



ᑭᓄᓐᓂᓐ ᑭᓄᓐᓂᓐ ᑭᓄᓐᓂᓐ  
ᑭᓄᓐᓂᓐ ᑭᓄᓐᓂᓐ  
NUNAVIK 2017

# UNINTENTIONAL INJURIES

## QANUILIRPITAA? 2017

Nunavik Inuit Health Survey



ᑭᓄᓐᓂᓐ ᑭᓄᓐᓂᓐ ᑭᓄᓐᓂᓐ  
RÉGIE RÉGIONALE DE LA NUNAVIK REGIONAL  
SANTÉ ET DES SERVICES BOARD OF HEALTH  
SOCIAUX DU NUNAVIK AND SOCIAL SERVICES

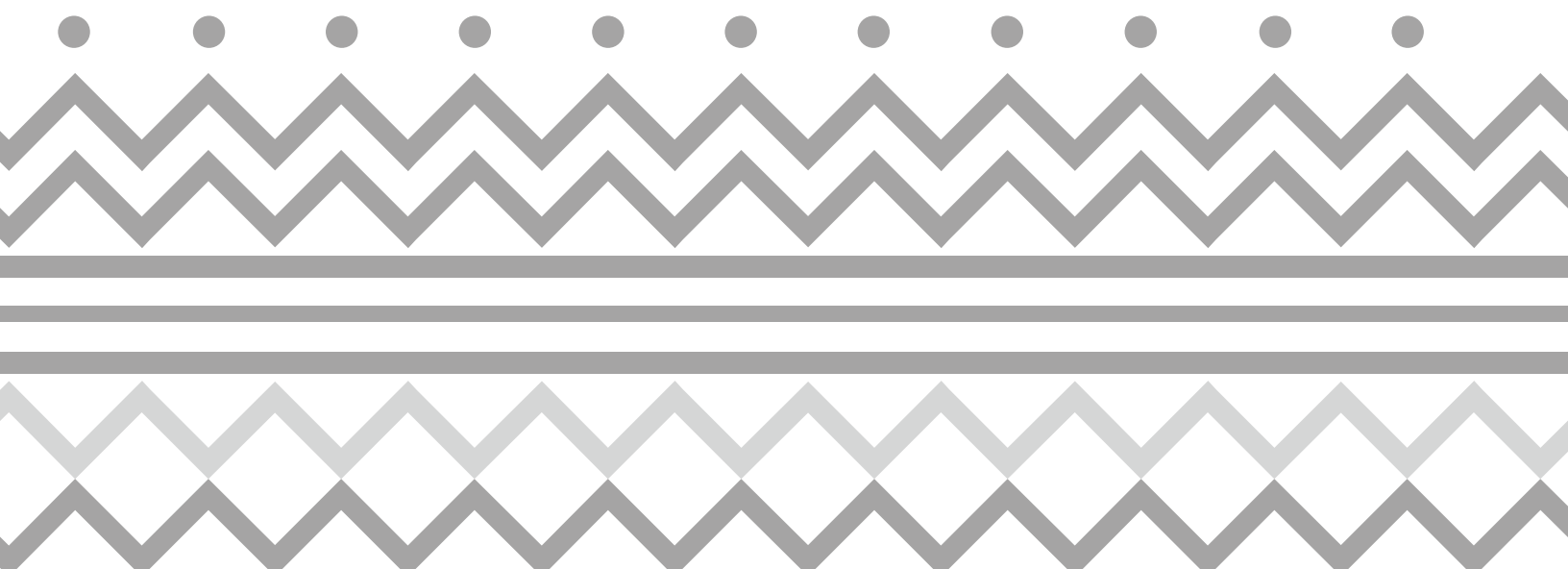


ᑲᓄᓐᓂᓐᓂᓐ ᑲᓄᓐᓂᓐᓂᓐ  
ᑲᓄᓐᓂᓐᓂᓐ  
NUNAVIK 2017

# UNINTENTIONAL INJURIES

## QANUILIRPITAA? 2017

Nunavik Inuit Health Survey



ᓄᓄᓐᓂᓐᓂᓐ ᓄᓄᓐᓂᓐᓂᓐᓂᓐᓂᓐᓂᓐ  
RÉGIE RÉGIONALE DE LA NUNAVIK REGIONAL  
SANTÉ ET DES SERVICES BOARD OF HEALTH  
SOCIAUX DU NUNAVIK AND SOCIAL SERVICES

Institut national  
de santé publique

Québec



**Nunavik Regional Board of Health and Social Services**

P.O Box 900

Kuujuaq, (Quebec) J0M 1C0

Phone number: 819-964-2222

Toll-free: 1 844-964-2244

Email: [info@sante-services-sociaux.ca](mailto:info@sante-services-sociaux.ca)

Website: [nrbhss.ca/en/health-surveys](http://nrbhss.ca/en/health-surveys)

Legal deposit - November 2020

Bibliothèque et Archives nationales du Québec

ISBN: 978-2-924662-17-5 (PDF)

## AUTHORS

### **Emilie Beaulieu, MD, MPH, FRCPC (Co-Leading Author)**

Department of Pediatrics, Faculty of Medicine,  
Université Laval  
Reproduction, Mother and Youth Health Research Unit,  
Centre de recherche du CHU de Québec – Université Laval  
Population Health and Optimal Health Practices Research  
Unit, Centre de recherche du CHU de Québec –  
Université Laval

### **Richard E. Bélanger, MD, FRCPC (Co-Leading Author)**

Co-Principal investigator – youth cohort  
Department of Pediatrics  
Faculty of Medicine, Université Laval  
Population Health and Optimal Health Practices Research  
Unit, Centre de recherche du CHU de Québec –  
Université Laval

### **Natalia Poliakova, PhD Planning, Programming and Research Officer**

Population Health and Optimal Health Practices Research  
Unit, Centre de recherche du CHU de Québec –  
Université Laval

### **Michel Lavoie, MD, M.Sc., Medical specialist in public health and preventive medicine**

Direction du développement des individus et des communautés  
Institut national de santé publique du Québec

### **Pierre Maurice, MD, M.B.A., FRCPC, Medical specialist in public health and preventive medicine**

Direction du développement des individus et des communautés  
Institut national de santé publique du Québec

### **Pierre Ayotte, PhD, Professor**

Department of Social and Preventive Medicine,  
Faculty of Medicine, Université Laval  
Population Health and Optimal Health Practices Research  
Unit, Centre de recherche du CHU de Québec –  
Université Laval  
Institut national de santé publique du Québec

## EXECUTIVE DIRECTOR

### **Danielle St-Laurent, Director**

Bureau d'information et d'études en santé des populations  
Institut national de santé publique du Québec

## SCIENTIFIC DIRECTORS

### **Pierre Ayotte, Professor**

Department of Social and Preventive Medicine,  
Faculty of Medicine, Université Laval  
Population Health and Optimal Health Practices Research  
Unit, Centre de recherche du CHU de Québec –  
Université Laval  
Institut national de santé publique du Québec

### **Françoise Bouchard, MD, MPH, FRCPC, Director of Public Health**

Nunavik Regional Board of Health and Social Services

## STATISTICAL ANALYSIS

### **Marc-André Dubé, Scientific Advisor**

Bureau d'information et d'études en santé des populations  
Institut national de santé publique du Québec

## SCIENTIFIC EDITING

### **Marie-Josée Gauthier, Planning, Programming and Research Officer**

Public Health Department  
Nunavik Regional Board of Health and Social Services

### **Susie Gagnon, Scientific Advisor**

Bureau d'information et d'études en santé des populations  
Institut national de santé publique du Québec

## WITH THE COLLABORATION OF

### **Lucy Grey, Inuit Research Advisor**

Kativik Regional Government

## LINGUISTIC REVISION

Alison McGain

## VISUAL CREATION

Alphatek

## COMMUNICATION

Nunavik Regional Board of Health and Social Services

## SUGGESTED CITATION

Beaulieu, E., Bélanger, R., Poliakova, N., Lavoie, M., Maurice, P.,  
Ayotte, P. (2020). *Unintentional Injuries*. Nunavik Inuit Health  
Survey 2017 Qanuiliirpita? How are we now? Quebec: Nunavik  
Regional Board of Health and Social Services (NRBHSS) &  
Institut national de santé publique du Québec (INSPQ)

# QANUILIRPITAA? 2017 HEALTH SURVEY

# ACKNOWLEDGMENTS

On behalf of the Steering Committee, I would like to express my gratitude to all Nunavimmiut who participated in the *Qanuilirpitaa?* 2017 Health Survey.

This important health survey was made possible thanks to the long-lasting partnership between the Nunavik Regional Board of Health and Social Services, the *Institut national de santé publique du Québec* and researchers from the Centre de recherche du CHU de Québec – Université Laval, McGill University and Trent University.

The valuable contribution of Inuit research advisors, leaders from each community, as well as representatives from the Avataq Cultural Institute, the Ungava Tulattavik Health Centre, the Inuulitsivik Health Centre, the Kativik Regional Government, Kativik Ilisarniliriniq, Makivik Corporation, the northern villages and the Qarjuit Youth Council is gratefully acknowledged. The Steering Committee and the Data Management Committee of *Qanuilirpitaa?* 2017 guided and enriched this work throughout the different phases, from planning to data interpretation and contextualization.

We want to highlight the invaluable contribution of Pierre Ayotte and Françoise Bouchard, the scientific directors, and Danielle St-Laurent, the project's executive director. We are also indebted to Geneviève Hamel, Suzanne Bruneau, Suzanne Côté and Nathalie Ouellet who coordinated the planning and realization of the survey.

We are sincerely thankful to the Inuit interviewers who carried out exceptional work in often challenging circumstances.

We are also grateful to all of the professionals, technicians, students, ground team and clerical staff, as well as the crew of the Canadian Coast Guard Ship *Amundsen*.

Finally, this survey could not have been undertaken without the financial support of the Nunavik Regional Board of Health and Social Services, the Kativik Regional Government, Makivik Corporation, Kativik Ilisarniliriniq, the *ministère de la Santé et des Services sociaux du Québec*, ArcticNet, the Amundsen Science Ship Fund and the Northern Contaminants Program.

Numerous people have contributed at different stages of the survey process; many of them are listed below, and there are many more.

Minnie Grey

Chairperson, *Qanuilirpitaa?* Steering Committee  
Executive Director, NRBHSS

*In memory of Audrey Flemming and Linda Shipaluk.*

**PRINCIPAL INVESTIGATORS  
AND INUIT ADVISORS\***

**Adult component**

Pierre Ayotte  
Chris Furgal  
Mélanie Lemire  
Benoît Lévesque  
Michel Lucas  
Mary Pilurttut

**Youth component**

Richard Bélanger  
Gina Muckle  
Louisa Yeates

**Community component**

Nancy Etok  
Christopher Fletcher  
Kitty Gordon  
Betsy Palliser  
Mylène Riva

**Oral health**

Aimée Dawson  
Chantal Galarneau

**Men's Health**

Gilles Tremblay

**STEERING COMMITTEE  
AND DATA MANAGEMENT  
COMMITTEE (DMC)**

**PARTICIPANTS**

Minnie Grey (Steering Committee chair)  
Marie Rochette (DMC co-chair)  
Robert Watt (DMC co-chair)  
Alicia Aragutak  
Ellen Avard  
Jean-Etienne Bégin  
Françoise Bouchard  
Suzanne Bruneau  
Marie-Noëlle Caron  
Maria Cengarle  
Yasmine Charara  
Suzanne Côté  
Serge Déry  
Aleashia Echaloock  
Mona Eepa Belleau  
Maggie Emudluk  
Barrie Ford  
Susie Gagnon  
Marie-Josée Gauthier  
Yoan Girard  
Lucy Grey  
Geneviève Hamel  
Olivia Ikey  
Suzy Kauki  
Elena Koneak Labranche  
Christine Leblanc  
Stéphanie Léveillé  
Eliana Manrique  
Murray McDonald  
Jennifer Munick  
Tunu Napartuk

Jeannie Nungak  
Josepi Padlayat  
Geneviève Pellerin  
Fabien Pernet  
Maata Putugu  
Hilda Snowball  
Danielle St-Laurent  
Jobie Tukkiapik  
Larry Watt  
Shirley White-Dupuis

**INTERVIEWERS/NURSES**

Linda Amidlak  
Thomas Annanak  
Lydia Audlaluk  
Jeannie Calvin  
Caroline Couture  
Louis-Frédéric Daigle  
Véronique Dion Roy  
Geneviève Dorval  
Véronique Doutreloux  
Philippe Dufresne  
Victoria E. Forest  
Audrey Flemming  
Jeannie Flemming  
Elisabeth Gagné  
Virginie Gargano  
Suzie Gordon  
Sarah Imak  
Léa Laflamme  
Pierre Lejeune  
Alexandre Léveillé  
Paul Marcoux  
Josée Michaud  
Laura McKeeman  
Claude Morency  
Caroline Moisan  
Julie Nastapoka  
Julie Picard  
Michel Poulin  
Linda Shipaluk  
Évelyne Thibault  
Mina Tukai  
Amelia Tukkiapik Whiteley

**COMMUNICATION  
AND TRANSLATION**

Minnie Amidlak  
Annie Baron  
Nicolas Baltazar  
Brigitte Chalifoux  
Caroline D'Astous  
Nina Gilbert  
Alasie Hickey  
Nathalie Labonté  
Irène Langis  
Josée Lévesque  
Robert Mackey  
Émilie Pelletier  
Eva Pilurttut  
Ida Saunders  
Jenny Simpraseuth  
Rhéal Séguin

**DENTISTS/RESPIRATORY  
THERAPISTS**

Élaine Audet  
Lucie Bélanger  
Hélène Fournier-Noël  
Marie-Rose Gagnon Beaumont  
Isabelle Gauthier  
Gabrielle Gingras  
Ariane H. Morin  
Cassiopée Paradis-Gagnon

**GROUND-STAFF**

Stéphane Anctil  
Julien Arsenault  
Marie Bernard  
Justine Blanco Lalande  
Christian Brunet  
Virginie Chadenet  
Catherine Godin  
Josianne Grenier  
Dominique Hamel  
Robert Ladouceur  
Trina Manac'h  
Laurence Millette  
Guillaume Proulx  
Sylvie Ricard  
Camille Tremblay-Fournier  
As well as all local research assistants  
and local logistics staff

**ADMINISTRATIVE SUPPORT  
AND INFORMATIC TECHNOLOGIES**

Vincent Gilbert  
Denis Granghon  
Eva Gunn  
Ginette Laflamme  
Liv Larsen  
Richard Leboeuf  
Sylvie Muller

**DATA PROCESSING, QUALITY  
CONTROL AND LAB WORK**

Véronique Boiteau  
Marc-André Dubé  
Marianne Dubé  
Denis Hamel  
Judith Labrecque  
Jacinthe Larochelle  
Caroline Moisan  
Nathalie Ouellet  
Louis Rochette  
Mélanie St-Onge  
Mélanie Tessier  
Hamado Zoungrana

**COMMUNITY COMPONENT/  
MOBILIZATION**

David Arsenault  
Marie Baron  
Imane Cheriet  
Marie-Hélène Dion-Gagnon  
Sarah Fraser  
Melody Lynch  
Marie-Claude Lyonnais  
Cindy Ruel

**AND MANY MORE!**

\* Each name is listed only once even though it may have been mentioned in more than one category.



# TABLE OF CONTENTS

LIST OF TABLES	v	
LIST OF FIGURES	v	
<b>1</b>	<b>BACKGROUND OF THE QANUILIRPITAA? 2017 HEALTH SURVEY</b>	<b>2</b>
	Target population	2
	Survey frame	2
	Data collection	3
	Participation	3
<b>2</b>	<b>INTRODUCTION</b>	<b>4</b>
<b>3</b>	<b>METHODOLOGICAL ASPECTS</b>	<b>5</b>
<b>4</b>	<b>RESULTS</b>	<b>9</b>
	4.1 Injury prevalence	9
	4.2 Causes of injury	10
	4.3 Injury related risk factors	11
	› 4.3.1 Driving under the influence of alcohol or drugs	11
	› 4.3.2 Unlocked Firearms	12
	4.4 Seeking medical care after an injury	12

<b>5</b>	<b>DISCUSSION</b>	<b>13</b>
	<b>REFERENCES</b>	<b>15</b>
	<b>APPENDIX A - QUESTIONS ON UNINTENTIONAL INJURY</b>	<b>17</b>
	<b>APPENDIX B - SUPPLEMENTARY RESULTS</b>	<b>20</b>



# LIST OF TABLES

**Table 1** Sociocultural Indicators  
P. 7

**Table A** Prevalence of injuries in the past 12 months serious enough to limit usual activities by sociodemographic indicator, population aged 16 years and over, Nunavik, 2017

**Table B** Prevalence of injuries in the past 12 months serious enough to limit usual activities and related risk factors by sociocultural indicator, population aged 16 years and over, Nunavik, 2017

**Table C** Proportion of Nunavimmiut driving under the influence and keeping unlocked firearms by sociodemographic indicator (%), population aged 16 years and over, Nunavik, 2017

**Table D** Proportion of Nunavimmiut who sought medical care after having had an injury that resulted in limitations of their usual activities in the past 12 months by sociodemographic indicator (%), population having had an injury limiting their usual activities, 16 years and over, Nunavik, 2017

# LIST OF FIGURES

**Figure 1** List and classification of causes of unintentional injury  
P. 5

**Figure 2** Prevalence of injury resulting in limitations of usual activities in the past 12 months by sex and age group (%), population aged 16 years and over, Nunavik, 2017

**Figure 3** Causes of unintentional injury (%), population aged 16 years and over, Nunavik, 2017

**Figure 4** Proportion of drivers who reported driving under the influence of drugs or alcohol in the past 12 months by sex and age group (%), population aged 16 years and over, Nunavik, 2017

# 1 BACKGROUND OF THE QANUILIRPITAA? 2017 HEALTH SURVEY

The *Qanuilirpitaa?* 2017 Health Survey is a major population health survey conducted in Nunavik that involved the collection, analysis and dissemination of information on the health status of Nunavimmiut. The last health survey conducted prior to it in Nunavik dated from 2004. Since then, no other surveys providing updated information on the health of this population had been carried out. Thus, in February 2014, the Board of Directors of the Nunavik Regional Board of Health and Social Services (NRBHSS) unanimously adopted a resolution to conduct a new health survey in all 14 Nunavik communities, in support of the Strategic Regional Plan. The general objective of the 2017 health survey was to provide an up-to-date portrait of the health status of Nunavimmiut. It was also aimed at assessing trends and following up on the health and health determinants of adult participants since 2004, as well as evaluating the health status of Nunavik youth. This health survey has strived to move beyond traditional survey approaches so as to nurture the research capabilities and skills of Inuit and support the development and empowerment of communities.

*Qanuilirpitaa?* 2017 included four different components: 1) an adult component to document the mental and physical health status of adults in 2017 and to follow up on the adult cohort of 2004; 2) a youth component to establish a new cohort of Nunavimmiut aged 16 to 30 years old and to document their mental and physical health status; 3) a community component to establish the health profiles and assets of communities in a participatory research approach; and 4) a community mobilization project aimed at mobilizing communities and fostering their development.

This health survey relied on a high degree of partnership within Nunavik (Nunavik Regional Board of Health and Social Services (NRBHSS), Makivik Corporation, Kativik Regional Government (KRG), Kativik Ilisarniliriniq (KI), Avataq Cultural Institute, Qarjuit Youth Council, Inuulitsivik Health Centre, Ungava Tulattavik Health Centre), as well as between Nunavik, the Institut national de santé publique du Québec (INSPQ) and academic researchers from three

Canadian universities: Université Laval, McGill University and Trent University. This approach followed the OCAP principles of Ownership, Control, Access and Possession (First Nations Center, 2007).<sup>1</sup> It also emphasized the following values and principles: empowerment and self-determination, respect, value, relevance and usefulness, trust, transparency, engagement, scientific rigour and a realistic approach.

## TARGET POPULATION

The survey's target population was all permanent Nunavik residents aged 16 years and over. Persons living full time in public institutions were not included in the survey. The most up-to-date beneficiaries register of all Inuit living in Nunavik, obtained from the Makivik Corporation in spring 2017, was used to construct the main survey frame. According to this register, the population of Nunavik was 12 488 inhabitants spread out in 14 communities. The register allowed respondents to be selected on the basis of age, sex and coast of residence (Hudson coast and Ungava coast).

## SURVEY FRAME

The survey used a stratified proportional model to select respondents. Stratification was conducted based on communities and age groups, given that one of the main objectives of the survey was to provide estimates for two subpopulations aged, respectively, 16 to 30 years and 31 years and over. In order to obtain precise estimates, the targeted sample size was 1 000 respondents in each age group. Assuming a 50% response rate, nearly 4 000 people were required to obtain the necessary sample size. From this pool, the number of individuals recruited from each community was proportionate to population size and took into account the number of days

1. OCAP® is a registered trademark of the First Nations Information Governance Centre (FNIGC).

that the survey team would remain in each community – a situation that imposed constraints on the number of participants that could be seen. Within each stratum, participants were randomly selected from the beneficiaries register. However, the individuals from the 2004 cohort, all 31 years old and over (representing approximately 700 individuals), were automatically included in the initial sample.

## DATA COLLECTION

Data were collected from August 19, 2017 to October 5, 2017 in the 14 villages. The villages were reached by the *Amundsen*, a Canadian Coast Guard Icebreaker, and participants were invited on board the ship for data collection purposes.

Two recruitment teams travelled from one community to another before the ship's arrival. An Inuk assistant in each community helped: identify, contact and transport (if necessary) each participant; inform participants about the sampling and study procedures; obtain informed consent from participants (video) and fill in the identification sheet and sociodemographic questionnaire.

Data collection procedures for the survey included questionnaires, as well as clinical measurements. The survey duration was about four hours for each wave of participants, including their transportation to and from the ship. Unfortunately, this time frame was sometimes insufficient to complete the data collection process. This survey received ethical approval by the Comité d'éthique de la recherche du Centre Hospitalier Universitaire de Québec - Université Laval.

Aboard the ship, the survey questionnaires were administered by interviewers, many of whom were Inuit. Face-to-face interviews were conducted using a computer-assisted interviewing tool. If there were problems with the laptop connections, paper-form questionnaires were filled out. The questionnaires were administered in Inuktitut, English or French, according to the preference of the participants. Interviewers received training in administering the questionnaires prior to the start of the survey. The questionnaires were divided into five blocks: psychosocial interview (blocks 1 and 3), physical health and food security interview (block 2), food frequency questionnaire (block 4), and sociodemographic interview (block 5).

The survey also included a clinical component, with tests to document aspects of physical health, sampling of biological specimens (such as blood, oropharyngeal swabs, urine, stool, and vaginal swabs), spirometry, and an oral clinical exam. These sessions were supervised by a team comprised of nurses, respiratory therapists, dentists, dental hygienists and assistants, and laboratory technicians.

## PARTICIPATION

There were a total of 1 326 participants, including 574 Nunavimmiut aged 16 to 30 years old and 752 Nunavimmiut aged 31 years and over, for total response rates of 30.7% and 41.5%, respectively. The participants' distribution between the two coasts (Ungava and Hudson) was similar. The distribution of men and women was unequal, with twice as many women (873) than men (453) participating in the survey. If the results obtained from this sample are to be inferred to the target population, survey weights must be used.

Overall, as compared to the 2004 survey, the response rate (i.e., the rate of participants over the total number of individuals on the sampling list) was lower than expected, especially among young people. This includes the refusal rate and especially a low contact rate. Several reasons might explain the low response rate, including the short time period available to contact individuals prior to the ship's arrival in the community and non-contact due to people being outside of the community or on the land. Nevertheless, among the individuals that were contacted ( $n = 1\ 661$ ), the participation rate was satisfactory with an internal participation rate of 79.7%. More details on the collection, processing and analysis of the data are given in the Methodological Report (Hamel, Hamel, & Gagnon, 2020).

# 2 INTRODUCTION

Injury is defined as “physical damage to the body from a sudden exposure to energy at levels that exceed the normal human tolerance or as a result of the lack of one or more vital elements, such as oxygen” (“Parachute - Preventing Injuries. Saving Lives.,” n.d.). Unintentional injuries are the leading cause of death among Canadians aged 1 to 44 and result in more than 230 000 hospitalizations annually (Belton, Pike, Heatley, Cloutier, & Skinner, 2015; Statistics Canada, 2012). Seniors, men and Indigenous peoples face a particularly high risk of unintentional injury mortality (Public Health Agency of Canada, 2018). Between 1999 and 2003, Inuit communities of Canada experienced death rates and potential years of life lost due to unintentional injuries more than four times that of Canada as a whole. Unintentional injury mortality rates were even higher in Nunavik, with 145.9 deaths per 100 000, compared to 19.8 deaths per 100 000 for Canada as a whole (Inuit Tapiriit Kanatami, 2010). In 2004, 3.8% of Nunavimmiut reported injuries that limited their regular activities, with the proportion being higher among the 15 to 29 age group (Légaré & Rochette, 2004).

However, these results are probably underestimates given the considerable difference with results from other reports (Statistics Canada, 2005) as well as certain methodological limitations, namely, the fact that injuries were reported by one member of the household, instead of by the survey participants directly. In addition to the high number of deaths resulting from injuries, survivors are often left with devastating acute and long-term consequences, which significantly impact their health and life satisfaction (Segui-Gomez & MacKenzie, 2003), and place a considerable social and economic burden on communities.

Known determinants of injury include socioeconomic status, education, work status and geographic location (remote vs. urban areas) (Möller, Falster, Ivers, & Jorm, 2015), with the legacy of colonialism and systemic discrimination being particularly important to consider in Inuit communities (Atlantic Collaborative on Injury Prevention (ACIP), 2011; “Indigenous Resilience Connectedness and reunification,” n.d.). Cultural continuity and social and family cohesion are important protective factors against distress among Inuit youth (Inuit Tapiriit Kanatami, 2016), and may impact unintentional injury risk

as well. Off-road vehicles are regularly used for daily transportation in Nunavik and therefore share public roads with cars, trucks, bicycles, pedestrians and dogs. In that context, the Kativik Regional Government, in collaboration with other regional organizations, launched an awareness campaign called “On the Right Path” in 2011. This Nunavik specific campaign was aimed at promoting the safe operation of snowmobiles and all-terrain vehicles, especially among youth (“On the right path Nunavik,” n.d.).

Additionally, driving under the influence of alcohol or drugs is a well-known risk factor for injuries, with the risk of fatal collisions increasing proportionately with drivers’ alcohol blood level (“Conduite avec les facultés affaiblies par l’alcool | INSPQ,” n.d.). In Nunavik, a study showed that impaired driving was highly associated with off-road vehicle injuries (Cardinal & Rivard, 2003), and in 2004 38% of motor vehicle drivers aged 15 and over reported having driven under the influence of a substance in the previous 12 months (Légaré & Rochette, 2004). The “On the Right Path” campaign, active from 2011 to 2015, also tackled the issue of impaired driving (“On the right path Nunavik,” n.d.).

Firearms also increase the risk of unintentional injury, especially among children and youth if they are kept unlocked. While firearm-related unintentional injuries were reported as prevalent in Indigenous communities of Canada between 1980-1984, the current situation of firearm-related unintentional injury, the prevalence of unlocked firearms and its association with injuries have yet to be documented in Nunavik (Chapdelaine, Samson, Dennis Kimberley, & Viau, 1991).

Given that most unintentional injuries are predictable and therefore preventable, up-to-date evidence providing a better understanding of the current determinants contributing to these events may guide community leaders and governments in the development of local strategies to decrease the burden of injury in Nunavik. This thematic report uses *Qanuillirpitaa?* 2017 data to document the distribution of injuries, impaired driving and unlocked firearms in Nunavik, according to sociodemographic and sociocultural factors.

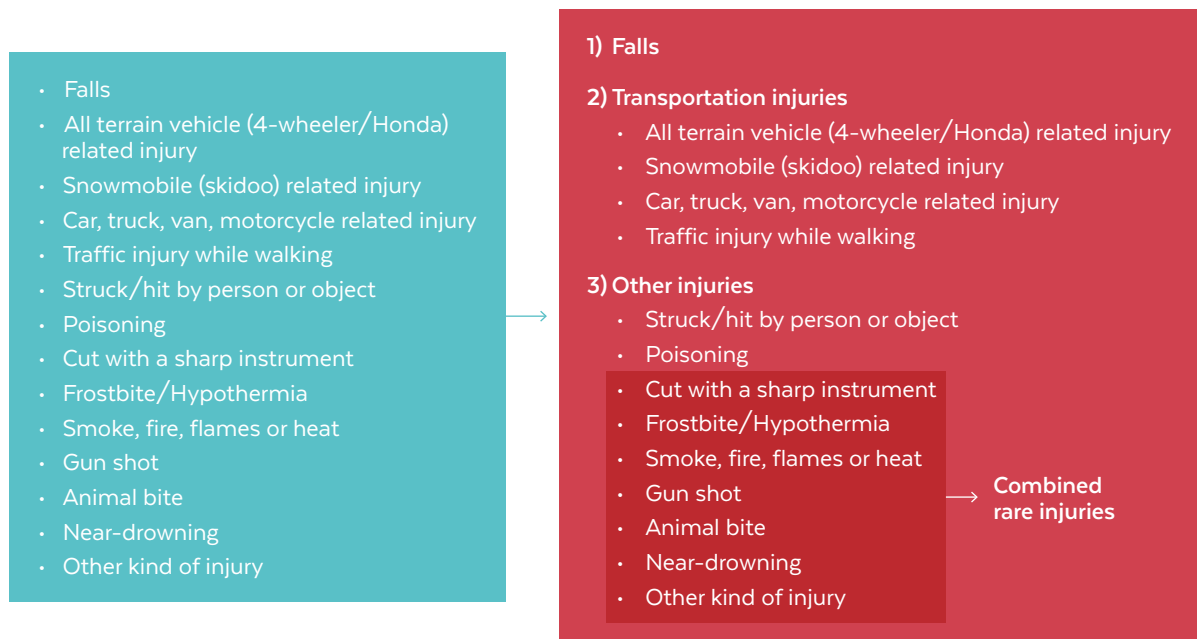
# 3 METHODOLOGICAL ASPECTS

Injury related questions were included in the physical health and food security interview of the *Qanuilirpitaa?* 2017 Health Survey. Questions discussed in this report are listed in Appendix A.

For the purpose of the survey, injury occurrence was defined as the number of people answering “yes” to having had any injuries that resulted in limitations of their usual activities in the previous 12 months. This was different from the assessment in the *Qanuipitaa?* 2004 Health Survey, where a recruited member of the household was asked about past-year injury occurrence for all household members. In 2017, Nunavimmiut were also asked to identify the cause of their most important injury in the last 12 months, out of a list of 14 causes of injury (Figure 1).

Injury causes were classified as “Falls”, “Transportation injuries” (including those relating to all-terrain vehicles, snowmobiles, cars, motorcycles and trucks and pedestrian injuries) and “Other injuries”, for which the frequencies observed were small. In the case of simple descriptive analyses, certain causes of injury that were classified under “Other injuries” were further grouped as “combined rare injuries” given their small frequencies (Figure 1). Additional questions concerned presence of firearms not stored in a locked container in or around the house (yes/no), driving under the influence of drugs or alcohol in the past 12 months (yes/no), and seeking medical attention after being injured (yes/no).

**Figure 1** List and classification of causes of unintentional injury



The analyses presented in this thematic report include cross-tabulations by sex (men/women), coastal region (Hudson/Ungava),<sup>2</sup> age group (16 to 30/31 to 54/55 years and over), marital status (single/married or common law/separated, divorced or widowed), education level (elementary school or less/secondary school not completed/secondary school or higher), employment (employed/not employed),<sup>3</sup> annual personal income (less than \$20 000/\$20 000 and over), and community size (large/small).<sup>4</sup>

To integrate cultural specificities, which may influence injury risk and related behaviours, associations with several sociocultural indicators were examined. Proportions on injury indicators, driving under the influence of substances and unlocked firearms in the environment were compared according to the levels of sociocultural indicators presented in Table 1. Additional information on sociocultural indicators as well as the related list of questions can be found in the thematic report “Sociocultural Determinants of Health and Well-Being”.

Comparison tests were performed with a global chi-square test for categorical variables to find out if any proportion was different across categories. In the presence of a significant result ( $p < 0.05$ ; coloured cells in tables), two-by-two comparisons were performed to further identify statistically significant differences between categories. These tests were based on the construction of a Wald statistic on the difference between the logit transformations of the estimated proportions. Only significant differences at the 5% threshold are reported in the text and all other tested factors found to be non-related are presented in the tables in Appendix B. In tables and figures, significant differences between categories are denoted using superscripts. All data analysis for this thematic report were done using SAS software, Version 9.4 (SAS Institute Inc., Cary, NC, USA).

**Accuracy of estimates.** The data used in this module come from a sample and are thus subject to a degree of error. Following the guidelines of the Institut de la statistique du Québec (ISQ), coefficients of variation (CV) were used to quantify the accuracy of estimates. Estimates with a CV between 15% and 25% are accompanied by a \* to indicate that they should be interpreted carefully, while estimates with a CV greater than 25% are presented with a \*\* and are shown for information purposes only.

**Limitations.** Only bivariate analyses were performed to describe associations with several selected sociodemographic and sociocultural indicators. These analyses do not take into consideration possible confounding or interaction effects. Consequently, these results should be interpreted with caution.

- 
2. Hudson coast: Kuujuarapik, Umiujaq, Inukjuak, Puvirnituaq, Akulivik, Ivujivik and Salluit; Ungava coast: Kangiqsujuaq, Quaqtaq, Kangirsuk, Aupaluk, Tasiujaq, Kangiqsualujuaq and Kuujuaq.
  3. Employed: Salaried or self-employed full-, part-time, occasional; Not employed: hunter support program, housework, retired or on pension, employment insurance, parental leave, income support, student, or other.
  4. Small communities: Kuujuarapik, Umiujaq, Akulivik, Ivujivik, Kangiqsujuaq, Quaqtaq, Kangirsuk, Aupaluk, Tasiujaq, Kangiqsualujuaq; Large communities: Kuujuaq, Salluit, Puvirnituaq and Inukjuak.

**Table 1** Sociocultural Indicators

<p><b>CULTURAL IDENTITY</b></p>	<p>Thirteen statements asking about the importance of Inuit values and identity (e.g., perceived connection among community members, adherence to cultural values) Likert scale: 1-Strongly agree to 5-Strongly disagree; Comparisons: high cultural identity (top 30 percentile) vs. others</p>
<p><b>FREQUENCY OF GOING ON THE LAND</b></p>	<p>“From the Spring until now, how often did you go on the land?” Likert scale : 1-Never, 2- Occasionally, 3-Often; Comparisons: Often vs. Occasionally or Never</p>
<p><b>ABILITY TO PRACTICE TRADITIONAL ACTIVITIES</b></p>	<p>4 questions. How satisfied are you with your...“ability to go out on the land, hunting, fishing and berry picking”, “ability to satisfy country food cravings”, “ability to communicate with others in Inuktitut”, “knowledge and skills of cultural and traditional activities, games, arts” Likert scale : 1-Very satisfied to 5-Very dissatisfied; Comparisons: Very satisfied vs. other answers</p>
<p><b>IMPORTANCE OF SPIRITUAL VALUES</b></p>	<p>“Do spiritual values play an important role in your life?” Yes/No answer</p>
<p><b>PARTICIPATION IN RELIGIOUS ACTIVITIES</b></p>	<p>“During the past 12 months, not counting events such as weddings or funerals, how often did you participate in religious activities or attend religious services or meetings?” Likert scale: 1-Never to 4-One or a few times a week; Comparisons: participation at least once a month vs. &lt; once a month</p>
<p><b>FOUR TYPES OF SOCIAL SUPPORT</b></p>	<p>6 questions. Frequency of four types of social support:  <ul style="list-style-type: none"> <li>&gt; positive interactions: “Have someone to have a good time with”</li> <li>&gt; emotional support: “Have someone to talk to if I feel troubled or need emotional support”, “Have someone to count on when I need advice”, “Have someone to listen to me when I need to talk”</li> <li>&gt; tangible support for transportation to health services: “Have someone to take me to the doctor or another health professional if needed”</li> <li>&gt; love and affection: “Have someone who shows me love and affection”</li> </ul>                     Likert scale: 1-All of the time to 5-Never; Comparisons: All or Most of the time (for the item or for all three items) vs. other answers</p>
<p><b>FAMILY COHESION</b></p>	<p>6 questions: 5 from the Brief Family Relationship Scale questionnaire + one adapted to Inuit culture.                      In my close family,...“there is a feeling of togetherness”, “we really help and support each other”, “we really get along well with each other”, “we spend a lot of time doing things together at home”, “we spend a lot of time doing things together on the land”, “I am proud to be a part of my family”                      Likert scale : 1-Very true to 3-Not true; Comparisons: high family cohesion (top 30 percentile) vs. other</p>
<p><b>COMMUNITY COHESION</b></p>	<p>4 questions on respondent’s perception of social cohesion in the community:                      “There is a feeling of togetherness or closeness”, “People help others”, “People can be trusted”, “I feel like I belong”                      Likert scale: 1-Strongly agree to 5-Strongly disagree; Comparisons: high community cohesion (top 30 percentile) vs. other</p>

<p><b>INVOLVEMENT IN COMMUNITY ACTIVITIES</b></p>	<p>Frequency of involvement in two types of community activities:                      “Participation in cultural, community or sports events such as festivals, dances, feasts or Inuit games”, “Volunteered for a group, an organization or community event such as a rescue team, church group, feasts, spring clean-up”                      Likert scale: 1-Always to 5- Never; Comparisons: Always or Often vs. Sometimes, Rarely or Never</p>
<p><b>PARTICIPATION IN HEALING AND WELLNESS ACTIVITIES</b></p>	<p>“In the past 12 months, have you taken part in any activities to promote your own healing or wellness?”                      Yes/No answer</p>
<p><b>POSITIVE PERCEPTION OF HEALTH SERVICES</b></p>	<p>5 questions: “I have confidence in health services”, “I have confidence in social services”, “I am aware of the resources to help solve my health problems”, “Health services are sensitive to Inuit realities”, “Social services are sensitive to Inuit realities”                      Likert scale: 1-Strongly agree to 5-Strongly disagree; Comparisons: positive perception of health services (top 30 percentile) vs. other</p>
<p><b>SEDENTARY TIME</b></p>	<p>“During the last 7 days, how much time did you spend sitting on a week day?”;                      Comparisons: &gt; 7 hours vs. ≤ 7 hours</p>



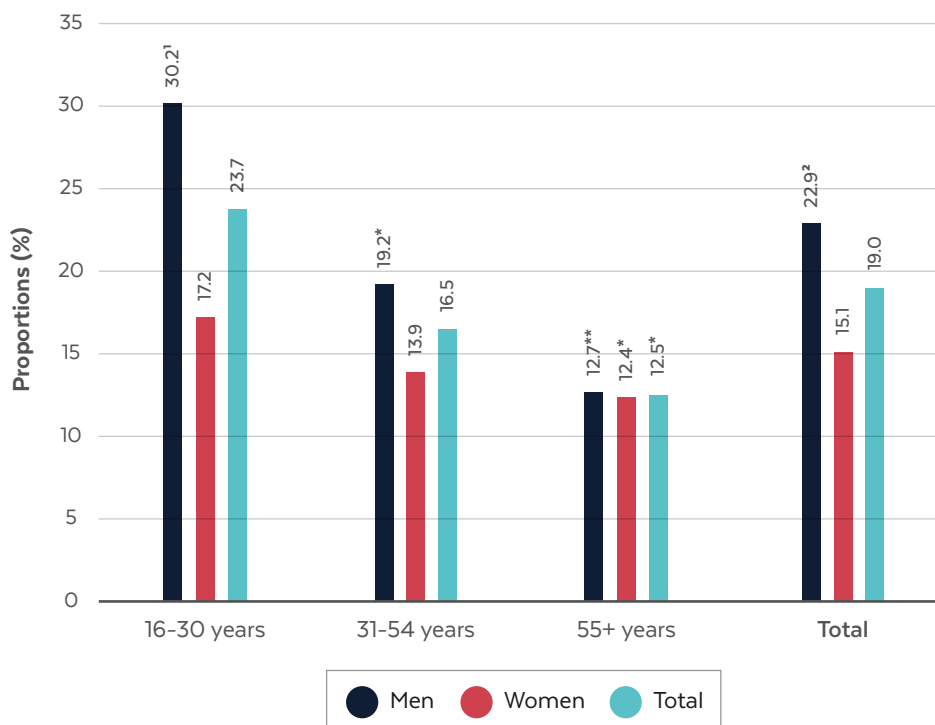
# 4 RESULTS

This section presents the proportions of Nunavimmiut who reported unintentional injuries, unlocked firearms and impaired driving for the population as a whole, according to levels of sociodemographic and selected sociocultural factors.

## 4.1 INJURY PREVALENCE

One out of five Nunavimmiut (19%) reported having had an injury that resulted in limitations of their usual activities in the 12 months prior to the survey, with proportions being significantly higher for men than women (23% vs. 15%). A greater proportion of men aged 16 to 30 declared unintentional injuries (30%) compared to those in age groups 31 to 54 and 55 and over (19% and 13%<sup>\*\*</sup>, respectively) (Figure 2).

**Figure 2** Prevalence of injury resulting in limitations of usual activities in the past 12 months by sex and age group (%), population aged 16 years and over, Nunavik, 2017



1. Statistically significant difference observed using the 5% threshold compared to the other age groups.

2. Statistically significant difference observed using the 5% threshold compared to women.

<sup>\*</sup> The coefficient of variation is greater than 15% and lower than or equal to 25%. The proportion should be interpreted carefully.

<sup>\*\*</sup> The coefficient of variation is greater than 25%. The proportion is shown for information only.

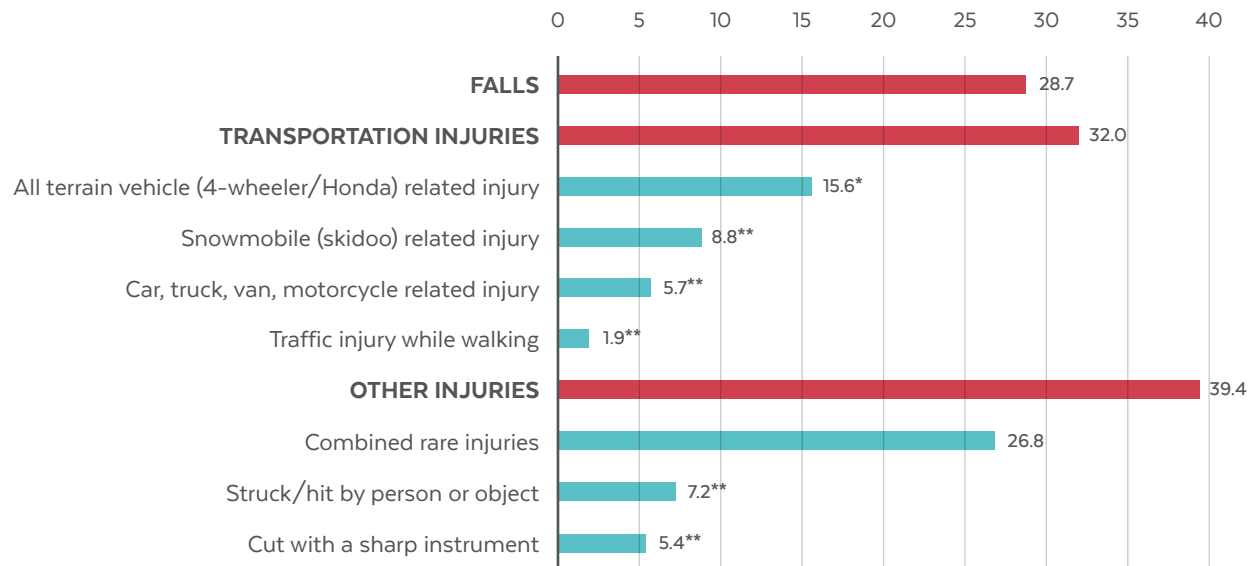
Cross-tabulations between injury prevalence and sociodemographic indicators are presented in Table A (Appendix B). The prevalence of unintentional injuries reported in this survey cannot be compared with that of *Qanuillipitaa? 2004* given the methodological differences mentioned in the methodological aspects section.

Injuries were significantly more prevalent among Nunavimmiut who reported going on the land often compared to occasionally or never (24% vs. 16%) and being very satisfied with their knowledge and skills relating to cultural and traditional activities compared to “Other” (24% vs. 17%). People who reported that spiritual values played an important role in their life experienced a lower proportion of injuries than those who did not report this (18% vs. 25%). Other sociocultural indicators, including cultural identity, family cohesion, and participation in healing and wellness activities were not significantly associated with injury prevalence (Appendix B, Table B).

## 4.2 CAUSES OF INJURY

The most frequently mentioned single causes of injury resulting in limitations were falls (29%), followed by all-terrain vehicle related injuries (16\*%), and snowmobile related injuries (9\*\*%) (Figure 3). Although combined rare injuries (defined in the methodological aspects section) represented very small proportions when taken separately, they accounted for 27% of unintentional injuries when grouped together.

**Figure 3** Causes of unintentional injury (%), population aged 16 years and over, Nunavik, 2017



\* The coefficient of variation is greater than 15% and lower than or equal to 25%. The proportion should be interpreted carefully.

\*\* The coefficient of variation is greater than 25%. The proportion is shown for information only.

Among Nunavimmiut who reported a fall or being struck by an object in the past 12 months with resulting limitations of their usual activities, 12% were injured while playing or doing sports. After grouping injury causes into three

categories (falls, transportation injuries and other injuries), sociodemographic indicators were not significantly associated with injury causes. All cross-tabulations are presented in Table A (Appendix B).

## 4.3 INJURY RELATED RISK FACTORS

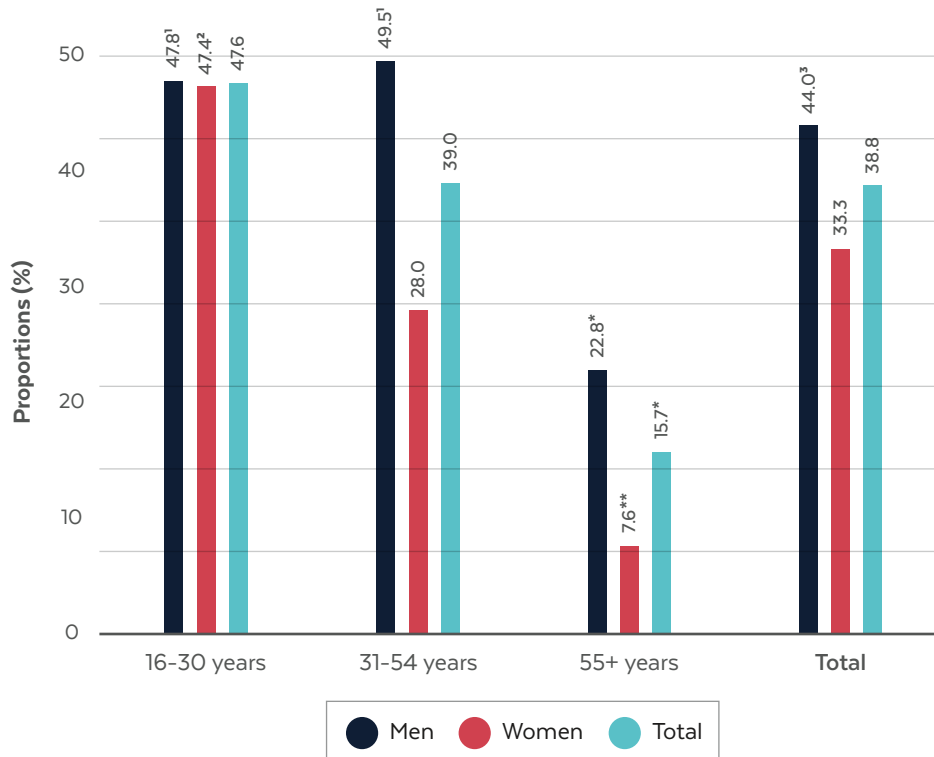
### 4.3.1 Driving under the influence of alcohol or drugs

Among people who drove a motor vehicle in the 12 months prior to the survey, 39% reported having driven under the influence of drugs or alcohol. Of those, 8% reported driving under the influence of substances often and 31% rarely. These findings are no different from those observed in 2004, when 39% of drivers reported driving under the influence of a substance. Men were more likely to drive under the influence of a substance compared to women (44% vs. 33%). Men aged 55 and older showed a significantly lower prevalence of driving under the influence compared to those in younger age groups (Figure 4).

Women aged 16 to 30 were more likely to report driving under the influence of substances compared to women in older age groups (Figure 4).

Drivers residing on the Ungava coast, compared to those residing on the Hudson coast (47% vs. 33%), and those who were employed, compared to those who were not employed (43% vs. 30%), were almost 1.5 times more likely to report driving under the influence of a substance. A higher level of education was associated with a higher prevalence of impaired driving (47% for secondary school completed or higher versus 39% for secondary school not completed versus 18% for having completed elementary school or less). All cross-tabulations between driving under the influence of a substance and sociodemographic indicators are presented in Appendix B, Table C.

**Figure 4** Proportion of drivers who reported driving under the influence of drugs or alcohol in the past 12 months by sex and age group (%), population aged 16 years and over, Nunavik, 2017



1. Statistically significant difference observed in men using the 5% threshold compared to the group aged 55 years and over.
2. Statistically significant difference observed in women using the 5% threshold compared to the other age groups (31-54 years and 55 years and over).
3. Statistically significant difference observed in men using the 5% threshold compared to women.

\* The coefficient of variation is greater than 15% and lower than or equal to 25%. The proportion should be interpreted carefully.

\*\* The coefficient of variation is greater than 25%. The proportion is shown for information only.

A lower prevalence of impaired driving was observed among Nunavimmiut who participated in religious activities at least once a month (30% vs. 45% for those who participated less frequently) and who reported that spiritual values played an important role in their life (37% vs. 46% for those who reported spiritual values playing a less important role; Appendix B, Table B). Similarly, a lower prevalence of impaired driving was noted among Nunavimmiut who declared being very satisfied with their knowledge and skills relating to cultural and traditional activities (32% vs. 42% for those less satisfied) and among those who said they had the ability to satisfy their country food cravings (34% vs. 44% for those less satisfied). Finally, a lower prevalence of impaired driving was observed among individuals who reported a higher level of family cohesion (32% vs. 42% for those reporting lower family cohesion), a higher level of community cohesion (32% vs. 43% for those reporting lower community cohesion), as well as among people who are physically active (35% vs. 45% for more sedentary individuals) and those having a positive perception of health services (32% vs. 41% for those having a less positive perception of health services; Appendix B, Table B).

People who reported that they often or rarely drive under the influence of a substance were more likely to have had a significant injury in the year prior to the survey than those who never drive under the influence of a substance (52% vs. 17%).

### 4.3.2 Unlocked Firearms

Twenty-five percent (25%) of the Nunavik population reported having an unlocked firearm inside or around their house. Men were more likely to report having an unlocked firearm inside or around their house than women (28% vs 21%, respectively). A greater proportion of Nunavimmiut who were employed reported such behaviour compared to those who were not employed (27% vs. 21%), (Appendix B, Table C).

## 4.4 SEEKING MEDICAL CARE AFTER AN INJURY

Four out of five Nunavimmiut (80%) who were significantly injured in the 12 months leading up to the survey reported having sought medical attention or treatment at a hospital or a nursing facility. Nunavimmiut aged 31 to 54 were more likely to seek medical care after being significantly injured than those aged 16 to 30 (90% vs. 74%), as well as Nunavimmiut with a yearly income of \$20 000 and over, compared to those with an income lower than \$20 000 (87% vs. 75%). No association was observed between any of the other sociodemographic indicators and the seeking of medical attention after being significantly injured (Appendix B, Table D).

# 5 DISCUSSION

One out of five Nunavimmiut (19%) reported having had an unintentional injury that resulted in limitations of their usual activities during the year prior to the survey. Although this estimate is considerably higher than that reported in 2004 (4%), the difference is likely due to an underestimation of injuries in 2004. The injury prevalence documented in the present report is similar to that observed in other Indigenous communities of Quebec; for example, 16% of First Nations respondents reported in 2015 having had an injury serious enough to limit their daily activities (Commission de la Santé et des Services Sociaux des Premières Nations du Québec et du Labrador, 2015). In 2014, 12.4% of the Quebec population aged 15 and older reported having had an injury that limited their usual activities over the previous year (Camirand, Traoré, & Baulne, 2016). As in the 1992 and 2004 surveys, men and youth continued to experience significantly more unintentional injuries than women and other age groups (Légaré & Rochette, 2004). These trends are also seen among other populations in Canada and worldwide (World Health Organization, 2014) and likely result from more risky behaviours and activities among youth and men, supported by social and gender constructs (Udry, 1998). At the same time, going out on the land often and hunting at least once a month were associated with a greater prevalence of injuries. However, there was no link between injury prevalence and any of the other sociocultural factors discussed in this report. Therefore, initiatives that address the risk of injuries during traditional activities are important to ensure Nunavimmiut's safety. Climate change and the resulting less predictable climate conditions on the land likely contribute to injuries during traditional activities. This finding should be investigated further to foster the development of appropriate preventive measures.

Falls were the single most common cause of unintentional injury reported by Nunavimmiut in 2017. In comparison, they were the fourth leading cause of injury declared in 2004 (Légaré & Rochette, 2004). This change over the years is likely the result of methodological differences. In recent reports, falls were also said to be the leading cause of injury among Quebec First Nations communities and the overall population of Quebec (Camirand & Legare, 2008; Commission de la Santé et des Services Sociaux des

Premières Nations du Québec et du Labrador, 2015). Falls are an important cause of injury among both children and seniors, which may explain why they are the leading cause of injury in Nunavik, where the population is young, and in the province of Quebec as a whole, where the population is aging (Duhaime, Caron, & Lévesque, 2015). All-terrain vehicle (ATV) and snowmobile related injuries are reported more often in Nunavik than in First Nations communities and the rest of the province (Camirand & Legare, 2008; Commission de la Santé et des Services Sociaux des Premières Nations du Québec et du Labrador, 2015). The unique geographic and cultural characteristics of Nunavik, which involve the frequent use of snowmobiles and ATVs to get out on the land and around communities, may contribute to these results. Climate change may also affect ice, roads and land conditions, increasing ATV and snowmobile driving hazards. The disparities observed in these injury events in Nunavik suggest the need for persistent efforts and new initiatives to effectively decrease the burden of ATV and snowmobile injuries in Nunavik communities ("Injury Prevention - Pauktuutit Inuit Women of Canada," n.d.).

Two out of five drivers (39%) reported having driven under the influence of alcohol or drugs in the 12 months leading up to the 2017 survey. The prevalence of impaired driving in Nunavik in 2017 was not significantly different from that noted in 1992 and 2004. In 2013, about one out of five Quebec drivers (18%) reported having driven after drinking two or more alcoholic drinks, whereas 2% of Quebec drivers reported having driven under the influence of drugs (Société de l'assurance automobile du Québec, 2017). In 2003, one out of five drivers in Cree communities of Quebec (20%) reported alcohol-related impaired driving (Légaré G., 2008). The overall Canadian impaired-driving rates declined progressively between 1995 and 2015. Men and youth continue to be more at risk for impaired driving in Nunavik, as well as in Canada as a whole (Perreault, 2015). Residing on the Ungava coast, having completed secondary school and being employed were risk factors for impaired driving in both *Qanuillirpitaat?* 2017 and *Qanuippitaa?* 2004. Previous research has clearly identified impaired driving as a risk factor for motor vehicle crashes and related injuries (Vasylichuk, 2019).

One out of four Nunavimmiut (25%) reported having an unlocked firearm inside or around the house. This behaviour was reported more frequently by men in general and by people who often go on the land. These results should be interpreted with caution given that the prevalence of Nunavimmiut who own a firearm, either locked or unlocked, is unknown. The absence of previous representative data on unlocked firearms makes it impossible to assess trends in safe firearm storage in recent years. Unlocked firearms are a well-known and preventable risk factor for accidental shootings among children and suicide among youth (McClurg, 2000). The Kativik Regional Police Force (KRPF) launched a Gun Safety Awareness Campaign in 2014, promoting safe handling and storing of firearms, and free trigger locks are available ("Gun Safety Awareness," 2017). The findings of this report highlight the need for continuous gun safety awareness activities to keep Nunavimmiut safe.

Several sociocultural factors, including spiritual values, family cohesion, knowledge of cultural activities, ability to satisfy country food cravings and being active, were associated with a lower prevalence of driving under the influence of alcohol or drugs. These findings speak to the importance of cultural continuity and social support in reducing risky behaviours that may contribute to preventable injuries. Previous research has established a strong relationship between cultural continuity and lower suicide rates among Inuit youth (Inuit Tapiriit Kanatami, 2016). Additional research investigating the impact of cultural and social connectedness on unintentional injury risk may inspire innovative prevention initiatives for tackling the burden of injuries in Nunavik from a different perspective.

In the 12 months prior to the 2017 survey, a majority of Nunavimmiut sought medical care after being significantly injured. Given that people with significant injuries requiring medical imagery, surgery or intensive care need to be flown out of communities to healthcare centres south of Nunavik, rapid consultation after an injury may avoid delays in receiving the best possible health services.

In conclusion, as in 2004, men and youth continue to face the highest injury risk, with impaired driving and unlocked firearms being a cause of concern. While on land activities involve higher injury risks and prevalence, cultural and social factors including family cohesion, spiritual values and knowledge of cultural activities are associated with a lower risk of injuries, impaired driving and unlocked firearms. Promoting social connectedness and culturally safe prevention measures targeting youth, and especially men, is a potential avenue for effectively decreasing significant injuries and associated risky behaviours in Nunavik.

# REFERENCES

- Atlantic Collaborative on Injury Prevention (ACIP).** (2011). *The Social Determinants of Injury*. Retrieved from [https://acip.ca/component/easyfolderlistingpro/?view=download&format=raw&data=eNp1UEFOwzAQ\\_lq1d0RMRyHNCdEDITgg4F5tk01i5NjR2oFclsTfseNGnDjZMsz2llCrFE74Bah87ZlgTqgTmjnm3lkFy-ezFFlvhZel8yBpSjDQiFU66ifOcS\\_IBuEw2HhMrotVkcjZlgh5GdbWNNCbbAqJmE7URzyeJNkl6--MWTVjiiPLaBy5GJTv1COTLaoU3RnLa\\_RIMl1VWqv7h\\_2zeuHJS1RvA6t\\_gvbufS79Ngh8iufflHbnFnyajHBYV9Qpn2KkZsj3gfg4sHfJlfxh-LOOT81673ubVvr5BY4Ncjw](https://acip.ca/component/easyfolderlistingpro/?view=download&format=raw&data=eNp1UEFOwzAQ_lq1d0RMRyHNCdEDITgg4F5tk01i5NjR2oFclsTfseNGnDjZMsz2llCrFE74Bah87ZlgTqgTmjnm3lkFy-ezFFlvhZel8yBpSjDQiFU66ifOcS_IBuEw2HhMrotVkcjZlgh5GdbWNNCbbAqJmE7URzyeJNkl6--MWTVjiiPLaBy5GJTv1COTLaoU3RnLa_RIMl1VWqv7h_2zeuHJS1RvA6t_gvbufS79Ngh8iufflHbnFnyajHBYV9Qpn2KkZsj3gfg4sHfJlfxh-LOOT81673ubVvr5BY4Ncjw)
- Belton, K., Pike, I., Heatley, J., Cloutier, E., & Skinner, R.** (2015). *The Cost of Injury in Canada*. Retrieved from <https://parachute.ca/en/professional-resource/cost-of-injury-report/>
- Camirand, Helene, & Legare, G.** (2008). *Enquete quebecois sur la sante de la population; Blessures et troubles musculosquelettiques*. Retrieved from [https://www.bdso.gouv.qc.ca/docs-ken/multimedia/PB01671FR\\_EnqueteQCSanteRapport2008HOOF00.pdf](https://www.bdso.gouv.qc.ca/docs-ken/multimedia/PB01671FR_EnqueteQCSanteRapport2008HOOF00.pdf)
- Camirand, H el ene, Traor e, I., & Baulne, J.** (2016). *L'enqu ete qu eb eois sur la sant e de la population 2014-2015: pour en savoir plus sur la sant e des Qu eb eois*. Quebec. Retrieved from <https://www.stat.gouv.qc.ca/statistiques/sante/etat-sante/sante-globale/sante-quebecois-2014-2015.pdf>
- Cardinal, L., & Rivard, J.** (2003). *Overview of Safety in the Use of Off-Road Vehicles in Nord-du-Qu ebec*. Retrieved from <http://collections.banq.qc.ca/ark:/52327/bs43223>
- Chapdelaine, A., Samson, E., Dennis Kimberley, M., & Viau, L.** (1991). Firearm-related injuries in Canada: issues for prevention. *Canadian Medical Association Journal*, 145(10), 1217-1223. Retrieved from <http://europemc.org/backend/ptpmcrender.fcgi?accid=PMC1335935&blobtype=pdf>
- Commission de la Sant e et des Services Sociaux des Premieres Nations du Qu ebec et du Labrador.** (2015). *Enquete regionale sur la sante des premieres nations du Qu ebec; traumatismes non intentionnels*. Retrieved from [http://www.cssspnql.com/docs/default-source/ers-phase-3/traumatismes\\_ers\\_phase-3\\_fra.pdf?sfvrsn=2](http://www.cssspnql.com/docs/default-source/ers-phase-3/traumatismes_ers_phase-3_fra.pdf?sfvrsn=2)
- Duhaime, G., Caron, A., & L evesque, S.** (2015). *Nunavik in Figures 2015-Full version*. Quebec, Canada. Retrieved from <http://www.chaireconditionautochtone.fss.ulaval.ca/documents/pdf/Nunavik-en-chiffres-vf-eng.pdf>
- First Nations Centre.** OCAP : Ownership, Control, Access and Possession. Sanctioned by the First Nations Information Governance Committee, Assembly of First Nations. Ottawa: National Aboriginal Health Organization. 2007.
- Gun Safety Awareness.** (2017). Retrieved August 6, 2019 from <http://www.krpf.ca/en/programs/gun-safety-awareness>
- Hamel, D., Hamel, G., Gagnon, S.** (2020). *Methodological Report. Nunavik Inuit Health Survey 2017 Qanuilirpitaa? How are we now?* Quebec: Nunavik Regional Board of Health and Social Services (NRBHSS) & Institut national de sant e publique du Qu ebec (INSPQ)
- Indigenous Resilience Connectedness and reunification.** (n.d.). Retrieved from <http://fns.bc.ca/wp-content/uploads/2017/01/Final-Report-of-Grand-Chief-Ed-John-re-Indig-Child-Welfare-in-BC-November-2016.pdf>
- Injury Prevention - Pauktuutit Inuit Women of Canada.** (n.d.). Retrieved August 6, 2019 from <https://www.pauktuutit.ca/health/injury-prevention/>
- Institut national de sant e publique du Qu ebec.** (n.d.). *Conduite avec les facult es affaiblies par l'alcool*. Retrieved November 4, 2019 from <https://www.inspq.qc.ca/securite-prevention-de-la-violence-et-des-traumatismes/prevention-des-traumatismes-non-intentionnels/dossiers/conduite-avec-les-facultes-affaiblies-par-l-alcool>
- Inuit Tapiriit Kanatami.** (2010). *Health Indicators of Inuit Nunangat within the Canadian Context*. Retrieved from <https://www.itk.ca/wp-content/uploads/2016/07/20100706Health-Indicators-Inuit-Nunangat-EN.pdf>
- Inuit Tapiriit Kanatami.** (2016). *National Inuit Suicide Prevention Strategy*. Retrieved from [www.itk.ca](http://www.itk.ca)
- L egar e G., R. Y.** (2008). *Cree Health Survey 2003, Canadian Community Health Survey, Cycle 2.1, Iiyijiu Aschii: Injuries and transportation safety*. Retrieved from [www.creepublichealth.org](http://www.creepublichealth.org)
- L egar e G., & Rochette, L.** (2004). *Nunavik Inuit Health Survey 2004 : Transportation Injuries and Safety*. Retrieved from <https://www.inspq.qc.ca/en/publications/662>

**Mcclurg, A. J.** (2000). The Public Health Case for the Safe Storage of Firearms: Adolescent Suicides Add One More Smoking Gun. *Hastings Law Journal*, 51(5), 3. Retrieved from [https://repository.uchastings.edu/hastings\\_law\\_journal/vol51/iss5/3](https://repository.uchastings.edu/hastings_law_journal/vol51/iss5/3)

**Möller, H., Falster, K., Ivers, R., & Jorm, L.** (2015). Inequalities in unintentional injuries between indigenous and non-indigenous children: a systematic review. *Injury Prevention*, 21(e1), e144–e152. <https://doi.org/10.1136/injuryprev-2013-041133>

**On the right path Nunavik.** (n.d.). Retrieved February 28, 2020 from <http://ontherightpathnunavik.ca/index.php/en/>

**Parachute - Preventing Injuries. Saving Lives.** (n.d.). Retrieved November 28, 2017 from <https://parachute.ca/en/>

**Perreault, S.** (2015). *Impaired driving in Canada*. Retrieved from <https://www150.statcan.gc.ca/n1/pub/85-002-x/2016001/article/14679-eng.htm>

**Public Health Agency of Canada.** (2018). *Key Health Inequalities in Canada: A National Portrait*. Ottawa. Retrieved from <https://www.canada.ca/en/public-health/services/publications/science-research-data/inequalities-unintentional-injury-mortality-infographic.html>

**Segui-Gomez, M., & MacKenzie, E. J.** (2003). Measuring the Public Health Impact of Injuries. *Epidemiologic Reviews*, 25(1), 3–19. <https://doi.org/10.1093/epirev/mxg007>

**Société de l'assurance automobile du Québec.** (2017). *L'alcool et les drogues au volant*. Retrieved from <https://saaq.gouv.qc.ca/fileadmin/documents/publications/espace-recherche/stats-alcool-drogues-profil-detaille.pdf>

**Statistics Canada.** (2005). *Health Reports*. Ottawa. Retrieved from <http://publications.gc.ca/Collection-R/Statcan/82-003-XIE/0020482-003-XIE.pdf>

**Statistics Canada.** (2012). Leading causes of deaths in Canada, 2012 mortality data, CANSIM Table 102-0561.

**Udry, J. R.** (1998). Why are males injured more than females? *Injury Prevention: Journal of the International Society for Child and Adolescent Injury Prevention*, 4(2), 94–95. <https://doi.org/10.1136/ip.4.2.94>

**Vasylchuk, P.** (2019). Impaired driving. Retrieved August 6, 2019 from <http://www.rcmp-grc.gc.ca/en/gazette/impaired-driving>

**World Health Organization.** (2014). *Injuries and Violence the Facts*. Retrieved from [www.who.int/healthinfo/global\\_burden\\_disease/projections/en/](http://www.who.int/healthinfo/global_burden_disease/projections/en/)









## APPENDIX B

# SUPPLEMENTARY RESULTS

**Table A** Prevalence of injuries in the past 12 months serious enough to limit usual activities by sociodemographic indicator, population aged 16 years and over, Nunavik, 2017

	All injuries	Transportation injuries	Falls	Other injuries
%	19.0	31.9	28.7	39.4
<b>Sex</b>				
Men	22.9 <sup>1</sup>	34.2*	28.1*	37.7
Women	15.1	28.4*	29.6	42.0
<b>Age group</b>				
16-30 years	23.7 <sup>2</sup>	36.3	29.1*	34.6
31-54 years	16.5	21.3*	27.8*	50.9
55 years and over	12.5*	43.2*	29.2**	27.6**
<b>Coast</b>				
Hudson	17.6	32.5*	28.4*	39.1
Ungava	20.8	31.3*	29.0	39.7
<b>Marital status</b>				
Single	21.9	33.5*	29.6*	36.8
Married or common law	17.4	28.4*	28.5*	43.0
Separated, divorced or widowed	11.3**	NP	NP	NP
<b>Education level</b>				
Elementary school or less	14.2**	45.7**	NP	NP
Secondary school not completed	20.8	34.3	33.0	32.7
Secondary school or higher	18.0	22.4**	22.7**	55.0
<b>Employment</b>				
Employed	17.9	27.7*	31.0*	41.4
Not employed	21.1	37.6*	25.5*	36.9
<b>Income</b>				
Less than \$20 000	19.0	38.6 <sup>1</sup>	28.4*	33.0
\$20 000 and over	20.7	23.5*	31.0*	45.5
<b>Community size</b>				
Large	19.4	32.6*	25.2*	42.2
Small	18.4	30.9*	33.8*	35.3*

Coloured cells indicate statistically significant comparisons.

1. Statistically significant difference observed using the 5% threshold compared to the other group.

2. Statistically significant difference observed using the 5% threshold compared to the other age groups.

\* The coefficient of variation is greater than 15% and lower than or equal to 25%. The proportion should be interpreted carefully.

\*\* The coefficient of variation is greater than 25%. The proportion is shown for information only.

NP: Data not presented due to small number of respondents.

**Table B** Prevalence of injuries in the past 12 months serious enough to limit usual activities and related risk factors by sociocultural indicator, population aged 16 years and over, Nunavik, 2017

	Injury prevalence	Driving under the influence	Unlocked firearm
%	19.0	38.8	24.5
<b>Cultural identity</b>			
High cultural identity (top 30 percentile)	17.5	35.2	23.4
Other	19.7	40.4	24.9
<b>Frequency of going on the land</b>			
Often	23.5 <sup>1</sup>	39.5	28.8 <sup>1</sup>
Occasionally or never	15.6	38.3	21.3
<b>Ability to practice traditional activities</b>			
<i>Ability to go out on the land, hunting, fishing and berry picking</i>			
Very satisfied	20.4	38.2	27.1
Other	17.7	39.4	22.1
<i>Ability to satisfy country food cravings</i>			
Very satisfied	20.3	33.7 <sup>1</sup>	24.2
Other	17.5	44.0	24.9
<i>Ability to communicate with others in Inuktitut</i>			
Very satisfied	16.9	38.6	25.6
Other	21.3	38.9	23.5
<b>Knowledge and skills relating to cultural and traditional activities</b>			
Very satisfied	23.6 <sup>1</sup>	31.5 <sup>1</sup>	28.5
Other	17.1	41.7	23.2
<b>Importance of spiritual values</b>			
Yes	17.6 <sup>1</sup>	37.2 <sup>1</sup>	23.6
No	24.8	46.0	27.6
<b>Participation in religious activities</b>			
At least once a month	16.3	30.0 <sup>1</sup>	24.4
Less than once a month	20.7	45.0	24.7
<b>Four types of social support</b>			
<i>Positive interactions</i>			
All or most of the time	21.0 <sup>1</sup>	36.2	24.6
Other	14.9	37.6	24.5
<i>Emotional support</i>			
High level of emotional support	19.6	36.9	25.4
Low level of emotional support	18.9	39.4	23.8
<i>Tangible support for transportation to health services</i>			
All or most of the time	23.8 <sup>1</sup>	33.6	27.7 <sup>1</sup>
Other	15.9	38.8	22.2
<i>Love and affection</i>			
All or most of the time	18.6	37.7	26.2 <sup>1</sup>
Other	20.0	33.3	19.4
<b>Family cohesion</b>			
High (top 30 percentile)	15.3	32.0 <sup>1</sup>	25.5
Other	20.5	41.8	23.9



**Table B** Prevalence of injuries in the past 12 months serious enough to limit usual activities and related risk factors by sociocultural indicator, population aged 16 years and over, Nunavik, 2017 (continued)

	Injury prevalence	Driving under the influence	Unlocked firearm
<b>Community cohesion</b>			
High (top 30 percentile)	17.6	32.3 <sup>1</sup>	30.4 <sup>1</sup>
Other	19.7	42.5	21.2
<b>Involvement in community activities</b>			
<b>Participation in cultural, community or sports events</b>			
Always or often	21.8	37.1	27.5
Other	17.1	40.0	22.6
<b>Volunteering for a group, an organization or community event</b>			
Always or often	19.8	34.5	26.4
Other	18.6	40.7	23.7
<b>Participation in healing and wellness activities</b>			
Yes	21.4	41.0	28.3
No	18.0	37.9	22.8
<b>Perception of health services</b>			
Positive perception of health services (top 30 percentile)	16.0*	32.0 <sup>1</sup>	30.7 <sup>1</sup>
Other	18.9	41.3	22.2
<b>Sedentary time</b>			
Time spent sitting > 7 hours per day	20.0	44.9 <sup>1</sup>	28.4 <sup>1</sup>
Time spent sitting ≤ 7 hours per day	18.6	35.3	22.4

Coloured cells indicate statistically significant comparisons.

1. Statistically significant difference observed using the 5% threshold compared to the other group.

\* The coefficient of variation is greater than 15% and lower than or equal to 25%. The proportion should be interpreted carefully.

**Table C** Proportion of Nunavimmiut driving under the influence and keeping unlocked firearms by sociodemographic indicator (%), population aged 16 years and over, Nunavik, 2017

	Driving under the influence <sup>a</sup>	Unlocked firearms
%	38.8	24.5
<b>Sex</b>		
Men	44.0 <sup>1</sup>	27.7 <sup>1</sup>
Women	33.3	21.3
<b>Age group</b>		
16-30 years	47.6 <sup>2,3</sup>	24.1
31-54 years	39.0 <sup>3</sup>	25.6
55 years and over	15.7 <sup>*</sup>	23.1
<b>Coast</b>		
Hudson	32.6 <sup>1</sup>	23.7
Ungava	46.7	25.6
<b>Marital status</b>		
Single	41.8	20.9
Married or common law	37.7	27.4
Separated, divorced or widowed	26.1 <sup>*</sup>	22.7 <sup>*</sup>
<b>Education level</b>		
Elementary school or less	17.7 <sup>*4</sup>	22.7 <sup>*</sup>
Secondary school not completed	38.8 <sup>4</sup>	23.5
Secondary school or higher	47.0 <sup>4</sup>	27.5
<b>Employment</b>		
Employed	43.1 <sup>1</sup>	26.8 <sup>1</sup>
Not employed	30.2	20.5
<b>Income</b>		
Less than \$20 000	36.1	23.5
\$20 000 and over	42.0	28.2
<b>Community size</b>		
Large	39.4	23.8
Small	38.0	25.5

Coloured cells indicate statistically significant comparisons.

a. People having driven a vehicle in the past 12 months.

1. Statistically significant difference observed using the 5% threshold compared to the other group.
2. Statistically significant difference observed using the 5% threshold compared to Nunavimmiut aged 31 to 54 years old.
3. Statistically significant difference observed using the 5% threshold compared to Nunavimmiut aged 55 years and over.
4. Statistically significant difference observed using the 5% threshold compared to the other groups.

\* The coefficient of variation is greater than 15% and lower than or equal to 25%. The proportion should be interpreted carefully.

**Table D** Proportion of Nunavimmiut who sought medical care after having had an injury that resulted in limitations of their usual activities in the past 12 months by sociodemographic indicator (%), population having had an injury limiting their usual activities, 16 years and over, Nunavik, 2017

	Proportion of Nunavimmiut who sought medical care after being injured
%	80.0
<b>Sex</b>	
Men	80.5
Women	79.2
<b>Age group</b>	
16-30 years	74.3
31-54 years	90.0 <sup>2</sup>
55 years and over	76.5
<b>Coast</b>	
Hudson	80.0
Ungava	80.0
<b>Marital status</b>	
Single	78.8
Married or common law	82.2
Separated, divorced or widowed	NP
<b>Education level</b>	
Elementary school or less	NP
Secondary school not completed	77.3
Secondary school or higher	83.8
<b>Employment</b>	
Employed	80.7
Not employed	78.3
<b>Income</b>	
Less than \$20 000	74.5 <sup>1</sup>
\$20 000 and over	87.0
<b>Community size</b>	
Large	80.9
Small	78.6

Coloured cells indicate statistically significant comparisons.

1. Statistically significant difference observed using the 5% threshold compared to the other group.

2. Statistically significant difference observed using the 5% threshold compared to Nunavimmiut aged 16 to 30 years old.

NP: Data not presented due to small number of respondents.



