reporting criteria for defining hospitalizations at UTHC.

As regards cancer site, we continue to note that RS cancers and DS cancers continue to account for 60% of all cancer-related hospitalizations in Nunavik, while they only represent 40% of cancer hospitalizations in Québec (Figure 32). The other sites (breast cancers, prostate cancers or cancer of the female reproductive organs) are too few (with minimum rates) to be presented separately.

Figure 32 Proportion of causes of hospitalization for cancer according to site, Nunavik and Québec as a whole, 2010-2014



Secondary source: Infocentre de santé publique du Québec. Indicator updated on February 12, 2018.
Primary sources:
- MSSS, Register of hospitalizations, MED-ECHO (electronic file), update and territorial breakdown, version M34-2017; - MSSS, Estimations et projections démographiques, electronic version (1981-1995: April 2012 version, 1996-2036: May 2017 version).
Note: The interpretation of temporal trends for the periods 2007-2012 and 2012-2017 should be done with great caution given the modifications to the reporting criteria for defining hospitalizations at UTHC.

There are more cases of mortality and hospitalization for RS and DS cancer in Nunavik than in Québec. A slight drop in mortality due to RS cancer (Figure 33) can be observed; the mortality rate due to DS cancer, however, appears to have increased slightly in Nunavik (Figure 34).

Figure 33 Adjusted mortality (/100,000) and hospitalization rates (/10,000), RS cancers, Nunavik and Québec as a whole, 2000-2004, 2005-2009 and 2010-2014

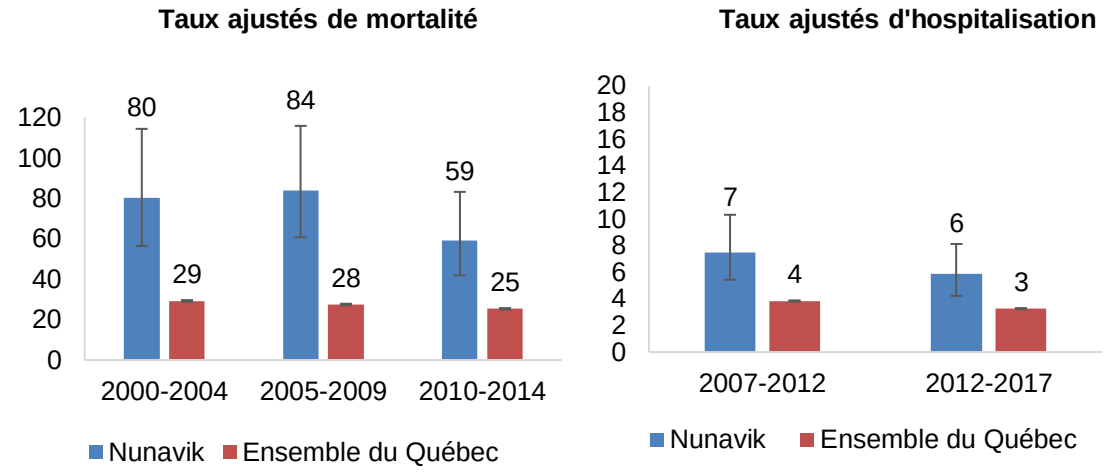
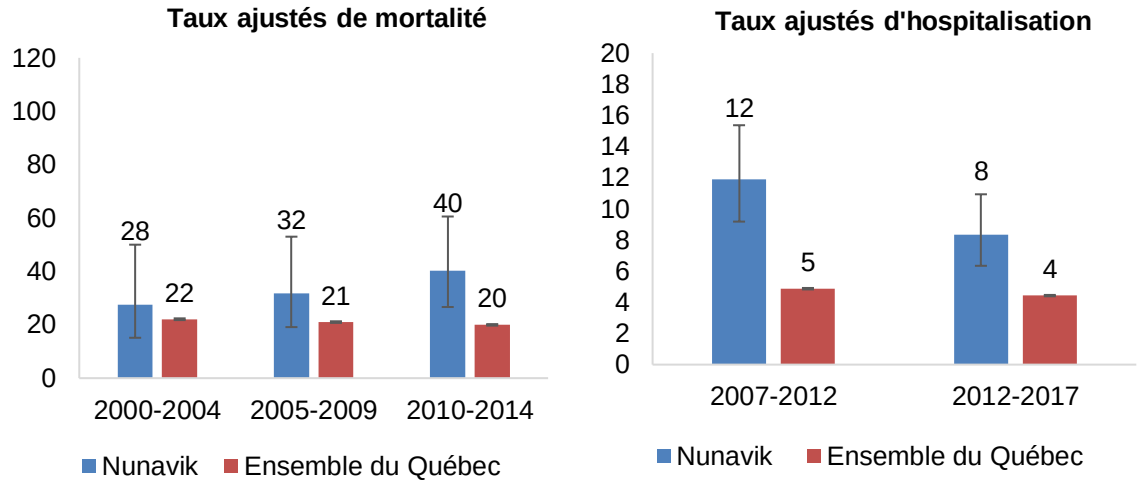


Figure 34 Adjusted mortality (/100,000) and hospitalization rates (/10,000), DS cancers, Nunavik and Québec as a whole, 2000-2004, 2005-2009 and 2010-2014



Figures 33 and 34: data on hospitalizations
Secondary source: Infocentre de santé publique du Québec. Indicator updated on February 12, 2018.
Primary sources:
- MSSS, Register of hospitalizations, MED-ECHO (electronic file), update and territorial breakdown, version M34-2017;
- MSSS, Estimations et projections démographiques, electronic version (1981-1995: April 2012 version, 1996-2036: May 2017 version).
Note: The interpretation of temporal trends for the periods 2007-2012 and 2012-2017 should be done with great caution given the modifications to the reporting criteria for defining hospitalizations at UTHC.
Figures 33 and 34: data on mortality.
Secondary source: Infocentre de santé publique du Québec. Indicator updated on February 12, 2018.
Primary sources:
MSSS, Register of deaths (electronic file), update and territorial breakdown, version M34-2017;
- MSSS, Estimations et projections démographiques, electronic version (1981-1995: April 2012 version, 1996-2036: May 2017 version).

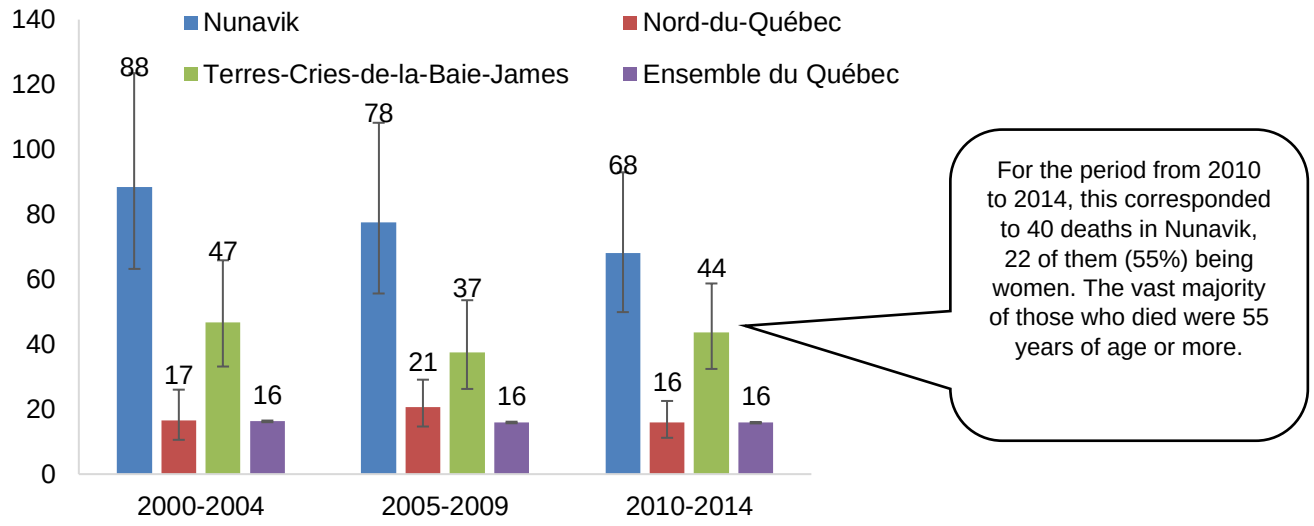
3.4.2 RESPIRATORY SYSTEM DISEASES (RSD)

Disorders that fall under the term "respiratory system diseases" (RSD) include all of the disorders involving the upper respiratory tract (such as sinusitis and rhinosinusitis) along with the flu, pneumonia, chronic obstructive pulmonary disease (COPD)[28] and all other disorders of the lower respiratory tract (Statistics Canada, 2019). Hospitalizations in connection with tuberculosis were also considered, given the magnitude of the problem in the region.

For further details on the respiratory health of the Nunavimmiut, we recommend reading the report *Respiratory health* in *Qanuilirpitaa? 2017*, which considers elements such as asthma, COPD, the symptoms of respiratory distress (chronic cough, chronic sputum, chronic bronchitis, wheezing, dyspnea) as well as the prior history included in the health record (active TB disease and hospitalization during early childhood due to a respiratory infection; Robert et al., 2020). In addition, given that tobacco use is a major risk factor for RSD, the report *Substance use* in *Qanuilirpitaa ? 2017* considers various factors such as the age at which a person began smoking tobacco, the prevalence (of smokers), the average number of cigarettes smoked per day, secondary smoke and prior attempts to stop smoking (Bélanger et al., 2020).

It bears remembering that RSD are the second most frequent cause of mortality among persons aged 55 years or more. As indicated below (Figure 35), the proportion of mortality by RSD in Nunavik presents an important variance when compared with that for other populations in Québec, even despite this gap being somewhat narrowed over the last few years.

Figure 35 Adjusted mortality rates (/100,000) associated with RSD, Nunavik, Nord-du-Québec, Terres-Cries-de-la-Baie-James region and Québec as a whole, 2000-2004, 2005-2009 and 2010-2014

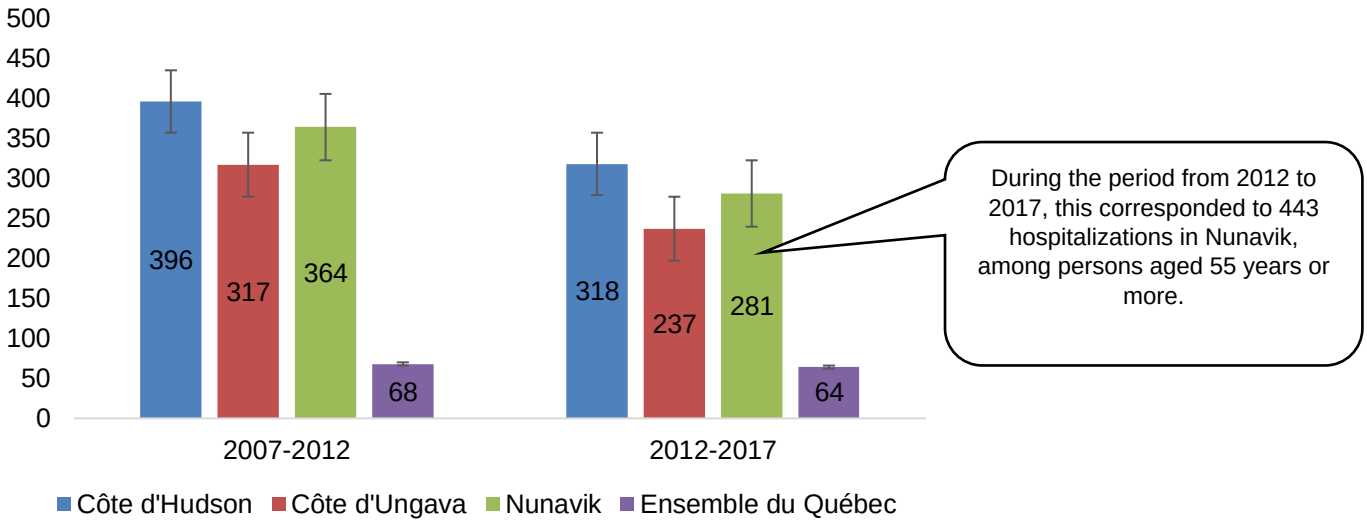


Secondary source: Infocentre de santé publique du Québec. Indicator updated on February 12, 2018.
Primary sources:
MSSS, Register of deaths (electronic file), update and territorial breakdown, version M34-2017;
- MSSS, Estimations et projections démographiques, electronic version (1981-1995: April 2012 version, 1996-2036: May 2017 version).

[28] Chronic obstructive pulmonary disease (COPD) is characterized by shortness of breath, a chronic cough and an exacerbated production of sputum (Public Health Agency of Canada, 2004).

Hospitalization rates associated with RSD are dropping significantly on both coasts of Nunavik. Despite this, the rates for the Hudson Coast are still significantly higher than those for the Ungava Coast[29] (Figure 36).

Figure 36 Adjusted hospitalization rates (/10,000) for RSD, Nunavik, Nunavik coasts and Québec as a whole, 2007-2012 and 2012-2017

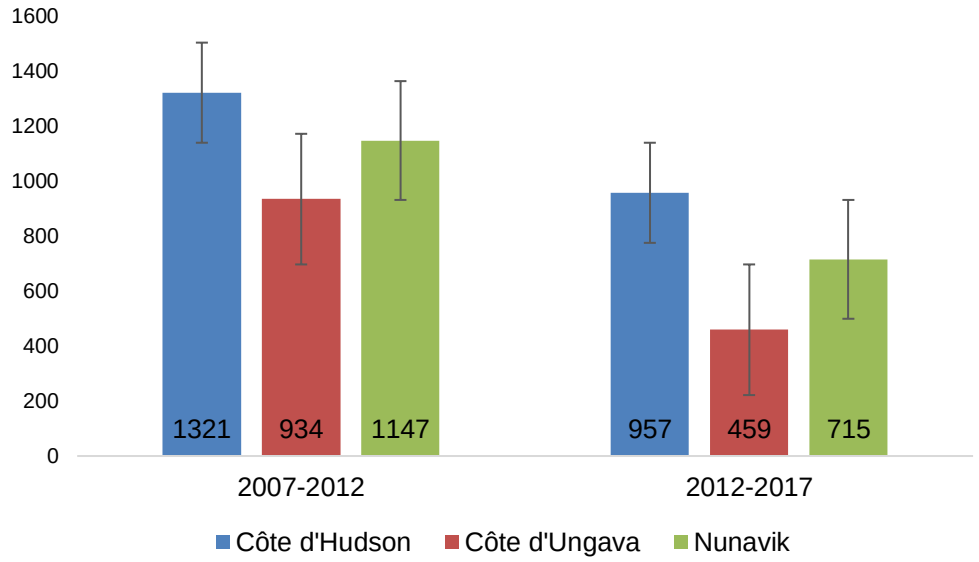


Secondary source: Infocentre de santé publique du Québec. Indicator updated on February 12, 2018.
Primary sources:
- MSSS, Register of hospitalizations, MED-ECHO (electronic file), update and territorial breakdown, version M34-2017;
- MSSS, Estimations et projections démographiques, electronic version (1981-1995: April 2012 version, 1996-2036: May 2017 version).
Note: The interpretation of temporal trends for the periods 2007-2012 and 2012-2017 should be done with great caution given the modifications to the reporting criteria for defining hospitalizations at UTHC.

Figure 37 indicates a marked reduction for both coasts in terms of hospitalization rates for persons aged 55 years or more. The rates for the population on the Hudson Coast, however, remain quite higher than those for the population on the Ungava Coast[30].

[29] Despite the information bias as regards the reporting criteria for UTHC hospitalizations.
[30] Despite the information bias as regards the reporting criteria for UTHC hospitalizations.

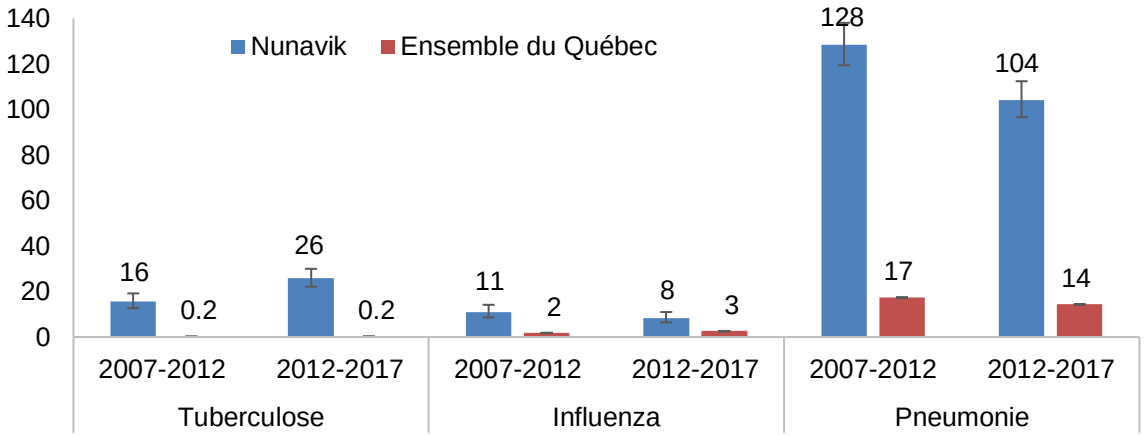
Figure 37 Crude hospitalization rates (/10,000) associated with RSD, 55 years of age or more, Nunavik, Nunavik coasts, 2007-2012 and 2012-2017



Secondary source: Infocentre de santé publique du Québec. Indicator updated on February 12, 2018.
Primary sources:
- MSSS, Register of hospitalizations, MED-ECHO (electronic file), update and territorial breakdown, version M34-2017;
- Discharge Abstract Database metadata (DAD), Canadian Institute for Health Information, update and territorial breakdown, version M34-2107;
- MSSS, Estimations et projections démographiques, electronic version (1981-1995: April 2012 version, 1996-2036: May 2017 version).
Note: The interpretation of temporal trends for the periods 2007-2012 and 2012-2017 should be done with great caution given the modifications to the reporting criteria for defining hospitalizations at UTHC.

As depicted in Figure 38, we can see that tuberculosis outbreaks in the region during the period 2012-2017 had the effect of increasing the hospitalization rates associated with this infection. Tuberculosis was in fact the only respiratory infection to have presented an increase in hospitalizations during this period.

Figure 38 Adjusted hospitalization rates (/10,000) for targeted respiratory infections, Nunavik and Québec as a whole, 2007-2012 and 2012-2017

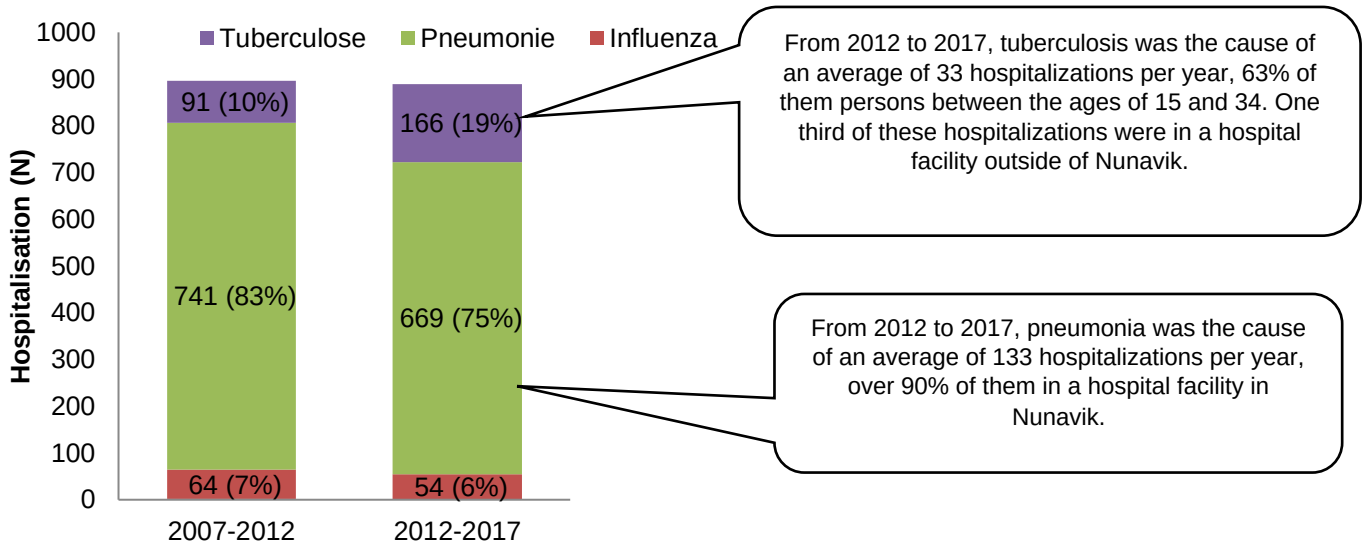


Secondary source: Infocentre de santé publique du Québec. Indicator updated on February 12, 2018.
Primary sources:
- MSSS, Register of hospitalizations, MED-ECHO (electronic file), update and territorial breakdown, version M34-2017;
- MSSS, Estimations et projections démographiques, electronic version (1981-1995: April 2012 version, 1996-2036: May 2017 version).

This being said, during the period from 2012 to 2017, pneumonia accounted for 4 times more hospitalizations than tuberculosis and influenza combined (Figure 39). Hospitalizations for tuberculosis

increasingly concern young adults between the ages of 15 and 34 (not indicated). These patients often need to be hospitalized outside of Nunavik in order to have access to negative pressure rooms used to isolate active tuberculosis cases during the period of infectiousness.

Figure 39 Total number and proportion of hospitalizations (%) for targeted respiratory infections, Nunavik, 2007-2012 and 2012-2017



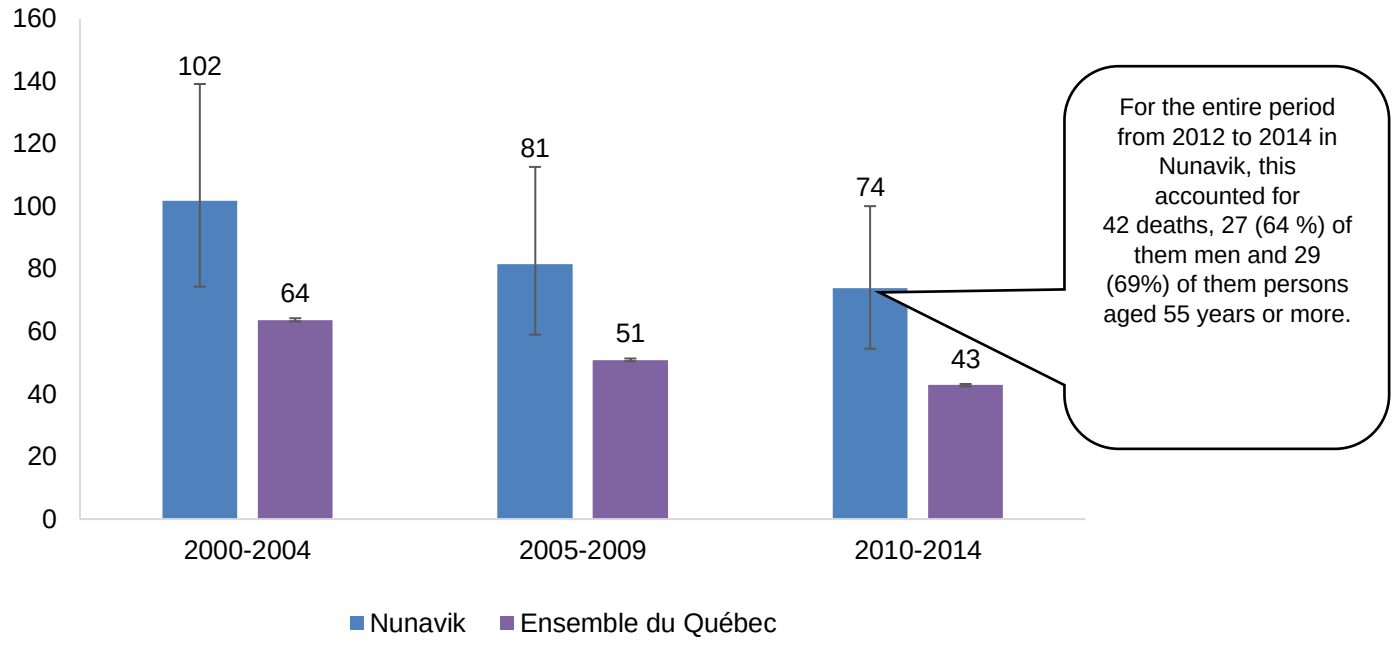
Secondary source: Infocentre de santé publique du Québec. compilation by Nathalie Gravel.
Primary sources:
- MSSS, Register of hospitalizations, MED-ECHO (electronic file), update and territorial breakdown, version M34-2017.

3.4.3 CIRCULATORY SYSTEM DISEASES (CSD)

CSD group together the various heart and blood vessel diseases, including chronic and acute rheumatic heart diseases, hypertensive diseases (among them hypertension), cerebrovascular diseases (such as a cerebrovascular accident or CVA), and ischemic heart diseases (including angina and myocardial infarction or MI). The associated mortality and hospitalization rates are presented in this section.

Much like the mortality rates associated with RSD, those associated with CSD present a non-significant downward trend, thereby limiting the variance between the rates in Nunavik and those elsewhere in Québec (Figure 40). However, the variance between Nunavik and Québec is still significant.

Figure 40 **Adjusted mortality rates (/100,000) associated with CSD, Nunavik and Québec as a whole, 2000-2004, 2005-2009 and 2010-2014**

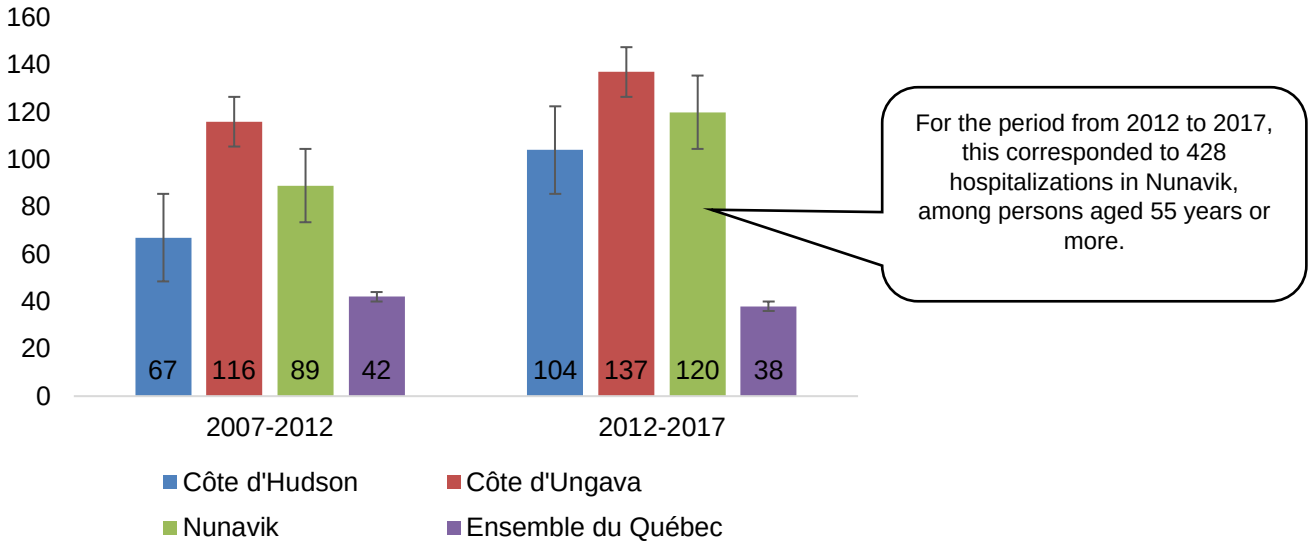


Secondary source: Infocentre de santé publique du Québec. Indicator updated on February 12, 2018.
Primary sources:
MSSS, Register of deaths (electronic file), update and territorial breakdown, version M34-2017;
- MSSS, Estimations et projections démographiques, electronic version (1981-1995: April 2012 version, 1996-2036: May 2017 version).

Hospitalizations associated with CSD are on the rise in Nunavik, contrary to what is happening elsewhere in Québec (Figure 41). The variance between the population rates for Nunavik and for Québec is thus exacerbated.

Unlike what was seen with RSD (section 3.4.2), the population of the Ungava Coast had higher hospitalization rates for cases of CSD. This applies to both of the periods considered, and not only for the time between 2012 and 2017 impacted by the changes to reporting criteria for UTHC hospitalizations.

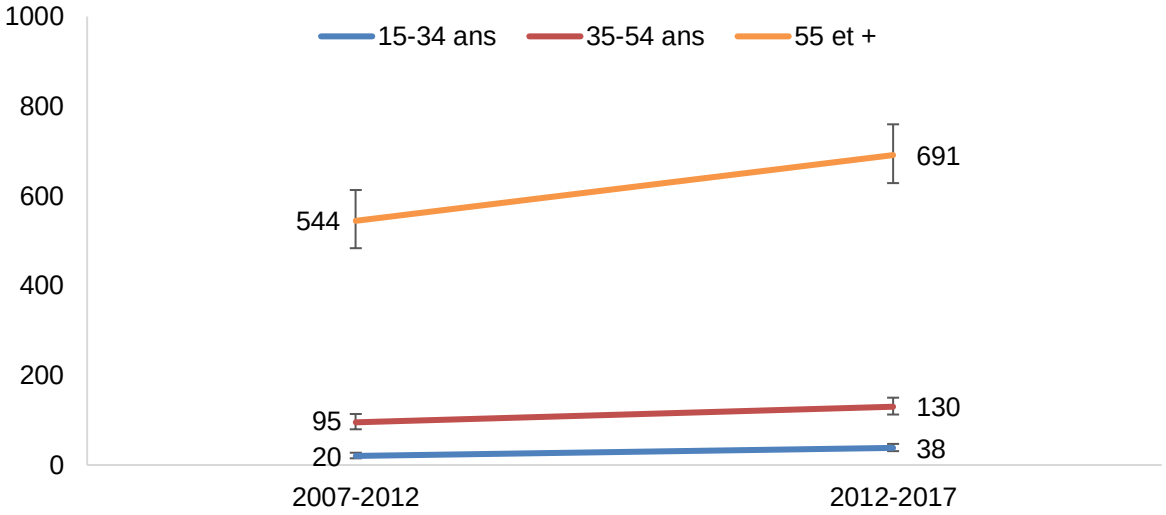
Figure 41 **Adjusted hospitalization rates (/10,000) for CSD, Nunavik, Nunavik coasts and Québec as a whole, 2007-2012 and 2012-2017**



Secondary source: Infocentre de santé publique du Québec. Indicator updated on February 12, 2018.
Primary sources:
- MSSS, Register of hospitalizations, MED-ECHO (electronic file), update and territorial breakdown, version M34-2017;
- Discharge Abstract Database metadata (DAD), Canadian Institute for Health Information, update and territorial breakdown, version M34-2107;
- MSSS, Estimations et projections démographiques, electronic version (1981-1995: April 2012 version, 1996-2036: May 2017 version).

A rise in hospitalizations associated with CSD was observed among persons aged 55 years or more between the two periods considered (Figure 42). Crude hospitalization rates generated by CSD are presented by coast (in Figure 43) for general information purposes[31].

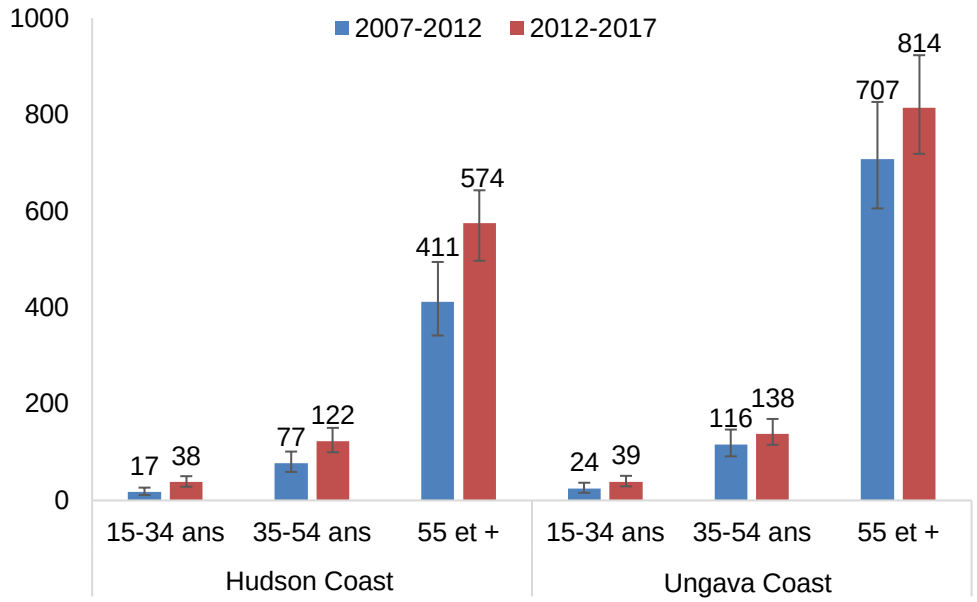
Figure 42 **Crude hospitalization rates (/10,000) associated with CSD, by age group, Nunavik, 2007-2012 and 2012-2017**



Secondary source: Infocentre de santé publique du Québec. Indicator updated on February 12, 2018.
Primary sources:
- MSSS, Register of hospitalizations, MED-ECHO (electronic file), update and territorial breakdown, version M34-2017;
- MSSS, Estimations et projections démographiques, electronic version (1981-1995: April 2012 version, 1996-2036: May 2017 version).

[31] Comparing data from the two coasts is not recommended, given the modification of the reporting criteria for UTHC hospitalizations in 2012.

Figure 43 **Crude hospitalization rates (/10,000) associated with CSD, by age group, Nunavik, Nunavik coasts, 2007-2012 and 2012-2017**



Secondary source: Infocentre de santé publique du Québec. Indicator updated on February 12, 2018.
Primary sources:
- MSSS, Register of hospitalizations, MED-ECHO (electronic file), update and territorial breakdown, version M34-2017;
- MSSS, Estimations et projections démographiques, electronic version (1981-1995: April 2012 version, 1996-2036: May 2017 version).
Note: Comparing data from the two coasts is not recommended, because of the modification of the reporting criteria for UTHC hospitalizations in 2012.

3.4.4 IN SHORT

1. As the proportion of seniors grows in Nunavik, the frequency and proportion of chronic diseases will undoubtedly increase over the coming years, specifically cancer, respiratory system diseases and circulatory system diseases[32].

Cancers:

2. Cancers of the respiratory and digestive systems account for the greater number of deaths among Nunavik's elderly (77%).
3. Hospitalization rates for cancer are diminishing significantly in Nunavik, catching up with rates for Québec as a whole.
4. Mortality rates associated with cancers among the population of Nunavik are still much greater than elsewhere in Québec, mainly because of the significant presence of respiratory and digestive system cancers.
5. Hospitalization rates due to cancer are higher for the population of the Hudson Coast than that of the Ungava Coast.

Respiratory system diseases:

6. The mortality and hospitalization rates associated with respiratory system diseases have dropped significantly in Nunavik, despite these rates being high compared to those for Québec.
7. Hospitalizations for tuberculosis have been rising in Nunavik these last years, primarily impacting youth between the ages of 15 and 34. Hospitalizations for other respiratory system diseases, in turn, increasingly concern persons aged 55 years or more.

[32] Reminder of the information bias as regards the reporting criteria for UTHC hospitalizations.

Circulatory system diseases:

8. The mortality rate associated with circulatory system diseases in Nunavik reveals a downwards trend (non-significant).
9. Hospitalizations are on the rise, with the effect that the variance with those in Québec is becoming more pronounced.

4 Conclusion

This profile strives to present hospital morbidity and mortality indicators, as well as sociodemographic data for the Nunavik population aged 15 years or more. The proportion of people aged 35 years or more is steadily rising in the region. Within 15 years or so, adults will number over 10,000, an increase that will inevitably have an effect on the population's health requirements and the development of the services needed to adequately meet them.

It bears reiterating that the changes brought to the reporting criteria for hospitalizations at the Ungava Tulattavik Health Centre (UTHC) in 2012 may have resulted in an increase in hospitalization rates for the population of the Ungava Coast. The modification in question mostly involved hospitalizations for NIT, as the latter is what usually culminates in hospitalizations of fewer than 24 hours.

4.1 Review of results

While the life expectancy of Nunavik's men has climbed, that of women has remained stable over the last few decades. The life expectancy of the Nunavik population (that of men being 66 years and that of women, 69) is around 15 years less than that of the population of Québec.

As for mortality due to all types of causes, it appears to be dropping in the region; hospitalizations, however, experienced a marked increase. This increase could, however, be due to the changes in the reporting criteria at the UTHC during the period considered.

The most frequent causes of mortality and hospital morbidity among persons aged between 15 and 54 years are associated with NIT and IT. Mortality rates associated with NIT in Nunavik are presenting a downwards trend, albeit non-significant. However, these rates are still very high compared to Québec's other Nordic populations. Hospitalizations due to NIT appear to have significantly increased in Nunavik, but this upward rise could be partly explained by the changes to how hospitalizations are reported at the UTHC, beginning in 2012.

The primary causes of NIT vary according to age group. ORV and MV accidents are the primary cause for persons aged 15 to 34, and falls the primary cause of NIT among persons aged 35 years or more. As for IT, hospitalization rates subsequent to a suicide attempt and assault have significantly increased among the Nunavik population during the period considered. These increases are particularly marked among young adults between the ages of 15 and 34. Mortality rates by suicide and homicide are much higher for the population of Nunavik than that of other Québec groups. The mortality rate for men is twice as high as that for women, and the hospitalization rate subsequent to a suicide attempt is twice as high for women as it is for men.

The proportion of seniors in Nunavik is growing, accompanied by a rise in chronic diseases, notably cancers, RSD and CSD. The cancers most frequently encountered in Nunavik are cancers of the RS cancers and DS, and unlike the situation in Québec, breast cancer and prostate cancer are still rare in the region. And despite diminishing hospitalization rates for cancer in Nunavik, the region still posts higher mortality rates than other regions of Québec. This appears primarily due to the fact that the cancers most frequently encountered in Nunavik are those with the lowest survival rate (cancers of the respiratory system and of the digestive system). It also appears relevant that the slightly higher incidence of cancers is consistent with the fact that Nunavik is the region with the highest rate of tobacco use in the province (Bélanger et al., 2020).

Likewise, hospitalization rates associated with RSD are dropping in the region, except for those involving tuberculosis, a disease responsible for a rise in the hospitalization of persons aged between 15 and 34 years in Nunavik. Otherwise, hospitalizations for CSD are rising in the region, with the effect that the variance with indicators for other regions is becoming more pronounced. Despite this, mortality rates for RSD and CSD are still high when compared with those for other populations in Québec.

4.2 Implications for services provided to adults aged 15 to 34

As part of the Nunavik Clinical Plan, the data presented should allow for reviewing a number of the services offered in the region. They will also make it possible to identify how to best meet the needs of persons afflicted with complex physical and psychosocial problems and numerous chronic comorbid conditions. In fact, acute care systems, mostly designed to regularly respond to emergencies and short-term problems, eventually become outdated when societies are undergoing an epidemiological transition and experiencing a surge in chronic diseases. Hence, the care models that allow for improving the quality, continuity and cultural safety of the care provided to Canada's Aboriginal populations are known (Canadian Nurses Association, 2014; Browne et al., 2016; Greenwood et al., 2018) and can, with some challenges along the way, be adapted to the reality of life in Nunavik.

The scope of the repercussions of IT and NIT on Nunavik youth and adults calls for offering a continuum of services that target both prevention and assistance. Such an approach must also incorporate programs aimed at improving the mental health and resilience of the region's youth. The introduction of pilot programs providing early childhood support in Nunavik should lead to exciting opportunities for the region's younger population. By promoting good physical and mental health as of a very early age, these programs will help prevent chronic diseases and life habits with negative health impacts.

Programs focused on promoting mental health and the development of social skills during a child's early primary school years are also known to have positive impacts on mental health during adolescence, notably by fostering self-esteem. These programs have long-term repercussions in terms of distress and violence, as well as unhealthy behaviour such as tobacco use. Projects introduced by caring schools are also interesting and appear highly promising.

The sharp hike in the burden represented by chronic diseases must also be considered from the perspective of prevention; measures could include early health prevention and promotion initiatives supported by messages aligned with the Inuit population's social and cultural norms. Hiring Inuit personnel will be essential to the success of such programs; the systematic application of provincial policies with no consideration of local realities will have few chances of succeeding over the short or long term.

> *"[Translation] The system must adapt services to better meet today's challenges as well as the needs of the population. The recruitment and training of Inuit personnel continues to be a top priority, with the objective being to have Inuit holding 70% of the jobs within the next 25 years."* (Makivik Corporation, 2013).

Present-day health services have undoubtedly contributed to the improved health of Nunavimmiut over the last decades. However, despite the offer of certain basic services, most provided by non-Inuit health professionals, health indicators reveal the ongoing existence of barriers to accessing care.

This summarizes the rationale behind wanting to make further efforts to mobilize and support Inuit personnel. In addition, given that the population of Nunavik has an excellent knowledge of Inuktitut (INSPQ, 2021a), having these services offered in this language will be important.

In addition to targeted prevention and treatment, an examination must be conducted of the overall historical and contemporary structural factors that impact the health of the Inuit. The Inuit identity has been treated unfairly over the past few decades, and will need to rely on a solid Inuit foundation, including identity and culture in order to begin healing.

Nunavik has already proven to be highly resilient in this regard. Preserving Inuktitut as a language of instruction and the transfer of certain powers to regional authorities are visible proof of this. The

circumstances underpinning health inequities in Nunavik must be addressed through a multisectoral approach going well beyond health services which includes, among other things, policies addressing access to housing, food security, employment and social and economic development. The Nunavik population must have the opportunity of evolving in conditions that will enable it to draw its own path towards health and well-being.

Bibliography

Public Health Agency of Canada. (2004). *Chronic Obstructive Pulmonary Disease (COPD)* [Education and awareness]. https://www.canada.ca/en/public-health/services/chronic-diseases/chronic-respiratory-diseases/chronic-obstructive-pulmonary-disease-copd.html

Canada Revenue Agency. (2005). *Type of vehicle* [Description of services]. Government of Canada. https://www.canada.ca/en/revenue-agency/services/tax/businesses/topics/sole-proprietorships-partnerships/business-expenses/motor-vehicle-expenses/type-vehicle.html

Canadian Nurses Association. (2014). *Aboriginal Health Nursing and Aboriginal Health: Charting Policy Direction for Nursing in Canada*.

Beaulieu, E., Bélanger, R., Poliakova, N., Lavoie, M., Maurice, P. & Ayotte, P. (2020). *Unintentional Injuries. Nunavik Inuit Health Survey 2017 Qanuilirpitaa ? How are we now?* Nunavik Regional Board of Health and Social Services (NRBHSS) & Institut national de santé publique du Québec (INSPQ). https://nrbhss.ca/sites/default/files/health_surveys/A11857_RESI_Unintentional_Injuries_EP7.pdf

Bélanger, R. E., Muckle, G., Courtemanche, Y. & Poliakova, N. (2020). *Substance Use. Nunavik Inuit Health Survey 2017 Qanuilirpitaa ? How are we now?* Nunavik Regional Board of Health and Social Services (NRBHSS) & Institut national de santé publique du Québec (INSPQ). http://www.nrbhss.ca/sites/default/files/health_surveys/A12332_RESI_Substance_Use_EP5.pdf

Browne, A. J., Varcoe, C., Lavoie, J., Smye, V., Wong, S. T., Krause, M., Tu, D., Godwin, O., Khan, K. & Fridkin, A. (2016). Enhancing health care equity with Indigenous populations : Evidence-based strategies from an ethnographic study. *BMC Health Services Research*, *16*(544). https://doi.org/10.1186/s12913-016-1707-9

Bureau d'information et d'études en santé des populations (BIESP), Institut national de santé publique du Québec (INSPQ). (2020). *Années potentielles de vie perdues | Santéscope*. INSPQ. https://www.inspq.qc.ca/santescope/syntheses/annees-potentielles-de-vie-perdues

Centre for Epidemiology and Evidence. (2015). *HealthStats NSW: Privacy issues and the reporting of small numbers* (Sydney: NSW Ministry of Health.). https://nla.gov.au/nla.obj-2880221856

Greenwood, M., Leeuw, S. & Lindsay, N. M. (2018). *Determinants of Indigenous Peoples' Health, Second Edition: Beyond the Social*. Canadian Scholars.

Hamel, D., Hamel, G. & Gagnon, S. (2020). *Methodological Report. Nunavik Inuit Health Survey 2017 Qanuilirpitaa ? How are we now?* Nunavik Regional Board of Health and Social Services (NRBHSS) & Institut national de santé publique du Québec (INSPQ). https://nrbhss.ca/sites/default/files/health_surveys/A11991_RESI_Rapport_methodologique_EP4.pdf

Institut national de santé publique du Québec (INSPQ). (2015a). *Liens entre la prévention des traumatismes non intentionnels et intentionnels (violence)*. https://www.inspq.qc.ca/sites/default/files/documents/securite/liens_prevention_traumatismes_non_intentionnels_et_intentionnels.pdf

Institut national de santé publique du Québec (INSPQ). (2015b). *Prévention des traumatismes non intentionnels*. https://www.inspq.qc.ca/securite-et-prevention-des-traumatismes/prevention-des-traumatismes-non-intentionnels

Institut national de santé publique du Québec. (2015c). *Taux d'hospitalisation au cours de la première année de vie selon le diagnostic principal*. INSPQ, Équipe du Portrait de santé du Québec et de ses régions 2006.

Inuit Tapiriit Kanatami (ITK). (2016). *National Inuit Suicide Prevention Strategy*. Inuit Tapiriit Kanatami (ITK).

Makivik Corporation. (2013). La société Makivik. *Makivik Corporation*. https://www.makivik.org/corporate/

Muckle, G., Bélanger, R. E., Lafrenaye-Dugas, A., Poliakova, N., Riva, M., Fletcher, C., Moisan, C., Godbout, N. & Fraser, S. (2021). *Interpersonal Violence and Community Safety. Nunavik Inuit Health Survey 2017 Qanuilirpitaa ? How are we now?* Nunavik Regional Board of Health and Social Services (NRBHSS) & Institut national de santé publique du Québec (INSPQ). https://nrbhss.ca/sites/default/files/health_surveys/Interpersonal_Violence_and_Community_Safety_report_en.pdf

Muckle, G., Fraser, S., Desrochers-Couture, M., Pepin, C., Bélanger, R. E., Fletcher, C., Poliakova, N. & Moisan, C. (2020). *Mental Health and Wellness. Nunavik Inuit Health Survey 2017 Qanuilirpitaa ? How are we now?* Nunavik Regional Board of Health and Social Services (NRBHSS) & Institut national de santé publique du Québec (INSPQ). http://www.nrbhss.ca/sites/default/files/health_surveys/A12528_RESI_Mental_Health_and_Wellness_EP5.pdf

Institut National de santé publique du Québec (INSPQ). (2021a). *Profil de santé du Nunavik 2018 : Contexte sociodémographique.* [Unpublished document]. Nunavik Regional Board of Health and Social Services (NRBHSS) & Institut national de santé publique du Québec (INSPQ).

Institut National de santé publique du Québec (INSPQ). (2021b). *Profil de santé du Nunavik 2018 : La santé des mères et des enfants*. [Unpublished document]. Nunavik Regional Board of Health and Social Services (NRBHSS) & Institut national de santé publique du Québec (INSPQ).

Robert, P., Ayotte, P., Lévesque, B., Bourbeau, J., Khan, F. A., Boulet, L.-P. & Proulx, J.-F. (2020). *Respiratory Health. Nunavik Inuit Health Survey 2017 Qanuilirpitaa ? How are we now?* Nunavik Regional Board of Health and Social Services (NRBHSS) & Institut national de santé publique du Québec (INSPQ). https://nrbhss.ca/sites/default/files/health_surveys/A12174_RESI_Respiratory_Health_EP5.pdf

Nunavik Regional Board of Health and Social Services (NRBHSS) in collaboration with the Institut national de santé publique du Québec (INSPQ). (2014). *Portrait de santé du Nunavik en 2015 : Les enjeux chez les jeunes, les adultes et les personnes âgées.* (p. 90 pages et annexes.). Government of Québec.

Nunavik Regional Board of Health and Social Services (NRBHSS) in collaboration with the Institut national de santé publique du Québec (INSPQ). (2015). *Portrait de santé du Nunavik 2014—Les jeunes enfants et leur famille* (90 pages). Government of Québec.

NRBHSS. (2021). *Nunavik Regional Clinical Plan | Nunavik Regional Board of Health and Social Services*. https://nrbhss.ca/en/nunavik-regional-clinical-plan

Statistics Canada. (2010). *Causes of Death: Definitions*. https://www150.statcan.gc.ca/n1/pub/84-208-x/2010001/def-eng.htm

Statistics Canada, S. C. (2019). *Health Status*. https://www150.statcan.gc.ca/n1/pub/82-221-x/2017003/hs-es-eng.htm