Onkwaná:ta *Our Community*

Onkwatákarí:te *Our Health*

Produced by Onkwata'karitáhtshera
Vol. 1 • May 2018

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About the report:
This report belongs to the community of Kahnawà:ke and is stewarded by Onkwata'karitáhtshera. The materials are to be used solely for non-commercial purposes and with the goal of improving the health of the community. The production and distribution of this document and the information contained within it is guided by the Onkwata'karitáhtshera Health Surveillance Policy and Health Research Policy.

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Written and Edited by:
Dr. Colleen Fuller (Onkwata'karitáhtshera)
Colin Steensma (Health Canada First Nations and Inuit Health Branch)
Derek Montour Kahnawà:ke Shakotiia'takehnhas Community Services (KSCS)
Valerie Diabo Kateri Memorial Hospital Centre (KMHC)
Susan Horne Kateri Memorial Hospital Centre (KMHC)
Patsy Bordeau (Onkwata'karitáhtshera)
Karonhiaroroks Picard (Onkwata'karitáhtshera)
Alana Kane (Onkwata'karitáhtshera)
Blair Armstrong Kahnawà:ke Shakotiia'takehnhas Community Services (KSCS)
Cheryl Delaronde (Graphic Design and format) Cover Design

Produced with the collaboration of:
First Nations of Québec and Labrador Health and Social Services Commission:
Regional Health Survey Team
Direction de la Santé Publique de la Montérégie:
Manon Noiseux
Éveline Savoie
Health Canada, First Nations and Inuit Health Branch:
Sylvie Aubuchon
Colin Steensma

Reviewed by:
Members of Onkwata'karitáhtshera:
David Scott Kahnawà:ke Fire Brigade (KFB); Chief Rhonda Kirby & Chief Billy Diabo Mohawk Council of Kahnawà:ke (MCK); Vickie Coury-Jocks & Derek Montour Kahnawà:ke Shakotiia'takehnhas Community Services (KSCS); Susan Horne, Valerie Diabo & Lynda Delisle (KMHC)

Members of the Onkwata'karitáhtshera Data Mining Subcommittee:
Susan Horne, Derek Montour, Valerie Diabo, Blair Armstrong, Jamie Samayoa, Dr. Colleen Fuller, Colin Steensma

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All community members who participated in the 2015 Regional Health Survey, all individuals who helped with the survey team, and the community health unit of Kateri Memorial Hospital Centre. We also thank all readers, and the individuals and community organizations that will use the information contained within this health portrait to take action to improve the health of Kahnawà:ke community members.

To contact Onkwata'karitáhtshera:
Phone (450) 632-6880
Email patsyb@kscskahnawake.ca
P.O. Box 1440
Kahnawake, Quebec J0L 1B0

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Message from Chair of Onkwata'karitáhtshera

Wa'tkwanonhwerá:ton,

On behalf of Onkwata'karitáhtshera and the Data Mining Sub-Committee, it is with great pleasure that we announce the launch of Volume 1 of Kahnawà:ke's "*Onkwaná:ta Our Community, Onkwata'karí:te Our Health"* portrait. This portrait marks an important step forward in improving health for the community of Kahnawà:ke.

Onkwata'karitáhtshera is the agency that brings together Kahnawà:ke community organizations and community member input in order to lead the implementation of our Community Health Plan. Leaders and staff from the Kahnàwa:ke Fire Brigade (KFB), Kateri Memorial Hospital Centre (KMHC), Kahnawà:ke Shakotiia'takehnhas Community Services (KSCS), and the Mohawk Council of Kahnawà:ke (MCK) come together in Onkwata'karitáhtshera for this common purpose.

Through consultation with community members and our service organizations over years, our seven current health priorities emerged, Diabetes, Cardiovascular Disease, Obesity, Early Childhood and Family Wellness (focus on Learning Disabilities and Developmental Delays), Substance Use and Additions, Mental Wellness, and Cancer.

Several years ago, Onkwata'karitáhtshera identified a major gap in effective service planning; insufficient data existed to guide planning and decision-making at a program level. Simply put, we did not have an accurate picture of the true state of health in Kahnawà:ke. Taking diabetes as an example, although we had a strong perception that diabetes has large impacts on community members, we didn't always have the numbers to know how much more diabetes impacted people in Kahnawà:ke compared to elsewhere or whether the interventions put in place were having an impact over time.

As we started to explore the task of improving our ability to access, monitor, analyze and report information related to our community's health and well-being, we realized the solutions to this task were both complex and complicated. Although we have long been able to access data within Kahnawà:ke, it has not been organized in a very accessible fashion, it was not readily available for review, and we did not have sufficient capacity within the community to analyze the information effectively. We quickly identified that to be successful, we would need to create partnerships with others who possess the expertise to assist us.

As luck would have it, the Québec regional office of Health Canada, First Nations and Inuit Health Branch was exploring opportunities to help communities access data from both the Non-Insured Health Benefits (NIHB) program and the provincial healthcare system *Régie de l'Assurance Maladie du Québec, (*RAMQ). Onkwata'karitáhtshera quickly decided to partner with them to better access and use Kahnawà:ke's data. Further to this, Health Canada also supported a pilot project partnership with Kahnawà:ke to assign an epidemiologist to assist in gathering, analyzing and reporting on the information obtained from the NIHB database. This key partnership helped launch our efforts.

At the same time, Onkwata'karitáhtshera was able to help Kahnawà:ke participate for the first time in the First Nations Regional Health Survey (RHS), coordinated in partnership with the First Nations of Québec and Labrador Health and Social Services Commission (FNQLHSSC). The RHS is a survey repeated every few years in First Nations communities across Québec and Canada, previous surveys having taken place in 2002 and 2008. Although Kahnawà:ke had hoped to participate in earlier years, as we identified the importance of obtaining a portrait of our health, we were not able to realize it in time for the 2008 survey. In 2015 and 2016, Kahnawà:ke conducted the survey using our own local coordinator and surveyors, achieving a very high rate of participation thanks to the willingness of our community members. Onkwata'karitáhtshera also arranged for local ownership and possession of Kahnawà:ke's data from the survey so that we are now able to draw the results of this survey into an understandable portrait. We will continue to partner with the FNQLHSSC as they assist the region in analyzing data and in planning future surveys.

Another fortunate event occurred for Onkwata'karitáhtshera in the last 2 years; we have partnered with a Medical Doctor who practices in our community and who is also a public health specialist. Her expertise especially, coupled with the partnership with Health Canada and the results of the RHS, have catapulted our project much further than we hoped! Through her direct intervention, we were able to partner with our regional public health department within the *Centre intégré de santé et des services sociaux (CISSS) de la Montérégie-Centre*, in order to access the data contained in the Québec health care system's databases. This data has produced an additional treasure trove of information which directly complements the information we have from the Regional Health Survey and from our own community agencies. Putting this all together helps us to have a much clearer view of our true state of health in Kahnawà:ke.

Volume 1 of "*Onkwaná:ta Our Community, Onkwata'karí:te Our Health"* explains in detail Kahnawà:ke's portrait of health for 4 distinct areas of focus. These areas directly

coincide with several of our community's health priorities. Onkwata'karitáhtshera will continue to work with our partners to further analyze the available data in order to produce additional volumes focusing on other health topics.

It must be emphasized that the information contained within this document belongs to the Kahnawà:ke community and is meant to be used by community organizations and community members. We would like to encourage you to review the data, use it to ask more questions, and help us to pursue solutions on how to improve our overall state of health within our community. If you are not from our community, we also encourage you to review the information, but we ask that you contact Onkwata'karitáhtshera to request the use of the data contained in any chapters of "Onkwaná*:ta Our Community, Onkwata'karí:te Our Health"*.

Derek Montour, chairperson of Onkwata'karitáhtshera

Information sources used and their limitations:

1) 2015 Regional Health Survey (RHS)
Obtained through collaboration with the First Nations of Québec and Labrador Health and Social Services Commission (FNQLHSSC)

In 2015, Kahnawà:ke took a big step towards a better understanding of local health issues by participating for the first time in the Regional Health Survey. For this survey 616 community members (a sample representing approximately 7900 people) answered questions about a wide range of health and social issues, such as: whether they had ever been diagnosed with any chronic diseases, what they do to stay healthy and what they feel the biggest health and social challenges to the community are. Thanks to the hard work and participation of so many people, Kahnawà:ke now has a much clearer picture of the health status across the community. This gives unprecedented insight into the habits, behaviours, feelings, experiences, support networks, community connectedness and other root causes that can lead to health or to illness for individuals, and that can influence their quality of life**.** This is incredibly important for decision-making by Onkwata'karitáhtshera committees, organizational leaders, front-line workers and for program development in the community for everyone aiming to prevent diseases and promote health.

Even so, the Regional Health Survey, like all surveys, is only as good as the questions that were asked and the responses people were willing to give.

Advantages of the survey data:

- Insight into root causes of health issues
- Understanding of habits, behaviours and context
- Ability to link information from multiple questions to achieve a more complex understanding of health issues

Limitations of the survey data:

- Occurred only at one moment in time (2015-6)
    - Will need to repeat the survey regularly in order to keep information up-to- date to see if improvements are being made through community actions
- There isn't always something to compare to:
    - Many questions can be compared directly to those asked to the general population of Canada or Québec, or to the other First Nations of Québec, but some specific questions asked by the survey have not been asked before, so there is nothing to compare to yet

Possible under-reporting of some conditions:

- Especially sensitive or stigmatized topics such as gambling, substance abuse, violence, and mental illness
- Sometimes the most unwell individuals are the least willing to participate in a survey, or they may even be unable to do so because of the degree of their illness. So survey results may sometimes not fully capture the true burden of an illness
- Sometimes people do not accurately remember if or when they last had a screening test for some conditions, even though they may have in fact been tested for or diagnosed with a health condition

2) Québec medical care databases: Québec Integrated Chronic Disease Surveillance System, (*Le Système Intégré de Surveillances des Maladies Chroniques du Québec; SISMACQ*), Québec Cancer Registry (*Fichier des tumeurs du Québec*), RAMQ registration (*Fichier d'inscription des personnes assurées*; *FIPA*), Birth & death registry (*Fichier des naissances, Fichier des décès).*

Obtained through collaboration with *la Direction Régionale de Santé Publique de la Montérégie, Centre intégré de santé et des services sociaux de la Montérégie-Centre*

For almost all healthcare visits, like going to an emergency room or getting a blood test at Kateri Memorial Hospital Centre (KMHC), we have to show our healthcare cards – this is how the hospitals keep track of how many patients they've seen and what types of health needs people were seen for. This same information can also tell us how common certain medical diagnoses are; for example: depression and diabetes. In 2017, Onkwata'karitáhtshera gained access to certain data connected to medical care usage by forming a collaboration with la *Direction Régionale de la Santé Publique de la Montérégie*. This information gives us one of the clearest pictures we have to date about trends in diagnoses over time.

Advantages of the Québec Integrated Chronic Disease Surveillance System (*Le Système Intégré de Surveillances des Maladies Chroniques du Québec; SISMACQ*), Cancer Registry, and Birth and Death Statistics:

- Accuracy:
  - These measures are the gold standard for how common certain medical conditions are
- Trends over time:
  - We can compare these measures locally over time over many years to see if certain conditions are trending upwards or downwards
- Comparisons available to the rates in Montérégie and Québec

Limitations:

- Geographic definition: to be as specific as possible to Kahnawà:ke, these statistics only include people with an active *Régie de l'Assurance Maladie du Québec* (RAMQ) medicare card associated with the J0L 1B0 postal code:
  - So the data may not include some community members living in Chateauguay, Mercier, LaSalle, USA, etc. even if they come to Kahnawà:ke for their services.
- Only includes people who seek out medical services:
  - We know many that people with depression, anxiety, and addictions never go to see a doctor about these conditions, so they will not get counted

3) Community based programs and services data:

Many of our local programs and services e.g.: Kateri Memorial Hospital Centre (KMHC), Kahnawà:ke Fire Brigade (KFB), Kahnawà:ke Shakotiia'takehnhas Community Services (KSCS), keep track of the number of people they see each year and for what types of services.

Advantages:

- When we put this together with the other data sources, we can see where there are matches between the services we are providing and the health problems that exist e.g.: how many people have a diagnosis of diabetes and how many have been seen by the diabetes nurse educator

Limitations:

- This data cannot tell us about the unexpressed need, such as those who do not feel comfortable enough to seek out local services, or those who seek out services outside of the community
- Not designed to be comprehensive, sometimes information is not recorded

4) Dispensed Prescriptions covered by the Non-Insured Health Benefits (NIHB) program

Obtained through collaboration with Health Canada, First Nations and Inuit Health Branch

Thanks to a partnership between Onkwata'karitáhtshera and the First Nations and Inuit Health Branch of Health Canada, for the first time we are able to explore the general picture of medication use and trends over time for the community. For some issues, like diabetes, this can be very helpful to understand how commonly people are receiving treatment, and to a certain extent, the severity of their disease. We are also interested in medications that can be addictive and abused, notably opioids (a powerful type of pain-killer). It is important to remember that some medications can be used for multiple conditions, so trends must always be interpreted cautiously with contextual knowledge of changes in the community, services, and medical practices being considered.

Advantages:

- For some health problems this can give insight into how many people are using pharmacy treatment and how severe some of those conditions are
- Allows us to look at trends over time to be alert to big changes occurring

Limitations:

There are some very important reasons to be cautious when interpreting the dispensed prescription information:

- The NIHB data is based on registration as a Band member with Indigenous and Northern Affairs Canada, so it probably includes many people who may not now live in Kahnawà:ke, and even some who may never have lived in Kahnawà:ke
    - For example, if someone from Kahnawà:ke moved to another place in Québec twenty years ago, any prescription they received today would still be counted in this data
- Not everyone who has a health condition will be taking a medication (some people receive counselling and/or traditional therapies, exercise etc.), so it is not fully representative of the burden of illness that exists
- Some of the medications analyzed can be used for other purposes and the reason is unfortunately not recorded. This can muddy the waters in trying to interpret the trends
- The NIHB data will also miss any medications that are claimed from other types of insurance:

- Medication paid by private insurance through a job (like Desjardins or Sunlife)
- Medication paid by Commission des Normes, de l'Équité, de la Santé et de la Sécurité du travail (CNESST) or Mohawk Self Insurance (MSI) after a work injury
- Medication paid by the *Régie de l'Assurance Maladie du Québec* (RAMQ) for those who are admitted to hospital or receiving Québec disability insurance or Québec social insurance
- Even so, our local pharmacists tell us that the vast majority of the medications they dispense are covered by the NIHB program

- For medications that can be addictive and abused, notably opioids (a powerful type of pain-killer) and benzodiazepines (a powerful type of sedative), prescription trends only tell us part of the story, and it is hard to tease out specifically, abuse of these medications from the dispensing data. It is important to remember that:
  - Most people who take these medications take them <u>appropriately</u> for medical conditions that they need help with (e.g.: for pain after a surgery, for cancer-related pain, for severe conditions like rheumatoid arthritis)
  - People who abuse these medications sometimes get them by prescription. They also sometimes obtain them illegally by borrowing or stealing from family members and friends who themselves are prescribed them and sometimes they are purchased from black market sources

5) <u>Tobacco Control School Products Survey (2016)</u>

In 2016, the Kahnawà:ke Tobacco Working Group conducted a survey of 138 youth aged 12-16 years (grades 7-11). The survey was done on the community school buses and asked about use of various tobacco products including chewing tobacco, cigarettes, e-cigarettes, and shisha.

Advantages to this survey data:

- Asked questions about chewing tobacco and e-cigarettes, as well as experimentation among youth

Limitations to this survey data:

- Occurred only at one moment in time
- Respondents might not have been a representative sample of youth
- Possible under-reporting of use by youth

6) FORGE AHEAD First Nations Diabetes Surveillance System Obtained through collaboration between Kahnawà:ke and Western University, London, ON

Through a research partnership between Kahnawà:ke and Western University, Kateri Memorial Hospital Centre developed a registry of all patients living with diabetes who seek care at KMHC. Through an extensive process of chart review of several hundred charts, it is possible to count the number of people who seek care for diabetes and measure how often care objectives (such as achieving a target blood sugar level) are reached. This helps to cross-validate the other data sources and is a valuable source of information on quality of care.

Advantages to FORGE AHEAD data:

- Ability to assess care and health outcome indicators for a large proportion of patients seen at KMHC for diabetes and to determine where care improvements could be made
- A second set of data to cross-validate with Regional Health Survey responses and Québec Chronic Disease Surveillance System (SISMACQ) data

Limitations to FORGE AHEAD data

- People who seek care for diabetes in places other than KMHC are not part of the FORGE AHEAD data
- Inconsistency in documentation on medical charts may under-capture some care measures (for example, if the health care provider does not explicitly record home blood pressure measures reviewed at a patient visit)

Comparisons:

Where possible, we try to show the comparison of Kahnawà:ke-specific data to the rates of illness and behaviours in the province of Québec and the region of Montérégie. These comparisons are adjusted for age differences in the population whenever possible in order to make sure they are comparable. Sometimes we are also able to compare to results from other First Nations within Québec and to the general population of Canada. Sometimes we do not have another group to compare to and the Kahnawà:ke data is presented alone.

Special Note:

Small numbers limit statistical analysis for less common conditions. Throughout the report, a single asterisk (*) indicates this is an imprecise estimate and results should be interpreted with caution (coefficient of variation greater than or equal to 16.6 and less than or equal to 33.3). Occasionally you will see two asterisks (**). In this case, the data is so imprecise that the number is usually not shown at all because it could be very misleading.

Chapter 1:

Diabetes & Diabetes Prevention in Kahnawà:ke

Summary of key points:

- The number of **new diagnoses** of diabetes per 1000 adults per year (incidence rate) **has decreased** in Kahnawà:ke between 2000-2015 (from 21 new cases per 1000 adults per year to 15 new cases per 1000 adults per year):
    - Even so, the number of new diagnoses per 1000 people is still **almost two and a half times that of Montérégie and Québec** (around 15 new diagnoses per 1000 people vs around 6 per 1000 people in Montérégie and Québec)
- The percentage of people living with diabetes as a chronic condition (prevalence) in Kahnawà:ke among adults **is more than double than that of Montérégie and Québec:**
    - 17.9% (almost 1 in 6) of the adults over 20 years old in Kahnawà:ke are living with diabetes vs approximately 8% of adults in Montérégie and Québec
    - This represents approximately 820 adults in 2015
- The prevalence of diabetes has been rising between 2000-2015 in Kahnawà:ke:
    - Similar trends are seen in Montérégie and Québec
    - The increase in prevalence of diabetes despite the decrease in new cases (incidence rate) is because people who are diagnosed with diabetes are living longer with this condition, either because they are diagnosed earlier in life or because of improvements in the treatment and management of their health conditions, leading to a longer lifespan
- Many people living with diabetes in Kahnawà:ke report also having been diagnosed with related chronic conditions. The most common are: high blood pressure (hypertension), obesity, high cholesterol and heart disease. These are all much higher among the people who are living with diabetes than among the people that do not have a diagnosis of diabetes
- **Optimal care targets for diabetes and the associated medical conditions are not currently being achieved:**
    - 88.6% of adults living with diabetes reported having seen a doctor or community health nurse within the last year
    - **Only a quarter of adults living with diabetes (24.4%) have their blood pressure at target levels of less than 130/80**
    - **45% of adults living with diabetes had not completed standard blood tests often enough** to ensure adequate follow-up of their blood sugar or cholesterol levels
        - Blood sugar levels (i.e.: a hemoglobin A1c to less than 7.0%) are well managed in only 46% of adults living with diabetes who had this test

Only 30% of diabetic adults had cholesterol tests showing LDL cholesterol levels at or below target (<2.0mmol/L) in the last year
    - 37% of people living with diabetes had not been tested for cholesterol levels in the past year (the recommendation is to test every year[1])
- The majority of adults living with diabetes (estimated between 63% to 92%) are either using oral medications (pills), insulin, or a combination of the two
- **69% of people living with diabetes in Kahnawà:ke use diet changes to help manage their blood sugar and 44% use exercise as a treatment**
- Fewer people living with diabetes get at least 30 minutes of physical activity per week compared to people who are not living with diabetes
- Approximately 2 out of 3 Kahnawa'kehrò:non eat at least one vegetable per day
- 9 out of 10 children eat at least one fruit per day
- 8 out of 10 adults in Kahnawà:ke are either overweight or obese
- Approximately 2 out of 3 adults in Kahnawà:ke get at least 150 minutes of moderate physical activity per week:
    - About 1 out of 4 children and youth get less than 30 minutes of physical activity per day
    - About 50% of adults get less than 30 minutes of physical activity per day

[1] http://guidelines.diabetes.ca/browse/chapter24#sec3

Introduction

What is Diabetes?

Diabetes is a chronic condition defined by high blood sugar levels. It happens when the body does not make or use insulin the right way. Insulin is a hormone that is important for the body to turn sugar from food into energy. There are three types of diabetes:

1) **Type 1 diabetes** happens when someone's body stops making insulin; this type of diabetes most often begins in childhood or the teenage years and is less common than type 2 diabetes. People living with type 1 diabetes need to take injectable insulin since their bodies can no longer produce it.
2) **Type 2 diabetes** happens when someone's body has trouble using the insulin that it makes - **this is by far the most common type of diabetes**. Type 2 diabetes usually begins in middle-age (e.g.: 40-60 years), but some people can develop it at younger or older ages, and the risk of developing it gets higher as people get older. Most people with type 2 diabetes can control their blood sugar effectively with pills, diet changes and increasing their physical activity levels, but some people also need to take insulin injections. Over years, their bodies may have more and more trouble using the insulin they have, so more medications may be needed as time goes on.
3) **Gestational diabetes** occurs during pregnancy. This is where a woman develops high blood sugar at some point during the pregnancy (more common in 2nd and 3rd trimesters). Most women with gestational diabetes are able to effectively manage their blood sugar levels with diet changes; some need medications. In gestational diabetes, the blood sugar levels improve back to non-diabetic levels once they have given birth. Even so, we know women who had gestational diabetes are much more likely to develop type 2 diabetes later on in their lives. [2,3]

Prediabetes is exactly what it sounds like, a period when a person's blood sugar levels are higher than normal, but not high enough to be considered type 2 diabetes. Around 50 percent of people with prediabetes will eventually develop type 2 diabetes. This can be delayed or prevented by changing to healthy eating habits, improving physical activity, and sometimes taking medication.

[2] Diabetes Canada, Prediabetes; http://www.diabetes.ca/about-diabetes/prediabetes
[3] Diabetes Canada, Living with prediabetes; http://www.diabetes.ca/diabetes-and-you/living-with-prediabetes

Why does Diabetes matter?

Uncontrolled blood sugar levels from diabetes leads to chronic damage to blood vessels and nerves. This causes health problems such as:

- heart attacks
- strokes
- kidney failure
- blindness
- severe infections
- limb amputation
- loss of sensation
- chronic nerve pain
- erectile dysfunction

It is now recognized that there is a link between diabetes and some mental health disorders such as anxiety and depression.[4] By taking control of diabetes early on and maintaining this over time, many of these health effects can be prevented, keeping people living with diabetes healthier for much longer.

In Canada, it is estimated that around 3.4 million people (around 9% of the population) were living with diabetes in 2015, and this number is projected to increase by 44% to 5 million, or 12% of the population, by 2025. Another 5.7 million individuals aged 20 and over were estimated to have prediabetes in 2015, with a projected increase to 6.4 million by 2025. People of Asian, South Asian, Hispanic, African or Indigenous descent are at higher risk of Type 2 diabetes. In Canadian First Nations, diabetes rates are estimated at around 17.2% among adults aged 18 and older living on reserve (RHS 2008/2010) and 12.5% among those living off reserve (CCHS 2010-2013)[5].

Who is at risk of developing diabetes?

Type 1 Diabetes

Type 1 diabetes is an *autoimmune* disease, where the body's own immune system attacks and destroys the cells that produce insulin in the pancreas. The triggers for this are not totally understood, but it usually begins sometime in late childhood or youth, but can sometimes occur in adults, although much less commonly. Risk factors for Type 1 diabetes are not as clear as they are for Type 2 diabetes, but family history does play a partial role.

There is considerable overlap in goals of treatment of Type 1 and Type 2 diabetes, but screening and early prevention activities are directed towards Type 2

[4] Diabetes Canada, Diabetes and You: Complications, https://www.diabetes.ca/diabetes-and-you/complications

[5] Pan - Canadian Health Inequalities Data Tool, 2017 Edition. A joint initiative of the Public Health Agency of Canada, the Pan - Canadian Public Health Network, Statistics Canada, and the Canadian Institute of Health Information; https://infobase.phac-aspc.gc.ca/health-inequalities/data-tool/

diabetes since the risk factors are better understood.

Type 2 Diabetes

Indigenous people are *in general* at greater risk of Type 2 diabetes and of gestational diabetes than the overall Canadian population. This is true for many Indigenous populations in other countries as well. This is due to many effects coming together[6], some of which are individual risk factors, and many are related to society-level risk factors.

Type 2 Diabetes individual risk factors:

- Older age
- Being overweight or obese, especially excess fat carried around the waist
- Family history of diabetes
- Diets high in calories and high in refined carbohydrates (e.g.: starches such as white bread, rice, potatoes, sugars in soda, juices and sweetened beverages)
- Low levels of physical activity
- Having high cholesterol and/or high blood pressure
- Having had gestational diabetes or having given birth to a baby larger than 4kg (9lbs) at birth
- Obstructive sleep apnea
- Chronic sleep deficits
- Mental illnesses such as schizophrenia, bipolar disorder and depression
- Chronic stress
- Chronic use of steroid medications

Type 2 Diabetes social determinants[7]:

- Effects of colonization on physical activity and diet; disconnection from traditional activities
- Community design and safety (e.g.: access to sports facilities, sidewalks and safe places for walking)
- Availability of healthy and affordable foods
- Higher rates of poverty and unemployment among many Indigenous peoples
- Mental wellbeing and chronic stress; negative stereotyping and stigmatization
- Lower levels of education
- Systemic barriers to medical care ("fragmented healthcare, poor chronic disease management, high healthcare staff turnover in some communities, and limited to non-existent surveillance")

[6] Health Canada – Diabetes Fact Sheet https://www.canada.ca/en/health-canada/services/first-nations-inuit-health/reports-publications/diseases-health-conditions/diabetes-first-nations-inuit-health-canada.html

[7] Canadian Diabetes Association Clinical Practice Guidelines Expert Committee (2013) Clinical Practice Guidelines, Chapter 38: Type 2 Diabetes in Aboriginal Peoples, Canadian Journal of Diabetes; 37: S191-S196

The parts of this portrait that discuss medical care are applicable to both Type 1 and Type 2 diabetes since there is considerable overlap in the medical care (for example, both groups of people should have regular eye exams and monitoring of their blood pressure and cholesterol).

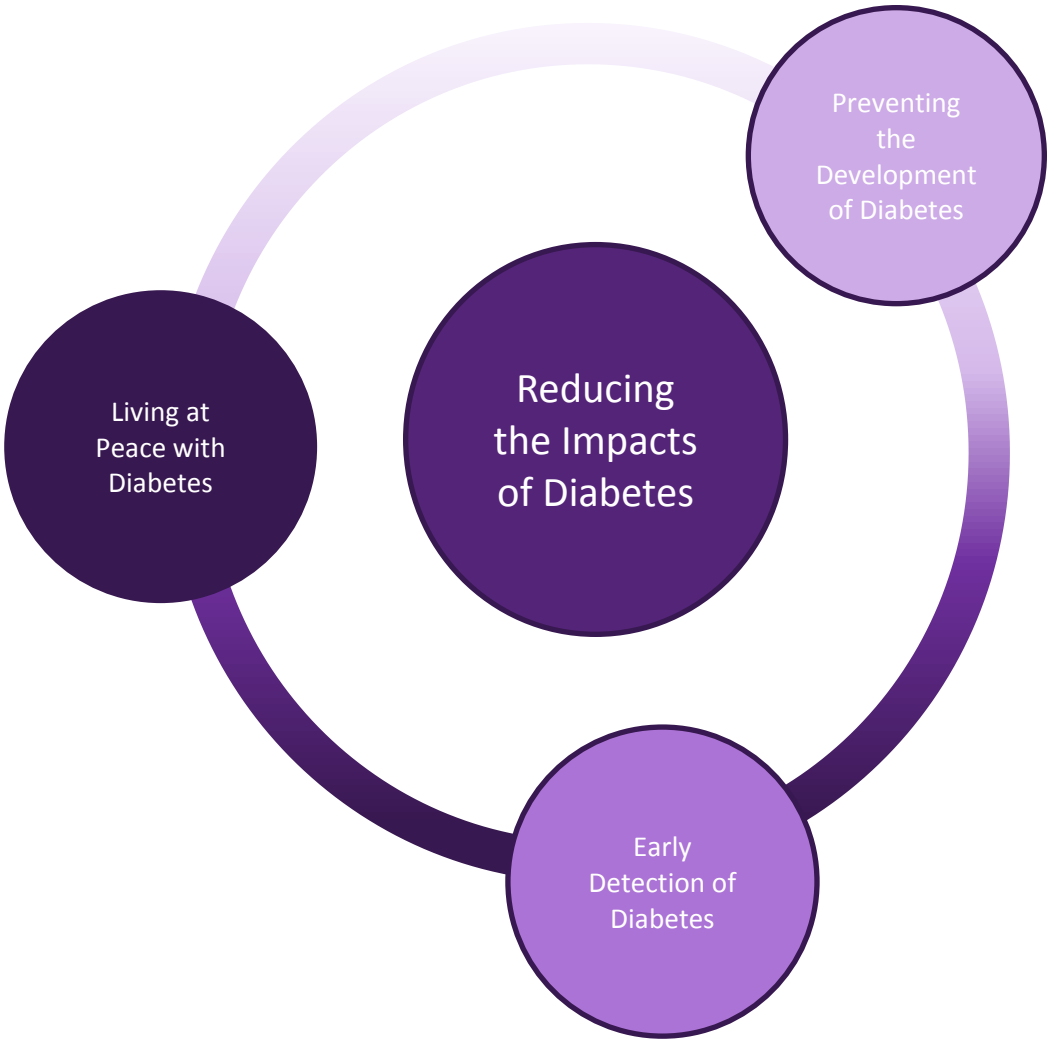
The parts of this portrait that discuss the efforts to prevent new cases of diabetes (healthier eating and more physical activity) are applicable to Type 2 diabetes and gestational diabetes.

What can be done about diabetes?

In order to reduce the impacts of diabetes on the community and on individual community members we must:

1) Help the people who have already developed diabetes to *Live at Peace* with diabetes. This means providing care and services to help people take control over this condition
2) Catch diabetes early. This means offering accessible and routine screening tests to people who are at risk of developing diabetes
3) Prevent new people from developing diabetes. This means doing health promotion activities and having policies and spaces to improve physical activity and reduced risk factors like obesity

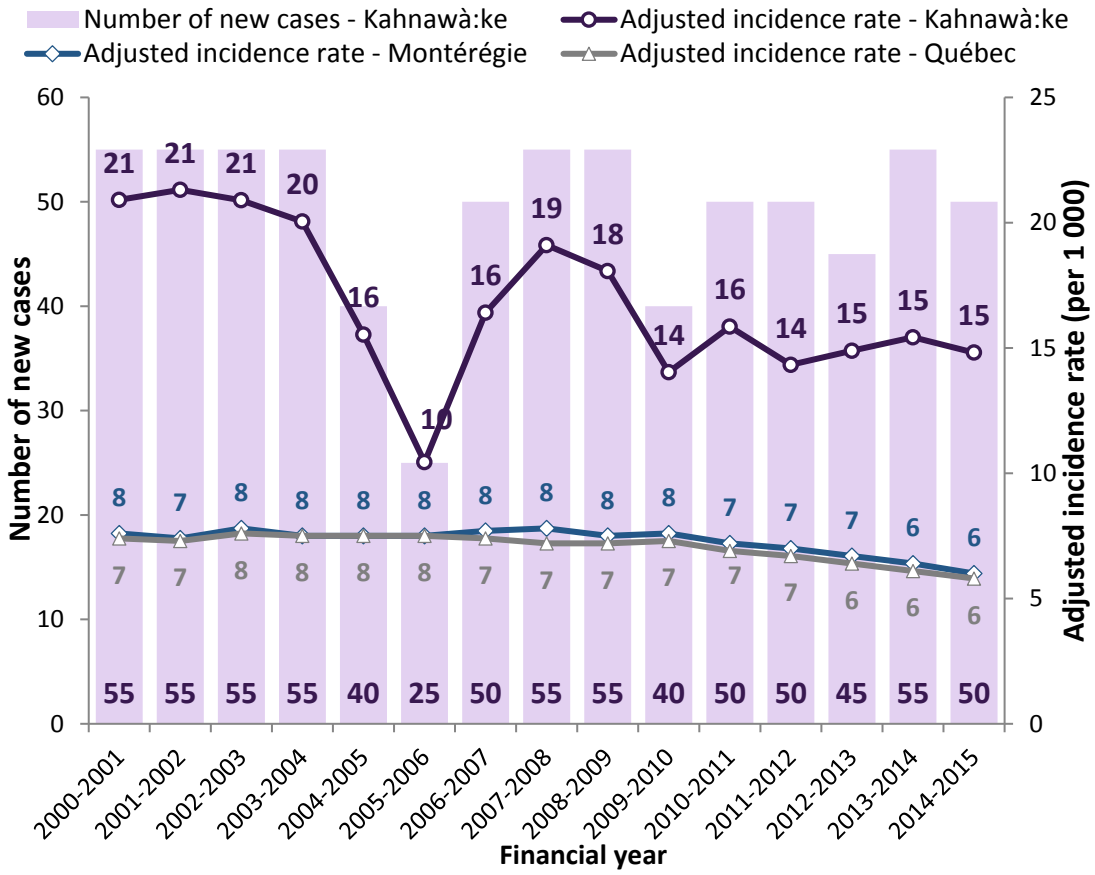
Many of the things that can be done to help people *Live at Peace* with diabetes can also help prevent the development of diabetes. One example is physical activity, which can help prevent diabetes and can also help control blood sugar in people living with diabetes. By improving infrastructure to make exercise easier for more people we can achieve both goals. Specific strategies are discussed throughout the report and in the Areas for Action at the end of this report.


Preventing the Development of Diabetes
Reducing the Impacts of Diabetes
Living at Peace with Diabetes
Early Detection of Diabetes

How common is diabetes in Kahnawà:ke?

The graph below (Figure 1) shows **the number of individuals *newly diagnosed* with diabetes each year per 1000 adults in Kahnawà:ke (i.e.: *the incidence rate*)**. Typically, between 40-55 adults in the whole community receive a new diagnosis of diabetes each year. Since the overall population of Kahnawà:ke is growing, **the number of new cases of diabetes *per 1000 adults* per year decreased between 2000 and 2015 from 20.9 per 1000 adults to 14.8 per 1000 adults.**

Figure 1. Number of new cases and age-adjusted incidence rate of diabetes, population 20 years and more, Kahnawà:ke, Montérégie and Québec, 2000-2001 to 2014-2015



Source : INSPQ, Système intégré de surveillance des maladies chroniques du Québec (SISMACQ).
Production : équipe Surveillance de l'état de santé de la population, DSP de la Montérégie, février

This decrease in new cases is a positive change for the community, and speaks to the great efforts made in Kahnawà:ke over the last twenty years to prioritize and work towards preventing diabetes

There is some year to year fluctuation, with most of the decrease being between 2000 and 2010. **The rate has been fairly stable at about 15 new diagnoses *per 1000* adults per year for the last 5 years.** Even so, it is important to note there is a large gap in incidence rates between Kahnawà:ke and Montérégie & Québec throughout the years, with a much higher rate in Kahnawà:ke.

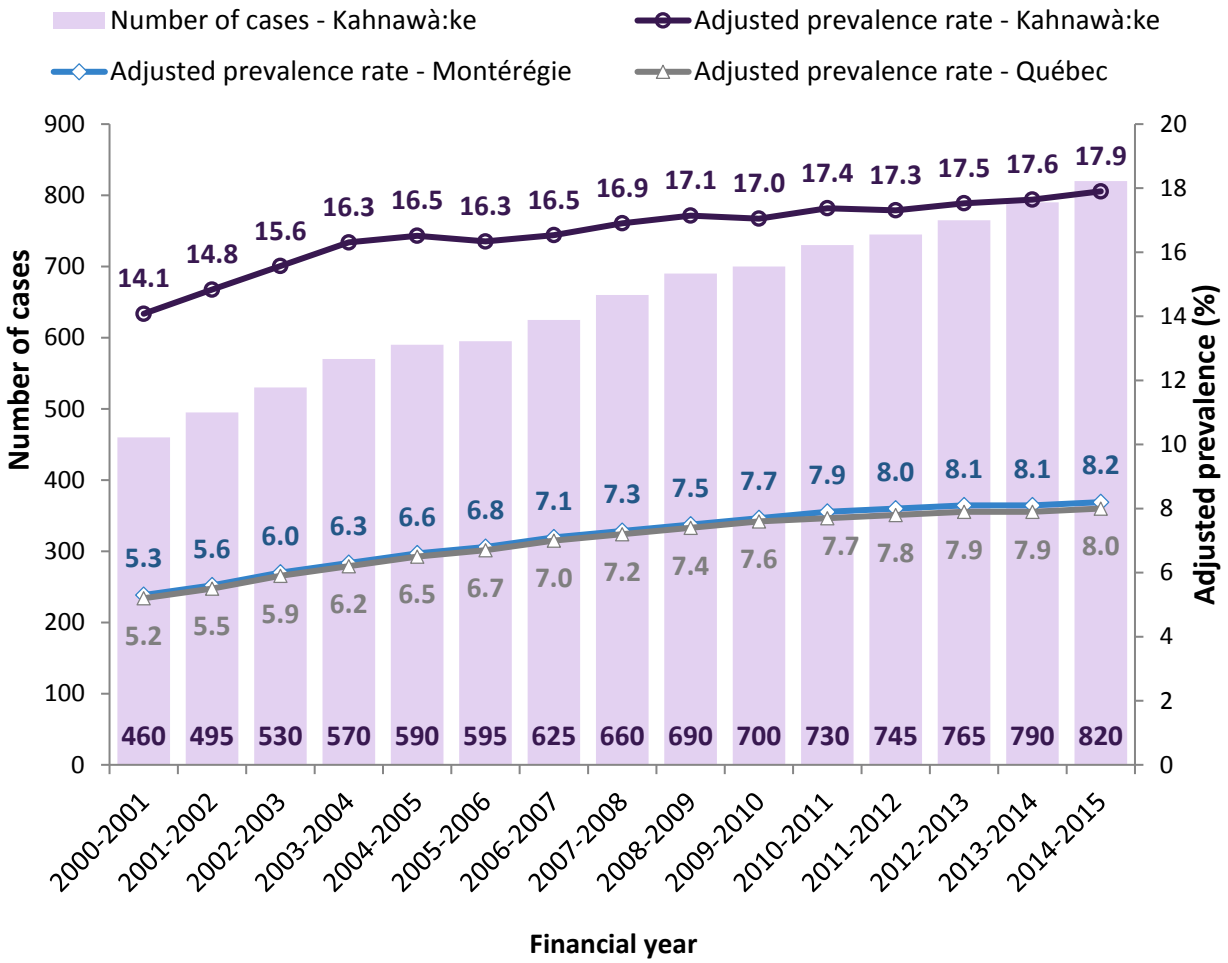
In fact, the incidence rate in Kahnawà:ke is still two and a half times that of Montérégie and Québec (both have around 6 new diagnoses per 1000 adults each year in 2015). As incidence decreased in Kahnawà:ke from 2000-2010, **this gap initially narrowed** somewhat, **but it is starting to widen again, as from 2010-2015, incidence has been slowly declining in Montérégie and Québec but has stayed fairly stable in Kahnawà:ke** in the same time period.

In addition to the prevention work done, it is possible that part of this trend could be from changes in screening rates. If, over time, fewer people have been tested, this rate might look like it is going down, but some people would be missed. Community service providers do not feel this is the case but we do not currently have a way of measuring this to confirm.

The goal for diabetes prevention is to continue to reduce the incidence of new cases and, in time, eliminate the persistent gap in diabetes burden between Kahnawà:ke and the surrounding area – this will be a long-term undertaking.

Figure 2 shows the *prevalence* of diabetes among adults (>20y) in Kahnawà:ke compared to the Montérégie region and all of Québec. **Prevalence counts all of the people who have *ever* been diagnosed with diabetes (Type 1 or Type 2)**, not just the new cases every year. This is important for diabetes because it is a chronic condition. Almost all people living with diabetes need ongoing medical assessment, treatment and special targeted preventions for many years or decades.

Figure 2. Number of cases and age-adjusted prevalence of diabetes, population 20 years and older, Kahnawà:ke, Montérégie and Québec, 2000-2001 to 2014-2015



Source : INSPQ, Système intégré de surveillance des maladies chroniques du Québec (SISMACQ).
Production : équipe Surveillance de l'état de santé de la population, DSP de la Montérégie, février 2017.

In 2015, approximately 820 adults in Kahnawà:ke were living with diabetes; this accounts for 17.9% (approximately 1 in 6) of all adults. This prevalence is **more than double than that of Montérégie and Québec** (in both, approximately 8% of adults live with diabetes).
Figure 2 also shows that the prevalence of diabetes has been rising over time. Between 2000-2001 and 2014-2015, the prevalence of diabetes has gone up from around 14.1% to 17.9% of the population in Kahnawà:ke. It has also increased in Montérégie and Québec over this same time period, but it is

important to note that the gap between Kahnawà:ke and both Montérégie & Québec has been consistent; Kahnawà:ke has had a prevalence that is more than double these places through all these years.

2x Diabetes affects more than twice as many adults in Kahnawà:ke compared to the Montérégie region and the province of Québec

The increase in *prevalence* of diabetes despite the decrease in *incidence rate* can be partly explained by improvements in the treatment and management of diabetes and the reduction of diabetes-related complications leading to a longer life. Another reason is that the diagnosis of diabetes is more often being made when people are younger, so they are living longer knowing about this diagnosis. In Figure 3, we can see that a high proportion

Of people currently living with diabetes were diagnosed before the age of 50. **The average age of diagnosis was 48 years old**.

It is important to note that because risk factors for diabetes accumulate over many years, it also takes many years of helping communities and people to make changes and create better circumstances in order to reduce these risk factors. Reducing the number of new diagnoses each year can only happen slowly. A shorter-term marker of success in prevention could be to aim for an increase in the average age of diagnosis.

Reducing the prevalence of diabetes will be even slower since people who are already living with diabetes will continue to have this condition for many years and hopefully will live long and full lives at peace with diabetes.

By following both the incidence and prevalence rates for Kahnawà:ke over time, we can develop a better understanding of whether programs and interventions are working.

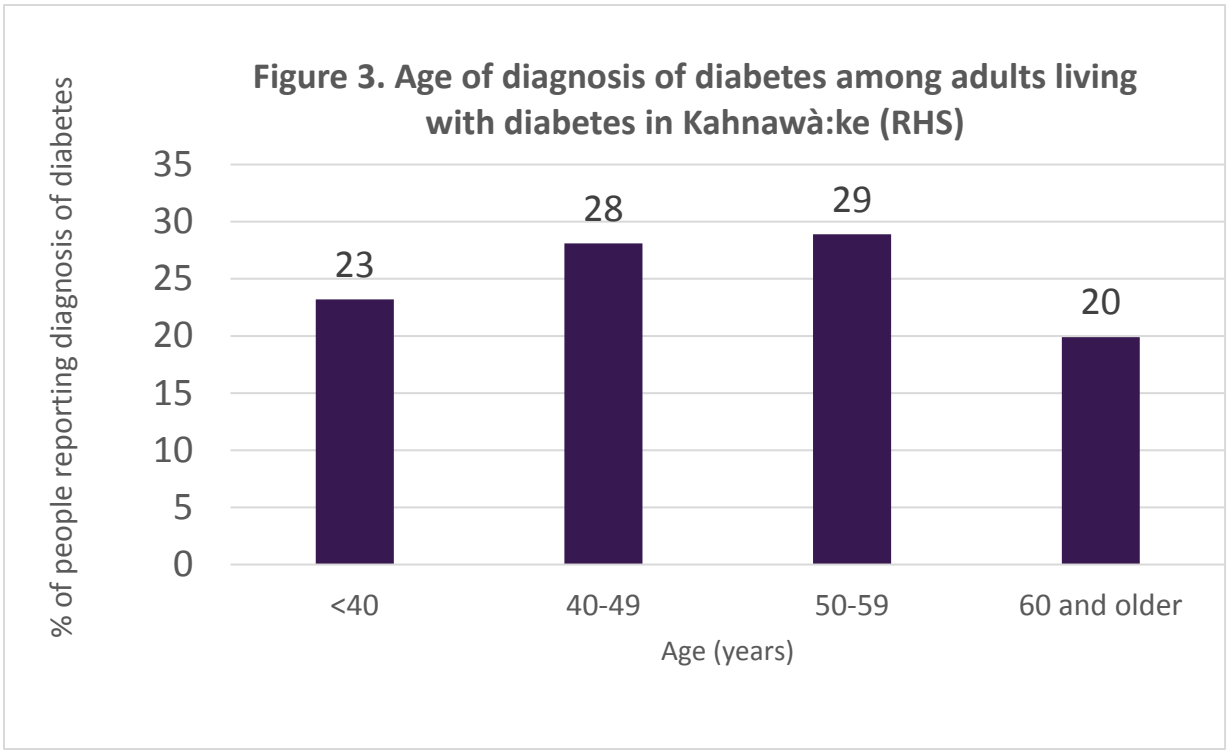
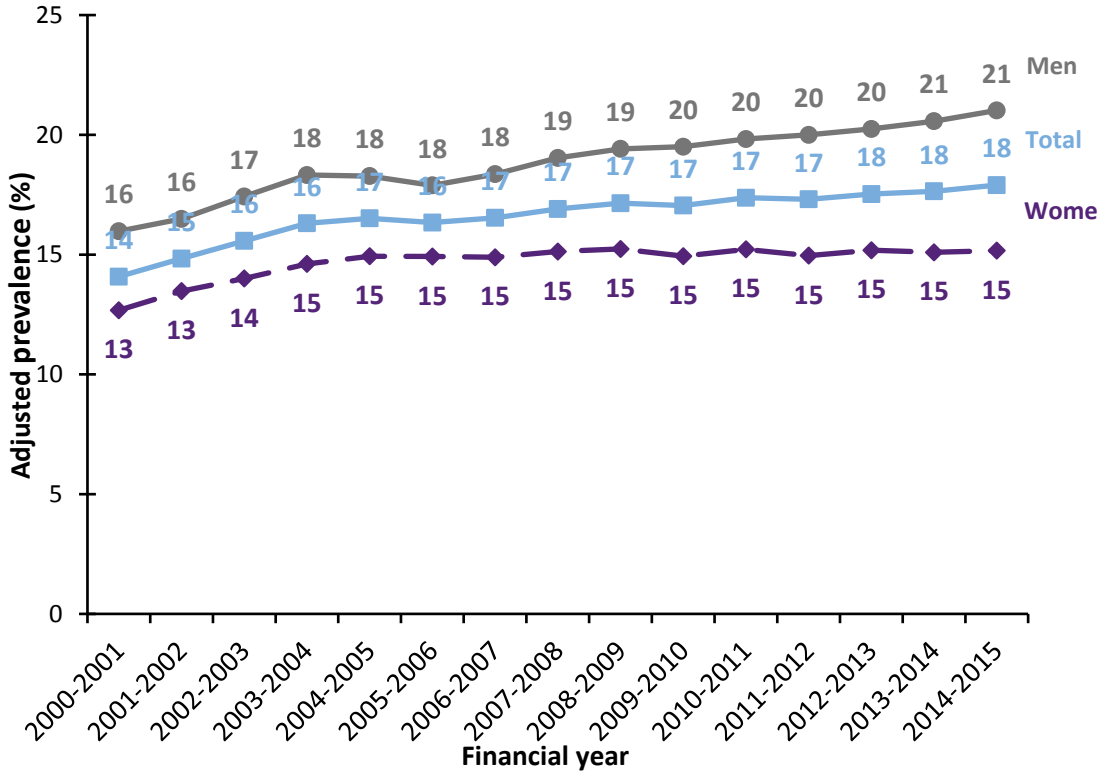


Figure 3. Age of diagnosis of diabetes among adults living with diabetes in Kahnawà:ke (RHS)
% of people reporting diagnosis of diabetes
35
30
25
20
15
10
5
0
23
28
29
20
<40
40-49
50-59
60 and older
Age (years)

The next graph (Figure 4) shows the prevalence of diabetes in men and in women. Prevalence in women has stabilized over the past 10 years at around 15% of adult women but is still increasing among men. For men, prevalence has gone from around 18% in 2004-2005 to 21% in 2014-2015.

In 2015 there were approximately 445 adult men in Kahnawà:ke with diabetes and approximately 380 adult women. A similar trend upwards in men was also seen in other First Nation communities in Québec in the 2008 Regional Health Survey.

Figure 4. Adjusted prevalence of diabetes in men and women aged 20y and over in Kahnawà:ke, 2000-2001 to 2014-2015



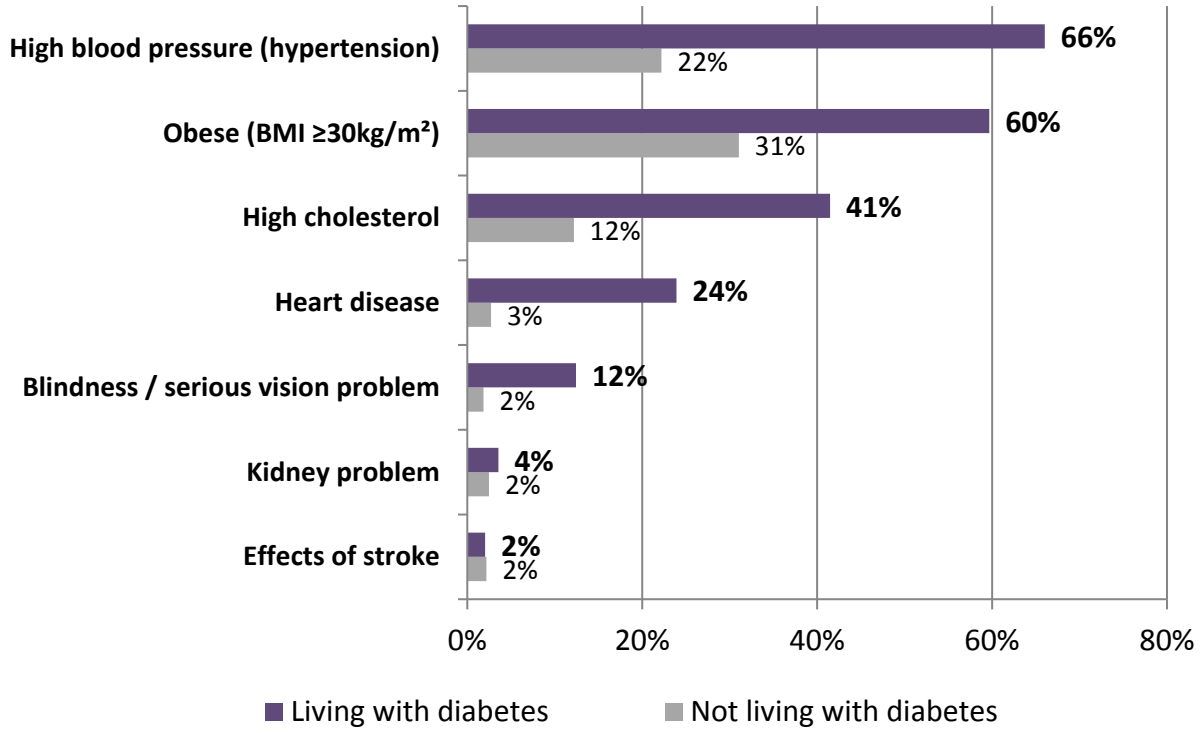
Source : INSPQ, Système intégré de surveillance des maladies chroniques du Québec (SISMACQ).
Production : équipe Surveillance de l'état de santé de la population, DSP de la Montérégie, février

Health conditions associated with diabetes in Kahnawà:ke

Hypertension (high blood pressure), obesity, and high cholesterol very commonly come together for someone living with diabetes, and this is also true in Kahnawà:ke. These associated conditions are important because together they increase the risk of having strokes, heart attacks, angina, congestive heart failure, chronic kidney failure and problems with the retina in the eye leading to blindness. Figure 5 (below) shows how these conditions are much more common for people living with diabetes in Kahnawà:ke based on survey responses.

- 66% of adults living with diabetes reported having high blood pressure, compared to 22% of the adults who do not have diabetes
- 60% of adults living with diabetes reported **obesity**, as opposed to 31% among those not living with the condition
- **High cholesterol** was reported by 41% of adults living with diabetes compared to 12% of non-diabetic adults
- Approximately 24% (1 in 4) of adults with diabetes reported having **heart disease**, whereas this proportion is only at 3% among other adults
- 12% of adults living with diabetes reported having serious **vision problems or blindness** as opposed to 2% in the rest of the adult population

Figure 5. Key Health Conditions Reported by Kahnawa'kehrò:non Adults (20+ years old) According to Diabetes Status (RHS, 2015-2016)



Living at Peace with Diabetes: How well are people living with diabetes managing their blood sugar levels?

The Regional Health Survey showed

- **88% of adults in Kahnawà:ke living with diabetes had been to a clinic to see a doctor or community health nurse at *least once* in the last year**. This attendance rate was confirmed by a 2017 chart review:
    - 55% of these people had gone to see a doctor or community health nurse *specifically* for diabetes education
- This also indicates about 12% of people living with diabetes have *not* seen a doctor or nurse at all in the last year
- **Approximately 45% of adults living with diabetes did not have their hemoglobin A1c measured at all** during a lab test in either 2014[8] and in 2016-17[9]. For these people we cannot have a good idea of whether their blood sugar is under control or not. **This is an alarming finding and we need to take action to improve this.**
- 82% of adults living with diabetes reported doing at least 2 home measurements of their blood sugar levels in the last two weeks. While sometimes health professionals will also use these home numbers to guide treatments, measuring hemoglobin A1c is the gold standard measure to monitor diabetes treatment and we need to find ways to ensure it is completed more frequently

Doctors measure blood sugar levels in two ways:

1) "**Fasting Blood Sugar**" This is the amount of sugar in the blood stream *right now* and is the main test to diagnose diabetes

2) "**Hemoglobin A1c**" This is the percent of red blood cells with sugar "stuck" onto them). **This is the average amount of sugar in the blood over 2-3 months**.
This is the main test to monitor how well treatments are working and should be done at least every 3 months.
The standard target for hemoglobin A1c is to get to at least 7.0% or less, although sometimes the target is tailored according to an individual's overall health conditions

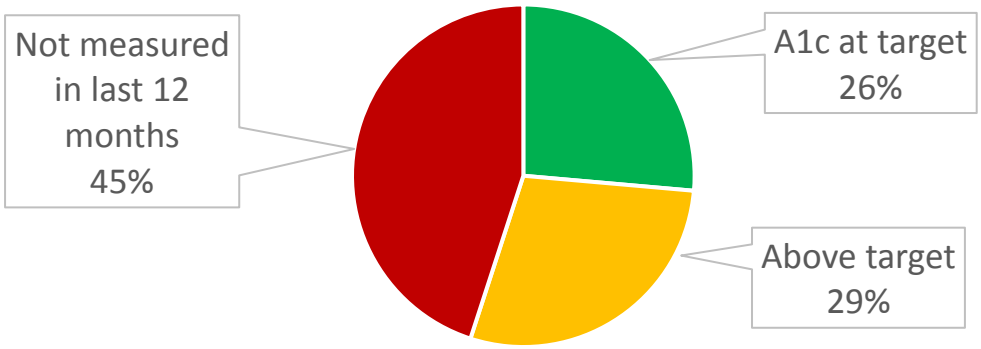
Individuals living with diabetes should be seen by a health care provider at least 3-4 times per year.

We need to understand how to better reach the people who are not coming and ensure they receive appropriate medical

[8] FORGE AHEAD research project, Jan 1-Dec 31, 2014 based on 260 charts reviewed

[9] KMHC quality improvement chart review, Apr 1, 2016 to Mar 31, 2017 based on 41 charts reviewed

Figure 6. Percent of people living with diabetes whose A1c is at target (< 7.0%) at most recent measure



Source: FORGE AHEAD chart review, 2014

For those who *did* have their hemoglobin A1c measured, **it was at the target of 7.0% or less in only about 46% of adults living with diabetes in 2014 (FORGE AHEAD study 2014) and in about 50% of the adults who had their charts reviewed in 2017**. This means about 26% of all people with diabetes or about 215 of the 820 people living with diabetes.

What treatments are people using to control their blood sugar:

Because diabetes is a complex and chronic condition, many different treatments are available and often required in combinations to maintain good blood sugar control. There is a lot of variation between individuals; some can achieve their target blood sugar by changing their diet only, while others may combine diet changes with pills and still others may need multiple pills, regular exercise and injectable medications like insulin.

Among adults (>20y) living with diabetes in Kahnawà:ke:

- **69% report using diet adjustments** as part of their treatment of diabetes
- **44% report using exercise** as part of their treatment for diabetes

- **Between 63%[10] and 92%[11] of adults living with diabetes are taking at least one medication for diabetes.**
- 755 individuals (i.e.: estimated 92% of the approximately 820 adults with diabetes) were *dispensed* at least one medication (pills or insulin) for diabetes from a pharmacy in 2015. It is important to remember that not everyone who picks up a medication from their pharmacist ends up taking it regularly
  - Of these, 352 (47%) were reimbursed for 2 or more different types of diabetes medication
- Men were more commonly dispensed a prescription: 404 men compared to 351 women. This fits with the proportions seen in the prevalence data
- One in five (20%) individuals claiming a diabetes medication via NIHB (Health Canada) had a claim for insulin.
  - This represents a slight increase from 17% in 2011
  - This percentage is slightly lower than seen in other Québec First Nations communities (22% in 2015)
  - This also is consistent with what was measured in FORGE AHEAD where 20% of people living with diabetes had been taking insulin in 2014

[10] Self report on the 2015-2016 Regional Health Survey. Note, because some people are not fully aware of the medications they use, this 63% is likely to be somewhat underestimated.

[11] Extrapolation from number of Health Canada Non-Insured Health Benefit medication claims for diabetes medications (pills and insulin) in 2015 (756 individuals) and Québec Integrated Chronic Disease Surveillance System (820 individuals with diagnosis of diabetes). Note denominator populations for these two statistics are not identical, and not everyone who is dispensed a medication actually takes the medication, so 92% is likely to be somewhat of an over estimate.
2017 Chart review of 41 individuals with diabetes at KMHC showed 76% of people took some form of prescribed medication for diabetes.

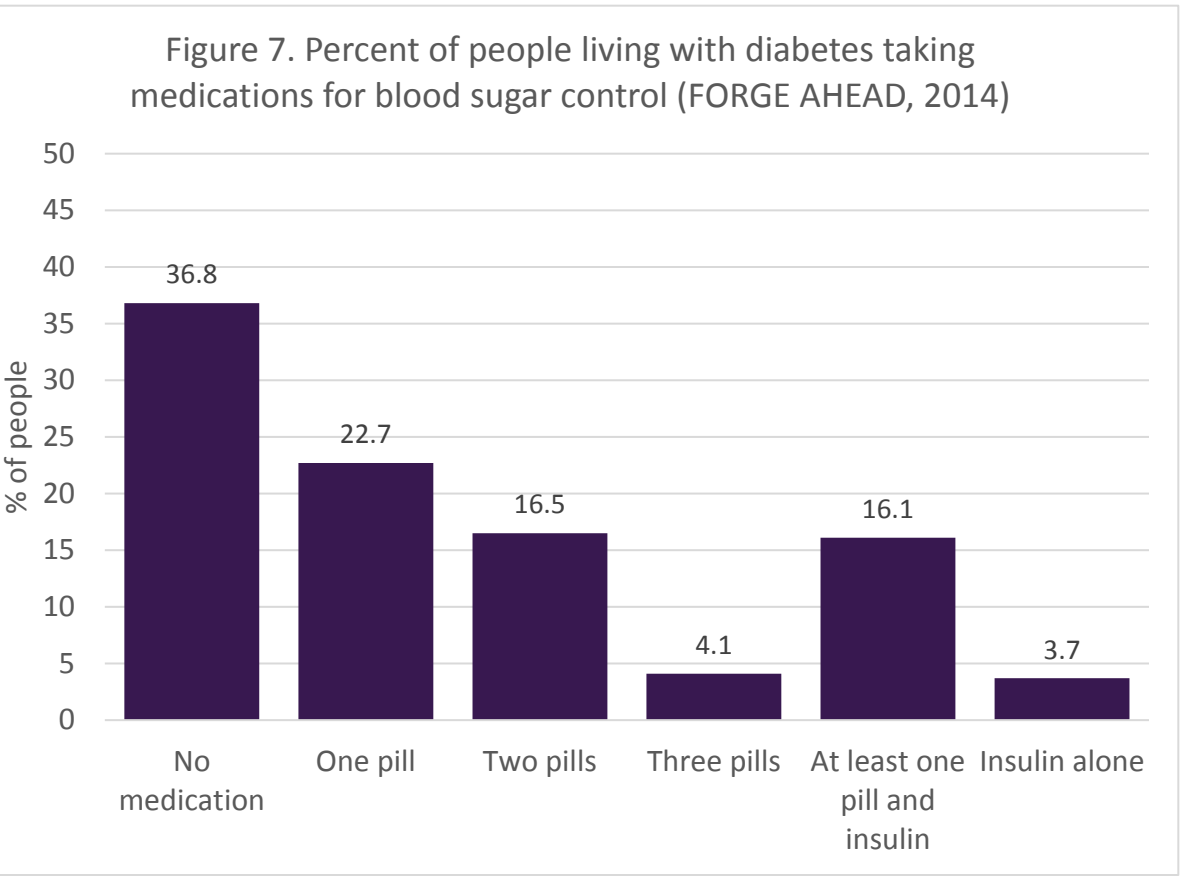


Figure 7. Percent of people living with diabetes taking medications for blood sugar control (FORGE AHEAD, 2014)
% of people
50
45
40
35
30
25
20
15
10
5
0
36.8
22.7
16.5
4.1
16.1
3.7
No medication
One pill
Two pills
Three pills
At least one pill and insulin
Insulin alone

Table 1. Number of people claiming common diabetes medications from Health Canada -NIHB insurance (2015)

Category of medication	Common Name(s)	Distinct claimants
Biguanides	Metformin	668
Sulfonylurea	Diamicron, Glyburide	292
Insulins	Lantus, NPH	180
DPP-4 Inhibitors	Januvia, Trajenta	115
Meglitinides	Repaglinide, Gluconorm	10
Alpha-glucosidase inhibitors	Glucobay	<5
Thiazolidinedione	Avandia, Rosiglitazone	<5

Figure 8. NIHB diabetes medication claimants (≥20 years) with at least one prescription reimbursed for insulin, Registered Kahnawà:ke members, 2011-2015

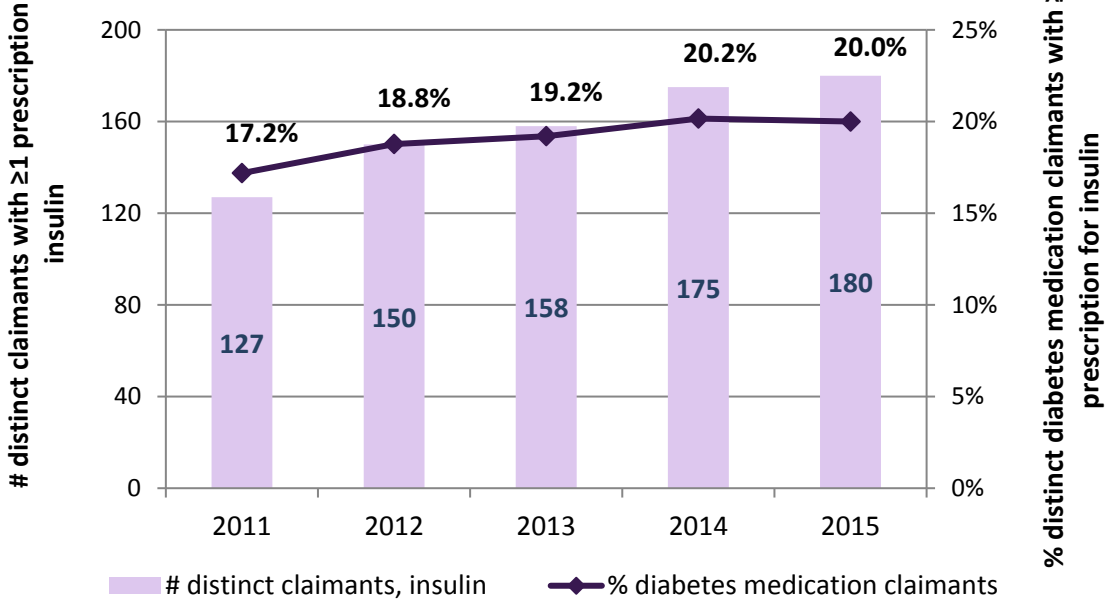
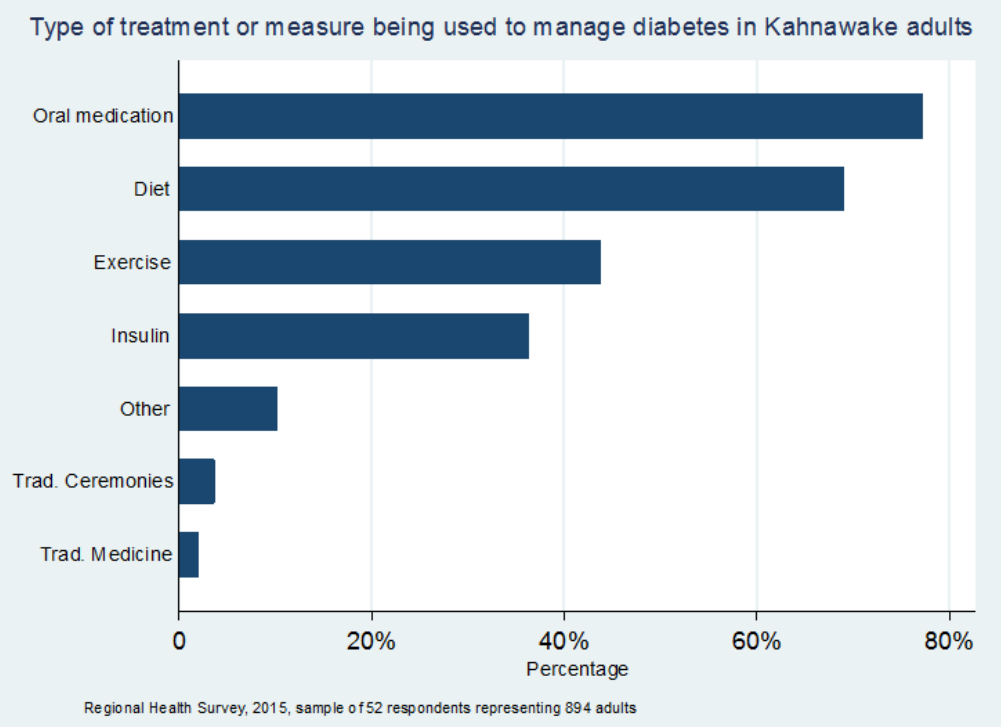


Figure 9.



Physical activity and nutrition-based treatments used by people living with diabetes

While the majority of people living with diabetes use at least one medication, many people living with diabetes also rely on enhancing their physical activity, achieving balance in their eating habits and finding ways to reduce stress levels in order to manage their blood sugar levels. These are natural and medically recommended ways of taking care of oneself. They also have many other health benefits as well, such as improving heart health and reducing cancer risk.

In Kahnawà:ke**,**

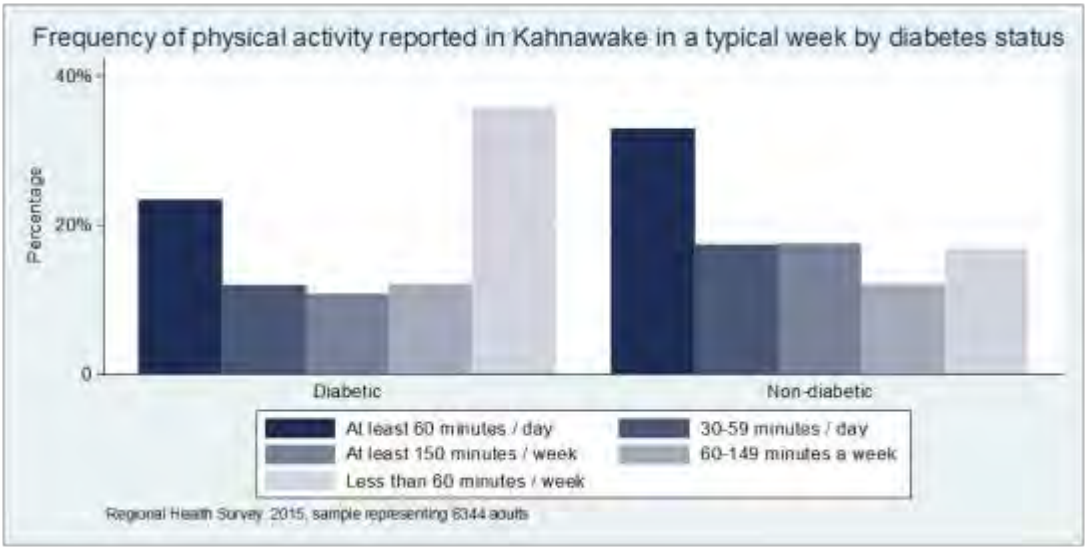
- **69% of adults living with diabetes said they use their diet and nutrition** as a way to help stay in control of this condition
- **44% of adults living with diabetes use exercis**e to control diabetes
- These are the second and third most common treatments people are using to manage diabetes

Although it is wonderful that so many people with diabetes report using healthy choices to take control of this condition, there is still quite a bit of room for improvement.

Large numbers of people who are living with diabetes still are not getting *enough* physical activity compared to people who do not have diabetes. The recommendations for physical activity according to the Canadian Diabetes Guidelines are 150 minutes of moderate to vigorous intensity aerobic exercise per week spread over at least 3 days with no more than 2 consecutive days without exercise[12]. **Despite 44% of individuals living with diabetes reporting using physical activity as a therapy for this condition, only about 25% of people living with diabetes get at least 150 minutes per week Further, 35% of those living with diabetes said they get less than 60 minutes of physical activity per week, contrasted to** only 15% of non-diabetic adults.

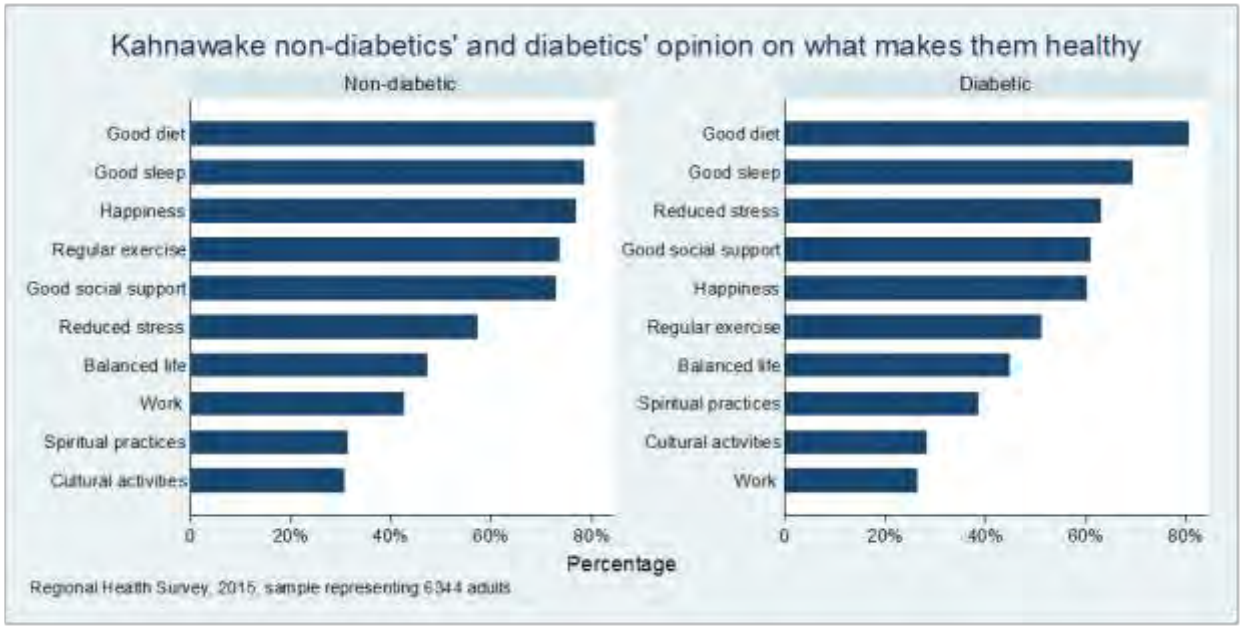
There is also an important difference in ***perception*** of the importance of physical activity. The Regional Health Survey responses showed that **74% of adults who did not have diabetes considered physical activity as an important factor for good health whereas only 50% of people living with diabetes shared that opinion** (see Figure 11)**.**

Figure 10.



[12]http://guidelines.diabetes.ca/browse/chapter10

Figure 11.



Going forward, we need to look at where we can help further enhance the proportion of people living with diabetes who are able to incorporate healthier diets and physical activity adjustments into their lives. There is never just one reason that prevents so many people from incorporating these changes. Improving healthy eating habits and physical activity on a population level requires a multipronged approach to be as effective as possible.

Some suggestions on ways to do this are made in the Areas of Action at the end of this document.

High blood pressure in people living with diabetes:

Making sure blood pressure is well controlled helps reduce the risk of developing heart disease, kidney failure, and strokes. This is especially important for people living with diabetes since they are already at higher risk of these conditions, and because high blood pressure very commonly comes along with diabetes. **In fact, two thirds (66%) of people living with diabetes reported having also been diagnosed with high blood pressure on the Regional Health Survey.**

When looking at medication claims, **about 79% of adults who have claimed medication for diabetes also claimed medication that is normally used for blood pressure**. Chart review at KMHC showed about 74% of people living with diabetes have also been prescribed at least one medication for blood pressure.

According to chart review in the FORGE AHEAD study in 2014, despite the medications people are taking, **only a quarter of adults living with diabetes (24.4%) had their blood pressure at target levels (<130/80). This had improved and was closer to 60% in a smaller 2017 chart review**. At the same time, 24% did not have their blood pressure well controlled and 15% had not had their blood pressure measured at all in the last year.

Almost all people can achieve good blood pressure control, but some people need more than one medication to help them, alongside a healthy balanced diet and physical activity.

Helping more people with diabetes may require changing the ways health care workers reach people, enhancing multidisciplinary team care and better helping people living with diabetes understand why blood pressure is important for them. Interventions suggested in Areas for Action to enhance physical activity and optimal nutrition would also help improve blood pressure control.

A particular class of blood pressure medications (called **ACE-Inhibitors or ARBs) are specifically recommended as first line treatment** for anyone living with diabetes since these have been shown to have additional protection against complications.

Here there is more room for improvement - **only about 24% of people who are living with diabetes are also taking an ACE-I or an ARB class medication for their blood pressure**. Many more are taking a different type of medication that is a second or third line treatment for blood pressure.

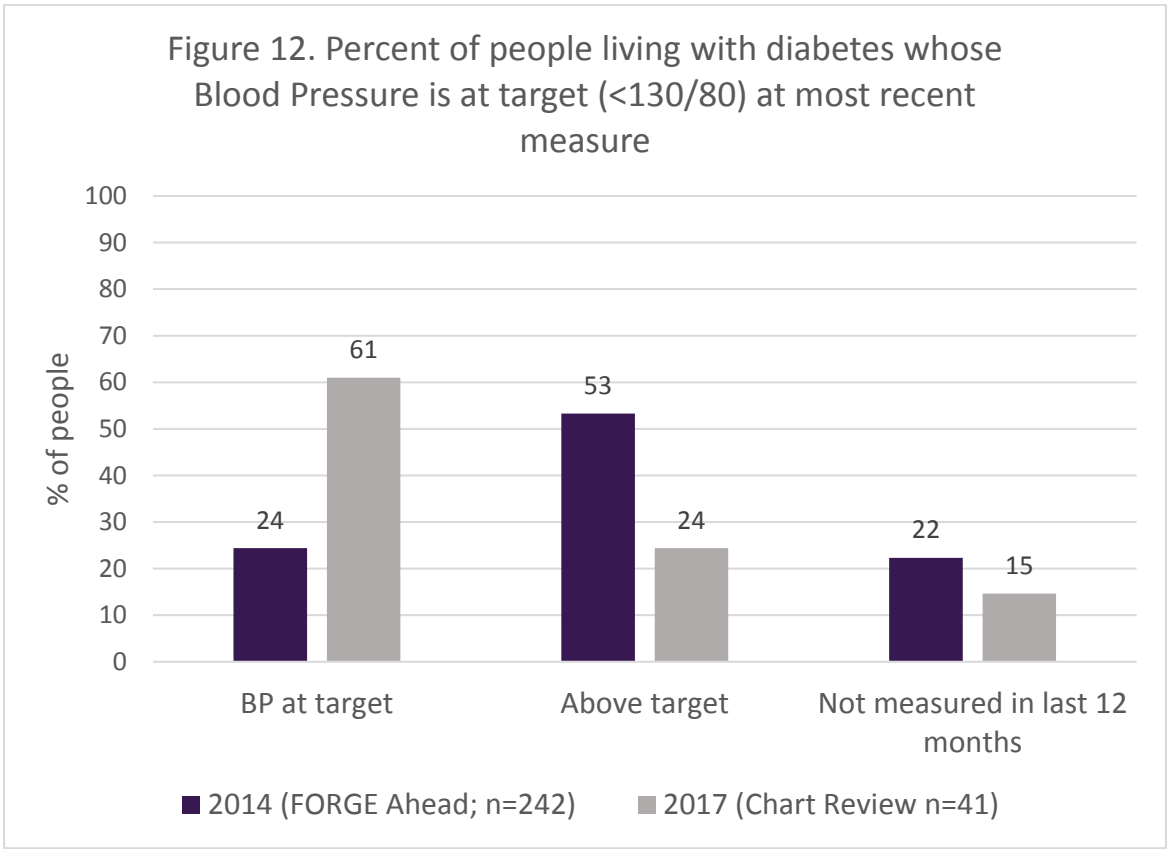


Figure 12. Percent of people living with diabetes whose Blood Pressure is at target (<130/80) at most recent measure
100
90
80
70
60
50
40
30
20
10
0
% of people
24
61
53
24
22
15
BP at target
Above target
Not measured in last 12 months
2014 (FORGE Ahead; n=242)
2017 (Chart Review n=41)

High cholesterol in people living with diabetes:

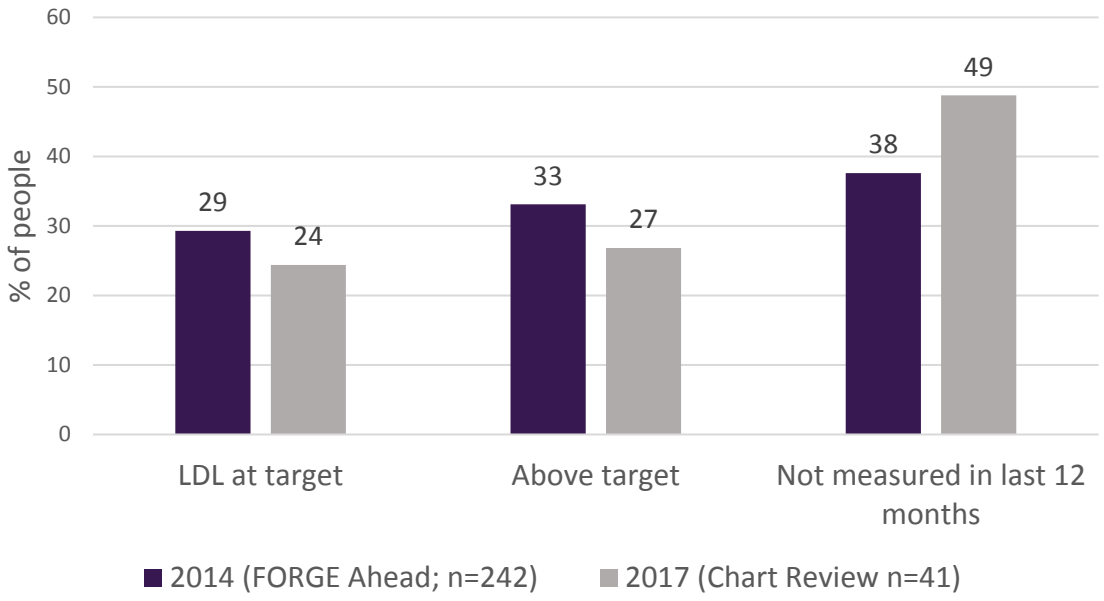
Another important risk factor for strokes, heart and kidney disease is blood cholesterol levels. Because people living with diabetes already have very high risk of these conditions due to their blood sugar levels, it is especially important for them to also reduce their cholesterol. **In fact, it is recommended that almost all adults living with diabetes take cholesterol-lowering medication**[13], with the goal to reduce LDL-cholesterol (a.k.a. the "bad" cholesterol). The target level is for the LDL-cholesterol to be 2.0 mmol/L or less. In order to know if this target is being reached and staying stable, it is also important to measure cholesterol levels by lab blood tests, usually at least yearly.

In 2014, the FORGE AHEAD study showed that only 29.3% of diabetic adults had recent cholesterol tests showing LDL levels at or below the target. At the same time, **over one third (37.6%) of patients living with diabetes had not been tested for cholesterol levels in the past year**.
In 2017 a chart review at KMHC showed similar results – 24.4% of adults with diabetes had LDL cholesterol levels at or below target, while **48.8% of people had not had their cholesterol measured in the last 12 months**. Just like we saw for blood pressure and blood sugar control, this reinforces the message that adjustments are needed to the ways health care workers reach people to deliver care and ensure consistency in care delivery. It also indicates that individuals living with diabetes may need help to better understand what they need to do to take care of themselves.

Finding ways to increase physical activity and improve nutrition on an individual and on a community level are also important ways cholesterol can be better controlled.

[13] Canadian Diabetes Association Clinical Practice Guidelines Expert Committee. Canadian Diabetes Association 2013 Clinical Practice Guidelines for the Prevention and Management of Diabetes in Canada. Can J Diabetes 2013;37(suppl 1):S1-S212. http://guidelines.diabetes.ca/

Figure 13. Percent of people living with diabetes whose LDL Cholesterol is at target (<2.0) at most recent measure



Prevention of complications from diabetes:

It is important to remember that diabetes is a chronic condition. Over many years, chronically high blood sugar levels can cause damage to nerves, the kidneys, and the eyes and can also increase the likelihood of several types of infections. Because of this, in addition to controlling blood sugar, blood pressure and cholesterol, there are many other medical *prevention* techniques that are recommended for anyone who has diabetes, specifically: receiving a pneumonia vaccination at least once, having a yearly foot exam, a yearly diabetes-specific eye exam and kidney function testing.

In Table 2, data from the FORGE AHEAD study (2014) and KMHC chart review (2017) for Kahnawà:ke adults with diabetes show that **there is significant room for improvement in how often people receive these interventions**. Standardizing diabetes care with checklists and tools like electronic medical records and with team-based care would help improve how often these measures are completed. A reasonable target could be to aim for a 20% increase in each of these measures within the next 2 years.

Table 2: Percent of time preventive care is given to patients living with diabetes, 2014 & 2017 chart review.

Diabetes Prevention Checklist	How often done
☑ **Pneumonia vaccine**	29%
☑ **Influenza vaccine every year**	22%
☑ **Diabetes eye exam every year**	24%-29%
☑ **Foot exam (monofilament) every year**	0%-7%
☑ **Kidney test (blood and urine) every year**	63-72%

Gestational Diabetes:

Gestational diabetes mellitus (GDM) is a temporary form of diabetes that happens during pregnancy and gets better after the pregnancy is over. It is important to control blood sugar levels during pregnancy to prevent problems for the mother and the baby. Women that develop GDM are more likely to have deliveries complicated by C-section and shoulder dystocia (the baby's shoulder getting stuck during birth and causing distress). The babies are at higher risk of neonatal jaundice, being born prematurely or being very large for their gestational age. In most cases, blood sugar levels can be controlled by diet during pregnancy, but some women will also need medication.

Women who have had gestational diabetes during any of their pregnancies are at higher risk of one day developing Type 2 diabetes

Babies born to mothers with GDM are also more likely to one day develop Type 2 diabetes themselves

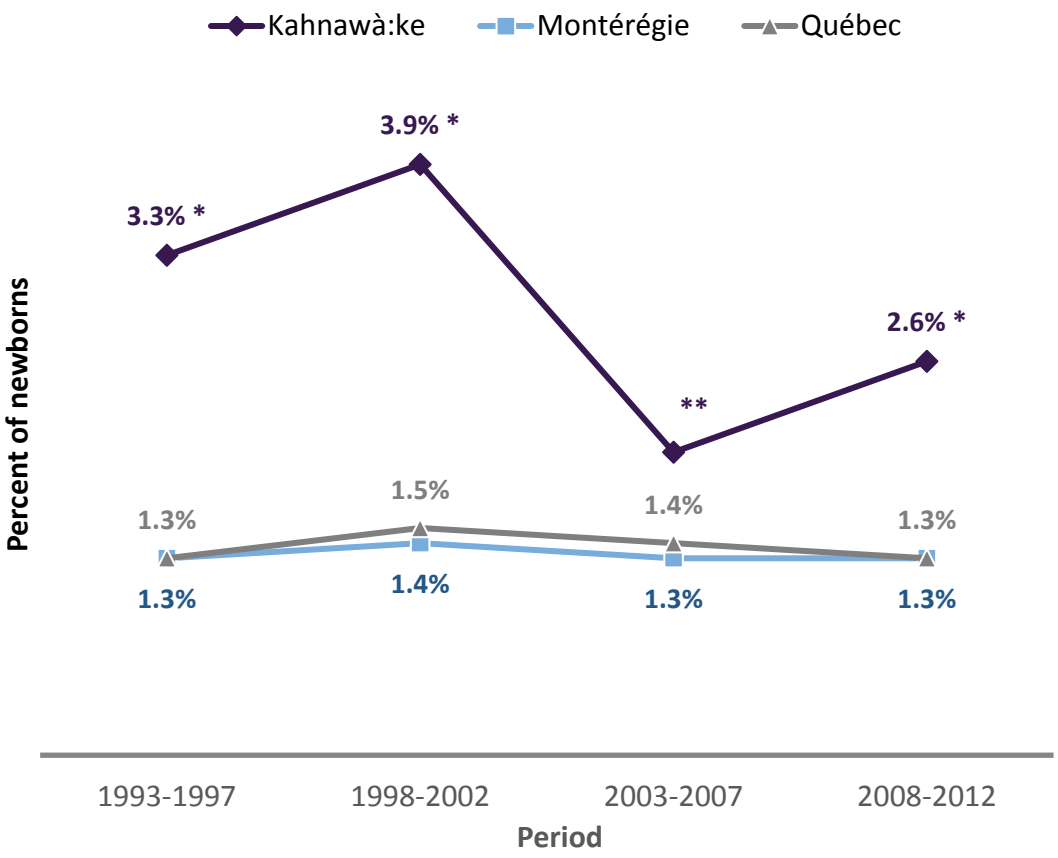
In Québec, the percent of babies born to women diagnosed with gestational diabetes increased from 2.5% to 7.6% between 1989 and 2012, with similar increases seen in other provinces.[14] In general, indigenous women in Canada have higher rates of GDM compared to non-indigenous women.

In 2017, KMHC's community health unit noted 10 women diagnosed with gestational diabetes out of 91 expecting mothers (10.9% of pregnancies). In the 2015 regional health survey women were asked about diabetes during pregnancy but numbers of respondents in this area were too small to give an accurate portrait. We do not have long-term trends on gestational diabetes and need to work to find better ways to monitor how common this is in Kahnawà:ke.

The graph on the following page (Figure 14) shows the proportion of babies large for their age at birth (i.e.: number of weeks of pregnancy when they are born) in Kahnawà:ke compared to the Montérégie region and the province of Québec. It is somewhat higher in Kahnawà:ke through all of the time periods, and this is likely related to a higher rate of gestational diabetes during pregnancy.

[14] [14] Évolution du diabète gestationnel au Québec de 1989 à 2012. INSPQ https://www.inspq.qc.ca/sites/default/files/publications/2275_evol_diabete_gestationnel.pdf

Figure 14. Proportion of newborns of large birthweight (>4 500 g), Kahnawà:ke, Montérégie and Québec, 1993-1997 to 2008-2012



* Coefficient of variation greater than 16,7 % and lower or egal than 33,3 %. The result must be interpreted with care.
** Coefficient of variation greater than 33,3 %. The result is not shown.
Source : MSSS, Fichier des naissances.

Screening tests for early detection of Diabetes

Sometimes people are diagnosed with diabetes because they have very advanced symptoms and complications, such as a bone infection (osteomyelitis) or a heart attack, or lose consciousness from dangerously high sugar levels, **but most of the time Type 2 diabetes is found *much earlier* using screening tests**. At this point, people are not experiencing any outward symptoms of diabetes. **Screening people for diabetes allows for early treatment and prevention of avoidable complications.**

The most common way to screen someone is by doing a Fasting Blood Sugar Test. Other tests that can be used include:

- Hemoglobin A1c (an "average" of the blood sugar over 3 months). Some other advantages of this test is that it does not require fasting and is relatively inexpensive
- An oral glucose tolerance test (testing your blood sugar after a "challenge" with a glass of sugary juice). This test is often used in pregnancy or to clarify a borderline result. It is a gold standard but requires much more time so is not always practical as a first screening test

In general, any First Nations person over the age of 40 should be screened between once yearly to every 2 years for Type 2 diabetes. This screening should be done earlier in life and more frequently if the person has other risk factors like family history or high blood pressure.[15]

- **In 2015, 62.9% of surveyed Kahnawa'kehrò:non adults aged 40 years and older reported having done a blood sugar test in the last 12 months**

How can we maximize screening and early detection of diabetes in Kahnawà:ke?
There are several evidence-based strategies for increasing screening rates for diabetes, some of which have been tried at various points in Kahnawà:ke:

- Reminder systems for individuals and for clinical staff (ie: this patient is due for a screening test – this is often facilitated with electronic medical records)
- Special protocols that allow nurses to initiate screening without having to necessarily see a doctor
- Audit and feedback to medical teams
- Screening events done outside of clinic – eg: at workplaces and special events
- Population awareness in mass media (radio, tv, posters), social media (Facebook, Twitter), and coordinated communications
- Accessible lab hours and testing methods

[15]http://guidelines.diabetes.ca/executivesummary/ch38

Diabetes in Kahnawà:ke beyond tomorrow:

Prevention and risk factors in the community

Reducing the number of people developing diabetes is a very important and long-term way of reducing the impacts of this condition on the community and community members. Ideally, we would like to see the diabetes incidence rate seen in Figure 1 earlier in this report (page 18) go further and further down over time, so that the gap between Kahnawà:ke and Montérégie eventually disappears.

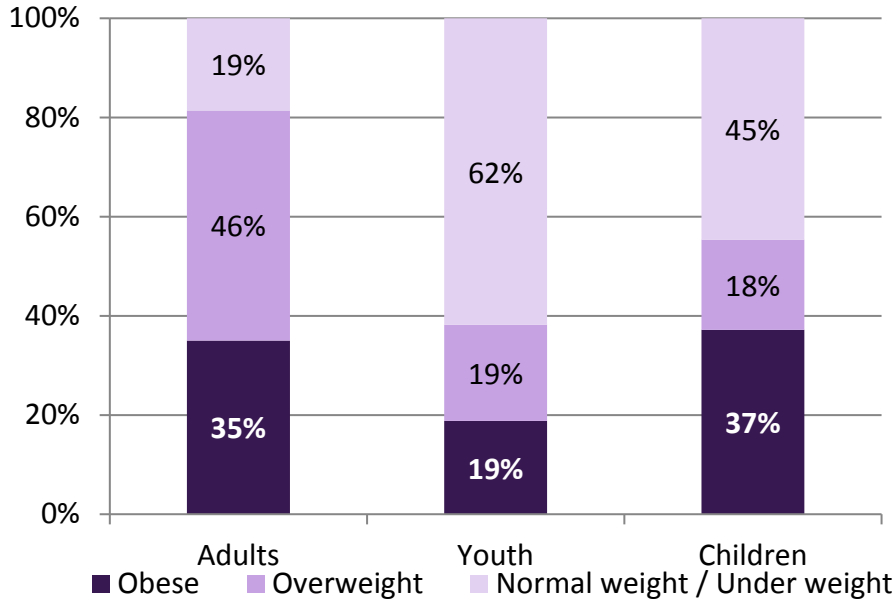
In order to make this vision a reality it is critical to make sure the physical environment, policies and social circumstances of the community help to prevent new people from developing diabetes. This section of the report highlights some individual risk factors and protective factors related to Type 2 diabetes, but it is important to remember that these individual risk factors are strongly related to community-level social determinants of health, such as food security, employment opportunities, mental wellness, poverty/financial well-being, community infrastructure, and history of colonization/connection to traditional ways and culture.

Excess body weight and obesity

Obesity and excess body weight are defined by body mass index (BMI). Although it is not a perfect measure, BMI's greater than 26 (overweight) and 30 (obese) increase the risk of developing type 2 diabetes.

- **The majority of Kahnawa'kehrò:non adults and children report being overweight or obese**
- Adult obesity is higher than Montérégie (35% vs. 20%); child obesity is higher than other Québec First Nations in 2008 (37% vs. 17%)
- **81% of adults (18+ years old) reported a height and weight putting them in the overweight or obese categories**
- 55% of children (0-11 years old) were also reported to be overweight or obese
- Obesity rates were 40% for women and 30% for men

Figure 15. Self-reported Body Mass Index for adults, youth and children in Kahnawà:ke (RHS 2015)



Categories are based on body mass index (kg/m^2). Cut-offs for BMI categories for youth and children use IOTF standard. Adults = 18 years or older, youth = 12-17 years, children = 0-11 years.

Fruit and Vegetable Consumption

Healthy eating is a very important factor in preventing diabetes and a first line treatment to help people living with diabetes better control their blood sugar level. There are different ways to have healthy diets and these can reflect the variety in individual tastes, family traditions and community culture, as well as local availability.

In general, healthy diet means:

- High proportions of vegetables and fruits
- Moderate protein intake (e.g. meat, fish, lentils, beans)
- Limited amounts of direct sugar (e.g.; sodas, juices, candies, desserts, maple syrup, honey)
- Limited amounts of refined carbohydrates and starches (e.g.; white breads, crackers, potatoes, white rice)
- Limited total calories (energy intake)

Looking at the amount of vegetables and fruits people eat per day is a rough indicator of how healthy diets are.
As we can see from the next two graphs (Figure 16 and Figure 17),

Kahnawa'kehrò:non consume higher amounts of vegetables and fruits than other First Nations people in Québec did in 2008.

Approximately 2 out of 3 Kahnawa'kehrò:non eat at least one vegetable per day

9 out of 10 children in Kahnawà:ke eat at least one fruit per day

Even so, close to 1 out of 3 Kahnawa'kehrò:non still eat vegetables less than once per day. Prevention efforts could aim to increase the percent of people who eat vegetables twice a day or more by at least 5% by the time the survey is repeated.

This could be achieved through efforts to make these foods more affordable and accessible, particularly for those who are underemployed, and by ensuring vegetables are included in organizational meals and community events, or enhancing understanding of traditional vegetable uses and growing techniques.

Figure 16. Frequency of Vegetable Consumption in Kahnawà:ke (2015) and other First Nations in Québec (2008)

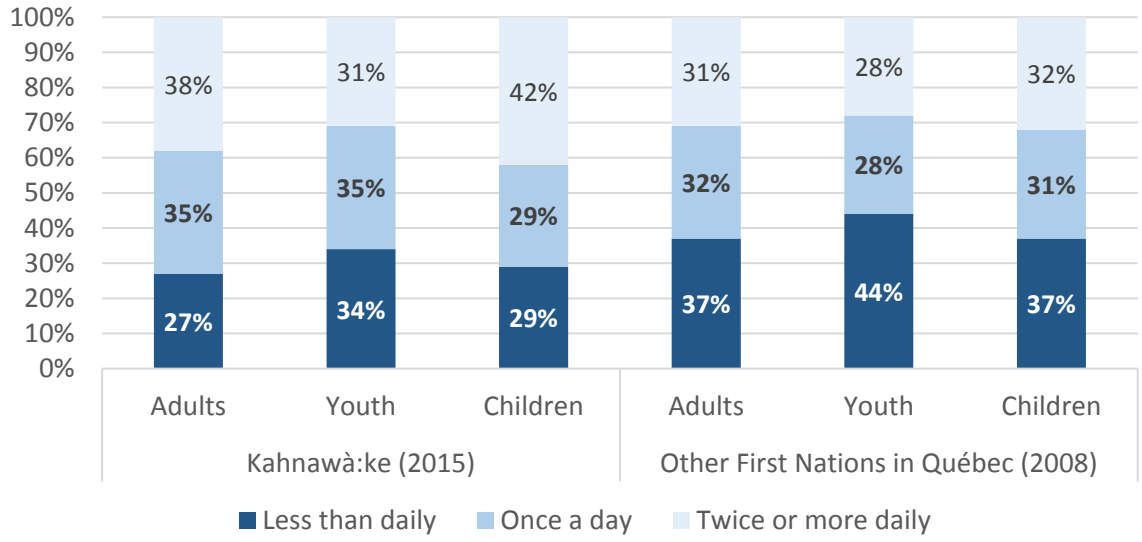
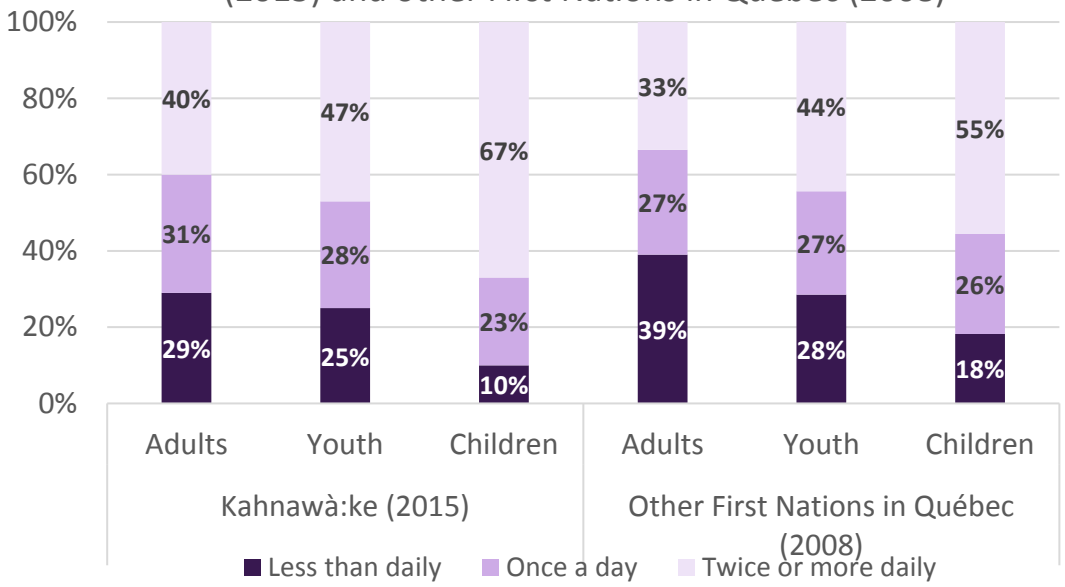


Figure 17. Frequency of Fruit Consumption, Kahnawà:ke (2015) and other First Nations in Québec (2008)



Physical activity

Current guidelines for physical activity levels recommend *at least* 150 minutes (2.5 hours) of moderate-intensity aerobic activity per week for adults[16].

In Kahnawà:ke :

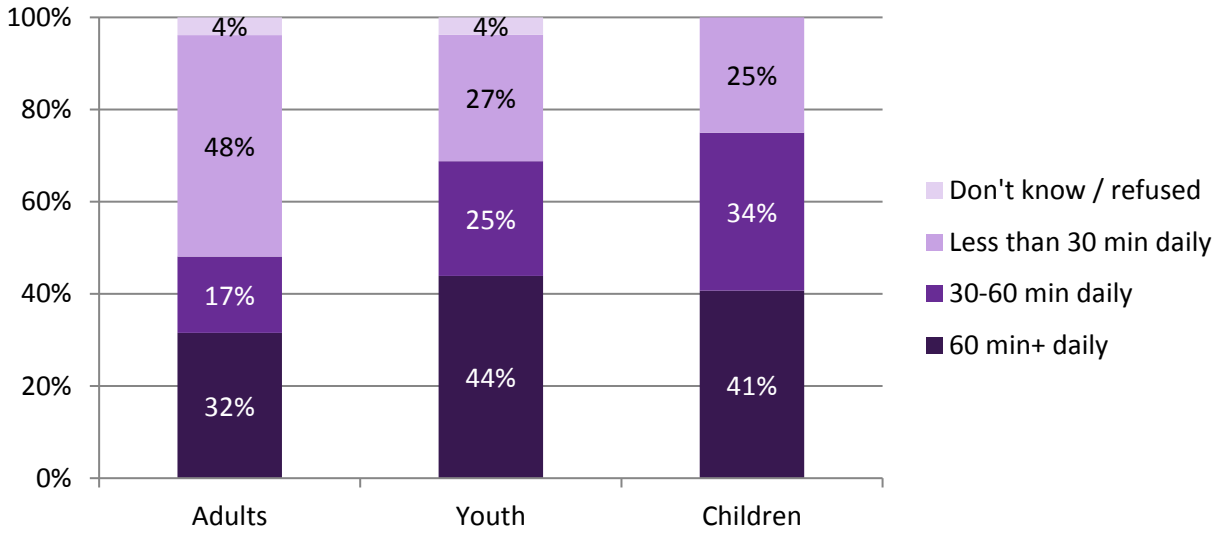
- **about 63% of adult women and 66% of adult men report achieving these minimum weekly recommendations**
- Less than half (49%) of adults reported engaging in *at least* 30 minutes of physical activity a day
- 32% of adults said they get 60 minutes (1 hour) or more of physical activity per day. This was 39% among men and 25% among women

For children and youth aged 6 to 17 years, at least an hour of physical activity each day is recommended[17].

In Kahnawà:ke:

- 44% of children and youths aged 6-17 get this much activity

Figure 18. Frequency of Physical Activity Reported in Kahnawà:ke



[16] Center for Disease Control and Prevention [Internet] Atlanta: US Department of Health and Human Services; How much physical activity do adults need? [updated 2015 June 4; cited 2016 Dec. 13]: Available from: https://www.cdc.gov/physicalactivity/basics/adults/index.htm

[17] Center for Disease Control and Prevention [Internet] Atlanta: US Department of Health and Human Services; Youth Physical Activity Guidelines [updated 2017 June 28; cited 2016 Dec. 13]: Available from: https://www.cdc.gov/healthyschools/physicalactivity/guidelines.htm

Other potential risk factors for diabetes

Screen Time

For young children, screen time could potentially have positive *or* negative impacts on physical health depending on the type of content viewed and the context. In a more active setting, where the programming is activity-based and encourages children to move, this type of media can sometimes increase physical activity. Some studies have shown, however, that more screen time might lead to increased risk of obesity and diabetes, risk which could persist later in life, perhaps because it establishes a routine for sedentary activities. Current recommendations for children and youth 5-11 years old is to have less than 2 hours of screen time per day, and for children 2 to 4 years old to have less than one hour of recreational screen time per day. Screen time is not recommended for children younger than 2 years. [18]

In Kahnawà:ke, in 2015,

- 48% of children 5-11 years have more than 2 hours of screen time per day
  - Average screen time per day is 3.5 hour
- 71% of youth 12-17 years have more than 2 hours of screen time per day
  - Average amount of screen time per day is 5.1 hours
- 86 % of children 2-4 years old have more than 1 hours of screen time per day

Sleep Deficit

There is some evidence that not getting enough sleep can increase the risk of developing diabetes. For children and youth 5-13 years old, it is currently recommended they get between 9-11 hours of uninterrupted sleep [19]

In Kahnawà:ke, in 2015

- 79% of children 5-11 years got at least 9 hours of sleep per day
- 21% of children 5-11 years got on average less than 9 hours of sleep per day.

This question was not asked to youth 12 or older or to adults on the RHS.

[18]Canadian Paediatric Society (2107) Screen time and young children: Promoting health and development in a digital world. Paediatr Child Health 2017;22(8):461–468; [Cited 2018 Jan 03] Available from: https://www.cps.ca/en/documents/position/screen-time-and-young-children

[19] Canadian Society for Exercise Physiology (2016) Canadian 24-hour Movement Guidelines for Children and Youth [cited 2017 Dec 15] Available from: http://www.csep.ca/view.asp?x=696

Areas for Action Regarding Diabetes and Diabetes Prevention in Kahnawà:ke

This health portrait clearly shows how important diabetes and diabetes prevention should continue to be for Kahnawa'kehró:non.

This chapter highlights some key areas where improvements in treatment, screening and prevention of diabetes can be made. Knowing today's measures gives the opportunity to create realistic and achievable targets for change in the short and long-term. Community organizations and community groups should use this information to plan, prioritize and adapt programs and services. This information could also be used to develop funding requests for new programs at national, regional or local levels.

In the long-term, prevention efforts need to work from multiple angles at the same time, as improving nutrition and physical activity is complex and linked to habits, social environment, food security, and physical infrastructure. Many community organizations have already been working on these issues, but there is still room to improve. Some interventions that have been shown to work well elsewhere include[20]:

- Creating policies that favor the use of balanced food options at community organizations and events (e.g.: school breakfast programs, organization sponsored lunches)

- Modifying the built environment to help people of all abilities find places for physical activity adapted to their needs (e.g.: improvements to bicycle trails, the addition of the splash pad in town, having sidewalks that are cleared in winter), and to feel safe while doing so (e.g.; adequately lit areas, adequate leashing of large dogs, road traffic that is not too fast, green spaces free from garbage)

- Land-use policies that enable reasonable access to recreational park spaces through well-connected streets, sidewalks on new roads, mixed land-use so there are walkable destinations for people

- Enhancing community member access to existing physical activity infrastructure (e.g. youth center, arena, parks, trails). This could be done by subsidizing memberships, particularly for those receiving social assistance. It is also important to make sure it is

[20] The Community Guide. https://www.thecommunityguide.org

available to use at the times of day most accessible to community members (e.g.: after school hours, during school holidays)

- Empowering people & community groups by sharing knowledge and opportunities (e.g.: offering activity lessons, connecting with gardening and traditional land-based activities, creating support groups focused on physical activity promotion and nutrition for those at risk of developing diabetes)

- Subsidizing healthier food choices (e.g. fruit and vegetables, traditional foods), ensuring these foods are more prominently marketed in retail areas, offering taste tests of healthy menus or healthy retail options

- Audit and feedback of clinical practices in diabetes care for health care providers

- Automated reminder systems for patients and health care providers

- Team-based care for patients living with diabetes (e.g.: doctor, pharmacist, nurse, nutritionist and systematic tools)

Chapter 2:

Cancer & Cancer Prevention in Kahnawà:ke

Chapter 2 Cancer and Cancer Prevention- Summary of Key Points:

- **General rates of new cancer diagnoses in Kahnawà:ke are very similar to those in Montérégie and Québec**
    - Although it is very reassuring that cancers are not higher in Kahnawà:ke than elsewhere, it is important to remember that across Québec, Canada and the world, they remain one of the leading causes of death and illness, so should remain a priority for the community
- As seen in the general populations of Québec and Canada, prostate cancer, breast cancer, colon cancer and lung cancer are the most common new cancers in Kahnawà:ke
    - Kahnawà:ke has similar or lower rates of new diagnoses of breast cancer, prostate cancer and lung cancer than Montérégie and Québec
    - For colon cancer, Kahnawà:ke has somewhat higher rates of new diagnoses. This is trending down over time, but still higher than Montérégie and Québec. This is important as colon cancer has good screening tests to find it early and very good prognosis if treated early
    - Survey results indicate that only 57% of people eligible for colon cancer screening tests have had at least one screening
- Breast cancer screening: 79% of women for whom screening mammography is recommended have had it in the last 2 years
    - This compares to 64.7% in Québec in 2016 and 66.8% in Montérégie in 2016, and it is above the provincial program target of 70%[21]
    - This is an excellent result and speaks well of local awareness and accessibility, but also shows there is still room to grow as we move forward
- Cervical cancer screening: 78% of women in Kahnawà:ke for whom screening pap tests are recommended (aged 25-69 years) have had this test done in the last 3 years
    - In comparison, in 2012, 79.7% of target age women in Canada reported having had at least one PAP smear test in the past 3 years[22]
- Cancer prevention:
    - Only about 15% of people 12 and older in Kahnawà:ke now currently smoke, while 40% are former smokers, and 44% have never smoked at all
    - Even so, rates of second hand smoke exposure in homes and in vehicles are higher in Kahnawà:ke than in the surrounding region:
        - 9.7% of non-smokers aged 12 and older are regularly exposed to second-hand smoke in their homes (vs 6.9% in Montérégie)
        - 20% of non-smokers aged 12 and older are regularly exposed to second-hand smoke in vehicles (vs 5.8% in Montérégie)

[21] https://www.inspq.qc.ca/sites/default/files/documents/pqdcs/tableaubordpqdcs.pdf
http://extranet.santemonteregie.qc.ca/userfiles/file/sante-publique/promotion-prevention/PQDCS-Infolettre-volume-10.pdf
[22] https://infobase.phac-aspc.gc.ca/ccdi-imcc/

Introduction:

Together, cancers are among the leading causes of death & illness across the world, with approximately 14 million new cases in 2012 and 8.8 million deaths in 2015[23,24]. Cancers can be very difficult to deal with for the individuals affected as well as for their families and loved ones. Such effects can even be felt across entire communities. Cancers may also feel like a terrible menace to people who are worried they are at risk.

Although cancer is often thought of as a single terrible disease that can attack different parts of the body, it is important to remember that cancer is not just one disease, but a group of diseases with different underlying processes many of which are still unknown but which attack the body in a similar way:

- Most cancers have multiple causes with many different factors contributing a little bit over many years:
  - Around one third of deaths from cancer are due to the 5 leading behavioral and dietary risks: high body mass index, low fruit and vegetable intake, lack of physical activity, tobacco use, and alcohol use
  - Tobacco use is the most important risk factor for cancer and is responsible for approximately 22% of cancer deaths[25]
- Some cancers are predominantly genetic:
  - e.g.: BRCA1 & BRCA2 breast cancers
- Some are predominantly a consequence of specific infectious diseases
  - e.g.: cervical cancer and human papilloma virus (HPV), liver carcinoma and hepatitis C virus (HCV), Kaposi's sarcoma and human immunodeficiency virus (HIV)
- Some are predominantly consequences of specific environmental exposures:
  - e.g.: lung cancer and cigarette smoking, mesothelioma and asbestos, testicular cancer and chimney soot, skin cancers and sun exposure

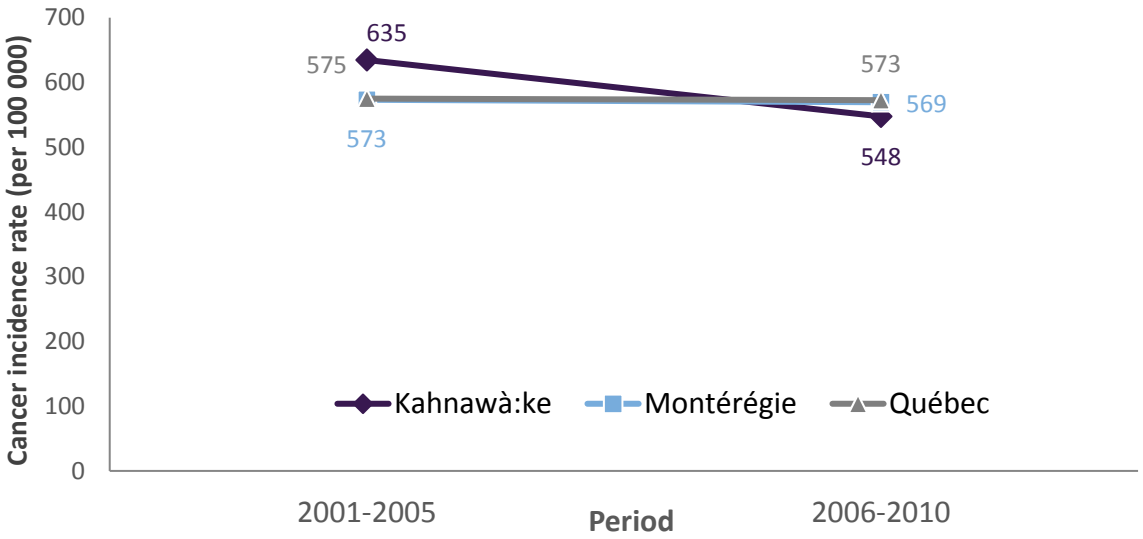
In addition to the diversity of causes, there is also diversity in the natural course of the disease and the available treatments. Some cancers are very slow growing such as basal cell carcinoma and many prostate cancers, while others can appear, grow and spread rapidly. Some types have had good surgical, chemotherapy and radiation therapies that have been available for many years. Others have little available treatment and a low chance of being cured. Knowing this can help tremendously when we ask ourselves and our communities how we can prevent and deal effectively with cancers.

[23] http://www.who.int/mediacentre/factsheets/fs297/en/
[24] Ferlay J, Soerjomataram I, Ervik M, Dikshit R, Eser S, Mathers C et al. GLOBOCAN 2012 v1.0, Cancer Incidence and Mortality Worldwide: IARC CancerBase No. 11 Lyon, France: International Agency for Research on Cancer; 2013.
[25] GBD 2015 Risk Factors Collaborators. Global, regional, and national comparative risk assessment of 79 behavioural, environmental and occupational, and metabolic risks or clusters of risks, 1990-2015: a systematic analysis for the Global Burden of Disease Study 2015. Lancet. 2016 Oct; 388 (10053):1659-1724.

How common are cancers in Kahnawà:ke?

The graph below shows the rates of new cancer diagnosis (incidence) for Kahnawà:ke, Montérégie and Québec between 2001 and 2010. It is reassuring that the rates of cancer are not higher here than in Montérégie or Québec, but it is important to remember that cancers remain a priority health concern in all of these places. The analysis takes into account the population size and the age distribution of Kahnawà:ke compared to these regions and is based on health care administrative data that is routinely collected via the Québec Cancer Registry. **New cases are reported "per 100,000 population" so the Kahnawà:ke number is projected onto a hypothetically much greater population. In fact, the number of people who had a RAMQ healthcare card associated with a J0L 1B0 postal code was 6,255 in 2014.** In each Montérégie and Québec, there were about 575 new cases per 100,000 people in each 5-year period. In Kahnawà:ke, the overall cancer incidence rate descended from 635 new cases per 100,000 people for the first 5-year period to 548 new cases per 100,000 people in the second period. In absolute numbers, among the approximately 6000 people in Kahnawà:ke, there were 25 new cancer cases between 2001-2005, and 24 between 2006-2010. Keeping this in mind when looking at the graph, it is easy to see how big of an impact the difference of one or two cases of cancer can be in a small population.

Figure 19. Adjusted cancer (all tumour sites[1]) incidence rate, Kahnawà:ke, Montérégie and Québec, 2001-2005 to 2006-2010.



[1] Excluding those of the skin other than melanoma.

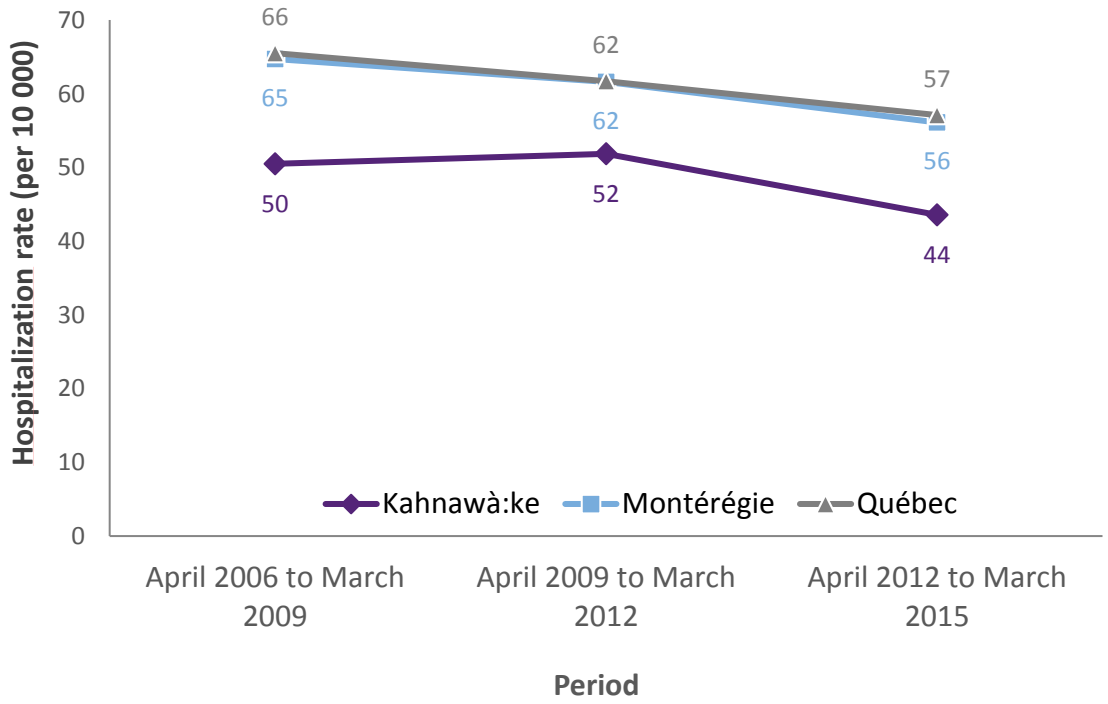
Sources : MSSS, Fichier des tumeurs; Régie de l'assurance maladie du Québec (RAMQ), Fichier d'inscription des personnes assurées (FIPA).

Production : équipe Surveillance de l'état de santé de la population, DSP de la Montérégie, janvier 2017.

Colorectal, lung, breast & prostate cancers were the most commonly diagnosed in Kahnawà:ke with 5 or fewer cases of each in both 2001-2005 and 2006-2010. These are also the most common types of cancer diagnoses in Montérégie and Québec.

The graph below shows the rates of hospitalization for cancers for Kahnawà:ke, Montérégie and Québec between 2006 and 2015. Kahnawà:ke has a lower hospitalization rate than the surrounding regions. There are many possible reasons for this. It may indicate more treatment as an outpatient or at home is available, reflect a better access to primary care, or it could reflect individuals who are reluctant to be hospitalized or seek alternative treatments outside of the medical system.

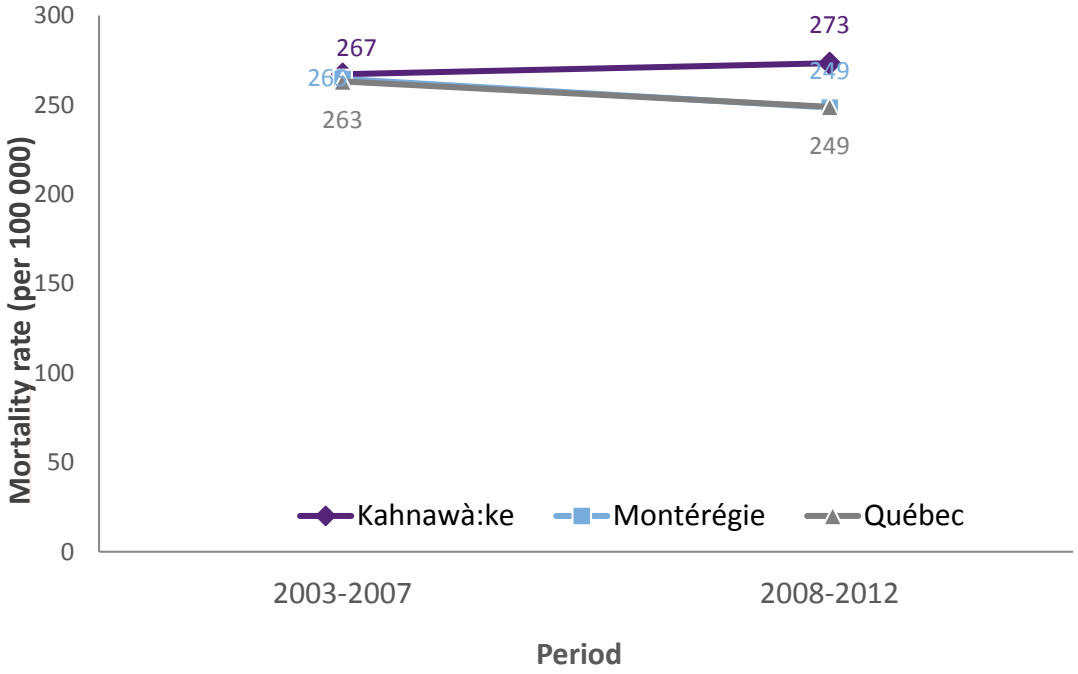
Figure 20. Adjusted hospitalization rate for malignant tumours, Kahnawà:ke, Montérégie and Québec, 2006-2009 to 2012-2015.



Sources : MSSS, MED-ÉCHO; Régie de l'assurance maladie du Québec (RAMQ), Fichier d'inscription des personnes assurées (FIPA).
Production : équipe Surveillance de l'état de santé de la population, DSP de la Montérégie, janvier

The graph below shows the rates of death from cancers for Kahnawà:ke, Montérégie and Québec between 2003 and 2012. **Kahnawà:ke has similar rates of mortality as the surrounding regions, although there is a small trend upwards in the second period**. Because this is based on small total numbers (11 deaths in the first period and 12 in the second), **this may be due only to statistical variation from time to time, and is not a significant difference**. But it might represent a true increase in mortality.

Figure 21. Adjusted mortality rate for malignant tumours, Kahnawà:ke, Montérégie and Québec, 2003-2007 to 2008-2012.

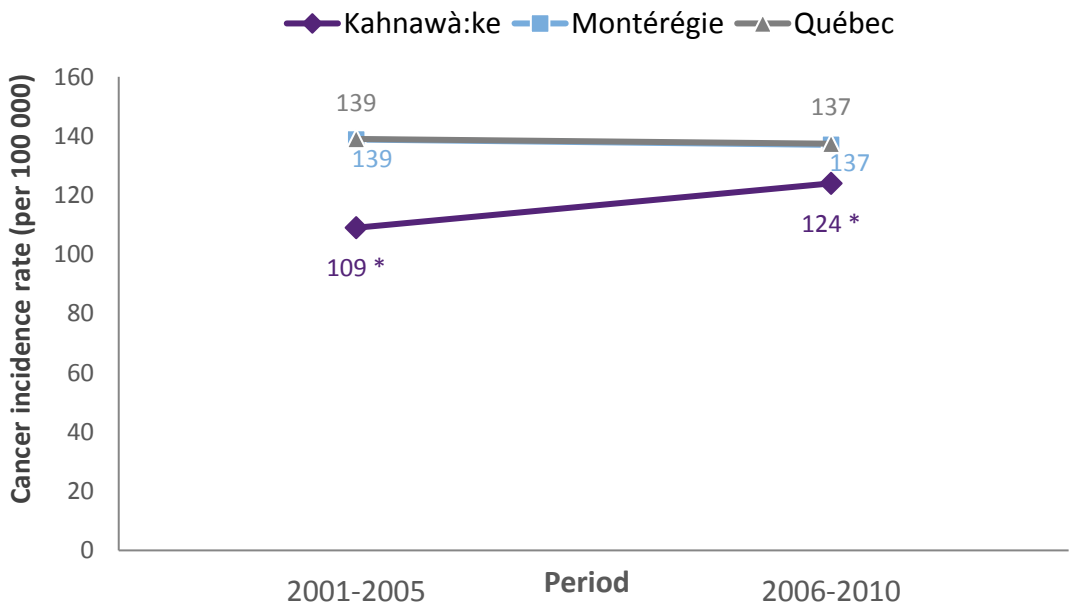


Sources : MSSS, Fichier des décès; Régie de l'assurance maladie du Québec (RAMQ), Fichier d'inscription des personnes assurées (FIPA).
Production : équipe Surveillance de l'état de santé de la population, DSP de la Montérégie, janvier 2017.

Breast Cancer

The graph below shows the rate of new cases of breast cancer in Kahnawà:ke is a little lower than rates for the Montérégie region and the province of Québec. It is important to remember that because this is based on small overall numbers of cases in Kahnawà:ke, the difference of only one or two individuals diagnosed in a 5-year window can cause a notable change to the incidence rate (see *). It is not clear if the trend upwards in the two time periods shown is a true increase or due to expected random variation year to year, **but it is reassuring that the local rates are clearly not higher than the surrounding region or the province**.

Figure 22. Adjusted breast cancer incidence rate, per 100,000 women; Kahnawà:ke, Montérégie and Québec, 2001-2005 to 2006-2010.



* Coefficient of variation greater than 16,7 % and lower or equal to 33,3 %. The result must be interpreted with care.
Sources : MSSS, Fichier des tumeurs; Régie de l'assurance maladie du Québec (RAMQ), Fichier d'inscription des personnes assurées (FIPA).
Production : équipe Surveillance de l'état de santé de la population, DSP de la Montérégie, janvier 2017.

Screening for breast cancer in Kahnawà:ke:

The current Canadian Task Force on Preventive Care guidelines[26] recommends screening women between the ages of 50 and 74 for breast cancer with a mammogram every two years.

Information from the 2015 Regional Health Survey :

- **79.4% of female respondents in Kahnawà:ke between the ages of 50 and 74 reported having received a mammogram in the last 2 years:**
    - This compares to 64.7% in Québec in 2016 and 66.8% in Montérégie in 2016, and it is above the provincial program target of 70%[27]
    - This is an excellent result and speaks well of local awareness and accessibility.
        - Even so, we might want to set our target higher for the future.
- 89.7% of female respondents between the ages of 50 and 74 had received a mammogram in the last 5 years:
    - This compares to 83.5% of women Canada-wide[28].
- 4.8% of female respondents between the ages of 50 and 74 reported having never received a mammogram.

**How can we help more women get routine screening?
Awareness, reminder systems for patients and for KMHC staff, outreach?
What resources might we need for this?**

Breast Cancer Prevention

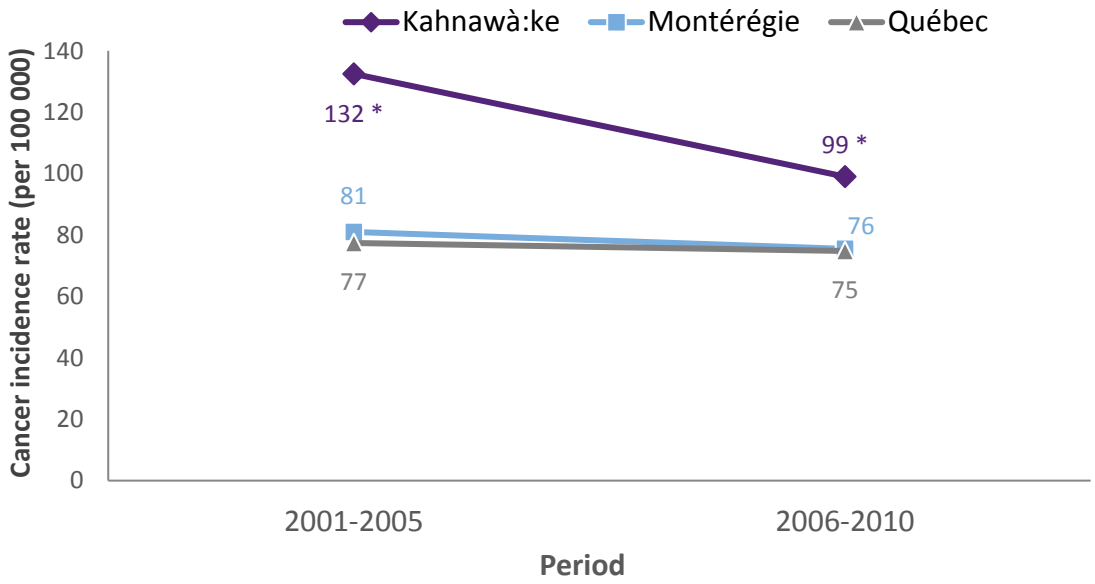
Certain behaviours like physical activity, healthy diet, minimizing alcohol use and avoidance of smoking and second-hand smoke are important in preventing many types of cancer, including breast cancer. These are discussed in other areas of the *Onkwaná:ta- Our Community, Onkwata'karí:te – Our Health* Health Portrait. A brief discussion of tobacco smoking and second-hand exposure prevalence is included in this chapter under the section Lung Cancer Prevention (page 61).

[26] https://canadiantaskforce.ca/guidelines/published-guidelines/breast-cancer/
[27] https://www.inspq.qc.ca/sites/default/files/documents/pqdcs/tableaubordpqdcs.pdf
http://extranet.santemonteregie.qc.ca/userfiles/file/sante-publique/promotion-prevention/PQDCS-Infolettre-volume-10.pdf
[28] https://infobase.phac-aspc.gc.ca/ccdi-imcc/

Colon and Rectal Cancer

The graph below shows that the rate of new cases of colon and rectal cancer in Kahnawà:ke is higher than those for the Montérégie region and the province of Québec. It is important to remember that because this is based on small overall numbers of cases in Kahnawà:ke, the difference of only one or two individuals diagnosed in a 5-year window can cause a notable change to the incidence rate (see *). It is not clear if the trend downwards in the two time periods shown is a true decrease or due to expected random variation year to year, but it is concerning that the local rates are higher than the surrounding region and province in both time periods. The differences seen here are not statistically significant.

Figure 23. Adjusted colorectal cancer incidence rate, per 100,000 people; Kahnawà:ke, Montérégie and Québec, 2001-2005 to 2006-2010.



* Coefficient of variation greater than 16,7 % and lower or equal to 33,3 %. The result must be interpreted with care.
Sources : MSSS, Fichier des tumeurs; Régie de l'assurance maladie du Québec (RAMQ), Fichier d'inscription des personnes assurées (FIPA).
Production : équipe Surveillance de l'état de santé de la population, DSP de la Montérégie, janvier 2017.

Screening for Colon and Rectal Cancers in Kahnawà:ke:

The current Canadian Task Force on Preventive Care guidelines[29] recommends screening people between the ages of 50 and 74 years of age for colorectal cancer by doing a fecal occult blood test or FiT stool test every 2 years, or sigmoidoscopy every 10 years. Until 2016, colonoscopy every 10 years was also recommended; now this is only for high risk individuals (e.g.: those with Crohn's disease or with a strong family history of colon cancer).

Information from the 2015 Regional Health Survey:

- Only 57.2% of respondents between the ages of 50 and 74 years of age reported having ***ever*** received a screening for colorectal cancer:
    - This includes any one of: Fecal Occult Blood Test, FiT stool test, sigmoidoscopy or colonoscopy:
        - Because the survey did not ask about *when* someone had last had this test, *we do not know how many of these people had had the test within the recommended time frame* (2 years for FiT or FOBT test, 10 years for sigmoidoscopy, 10 years for colonoscopy) but it is likely a lower number than 57.2%.
    - Québec continues to develop a provincial program for colorectal cancer screening (but it is not yet in place) and has set a provincial participation target of at least 65%[30] in order to be effective in changing colorectal cancer morbidity and mortality.
- In comparison, Canada-wide in 2012, only 51.1% of people 50-74 years of age had had one of the screening tests *in the recommended time frame* as per the results of the Canadian Community Health Survey,[31] and only 43.4% in 2012 in Québec[32]:
    - Kahnawà:ke is likely similar to Québec and Canadian rates for screening for colorectal cancer, but higher participation rates are needed to be effective in reducing the impact of colorectal cancer.

How can we help more people get routine screening?
Awareness, reminder systems for patients and KMHC staff, outreach?
Alternate access to screening? What resources might we need for this?

[29] https://canadiantaskforce.ca/guidelines/published-guidelines/colorectal-cancer/
[30] https://www.inspq.qc.ca/sites/default/files/publications/1712_indevalprogqcdepcancercolorec.pdf
[31] https://infobase.phac-aspc.gc.ca/ccdi-imcc/indicator-details-en.aspx?id=35
[32] http://cmajopen.ca/content/3/2/E149/T1.expansion.html

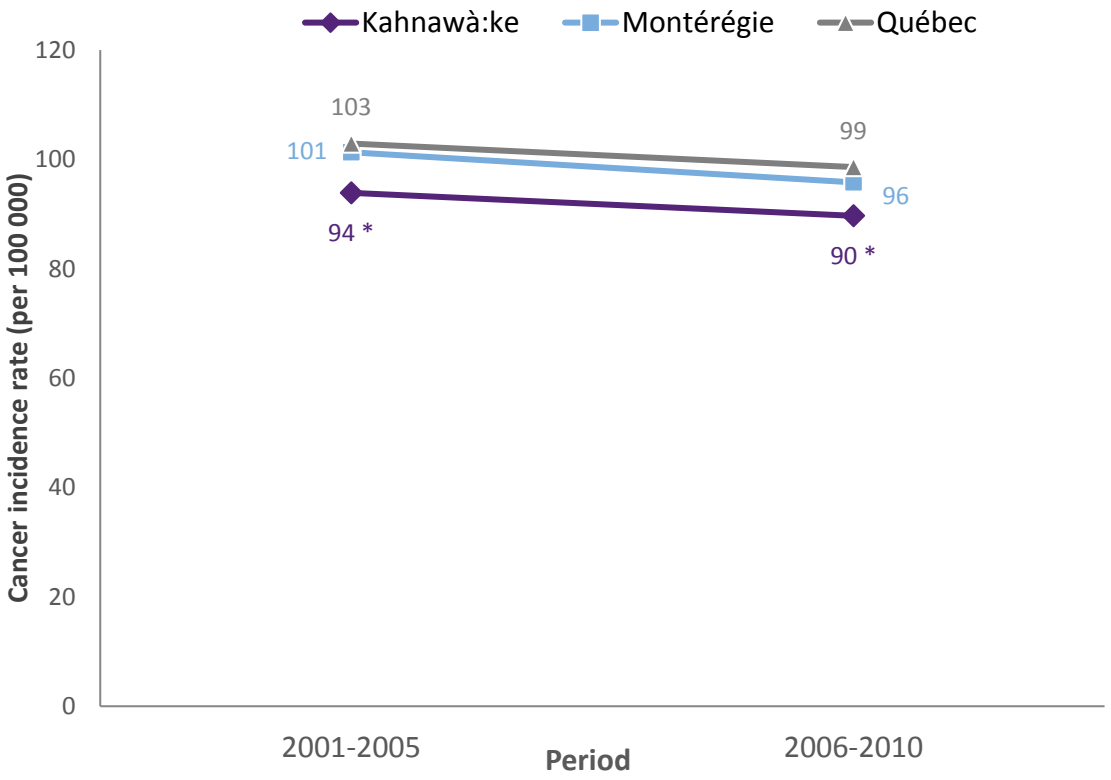
Colon and Rectal Cancer Prevention

Certain behaviours like physical activity, healthy diet, minimizing alcohol use and avoidance of smoking and second-hand smoke are important in preventing many types of cancer, including colon and rectal cancers. These are discussed in other areas of the *Onkwaná:ta- Our Community, Onkwata'karí:te – Our Health* Portrait. A brief discussion of tobacco smoking and second-hand exposure prevalence is included in this chapter under the section Lung Cancer Prevention (page 63).

Lung Cancer

The graph on the next page (Figure 24) shows that the rate of new cases of lung, bronchi and trachea cancer in Kahnawà:ke is similar to those for the Montérégie region and the province of Québec. It is important to remember that because this is based on small overall numbers of cases in Kahnawà:ke, the difference of only one or two individuals diagnosed in a 5-year window can cause a notable change to the incidence rate (see *). It is not clear if the trend downwards in the two time periods shown is a true decrease or due to expected random variation year to year, but it is reassuring that the local rates are similar to or lower than the surrounding region and province in both time periods.

Figure 24. Adjusted trachea, bronchi and lungs cancer incidence rate, per 100,000 people; Kahnawà:ke, Montérégie and Québec, 2001-2005 to 2006-2010.



* Coefficient of variation greater than 16,7 % and lower or equal to 33,3 %. The result must be interpreted with care.

Sources : MSSS, Fichier des tumeurs; Régie de l'assurance maladie du Québec (RAMQ), Fichier d'inscription des personnes assurées (FIPA).

Production : équipe Surveillance de l'état de santé de la population, DSP de la Montérégie, janvier 2017.

Lung cancer screening:

Until recently, there was no recommended screening test for lung cancer. In 2016, the Canadian Task Force on Preventive Care[33] released a new recommendation that adults aged 55-74 years with at least a 30 pack-year[†] smoking history who also currently smoke or quit less than 15 years ago, be screened with low-dose computed tomography (CT) scan up to three consecutive times, and only in settings with sufficient expertise in early diagnosis and treatment of lung cancer. Because this recommendation was developed after the Regional Health Survey took place, we do not have data on how many people in the community have been screened using this test yet. It is likely the number will be quite low until the health care system can begin to increase the accessibility of this screening procedure and it can be better studied.

Lung Cancer prevention

Smoking and second-hand smoke exposure:

Information from the 2015 Regional Health Survey:

- 15.4% of people 12 years and older in Kahnawà:ke reported they currently smoke
    - This is somewhat lower than the general population of Montérégie in 2013/2014, – 19%, although as smoking rates are trending down, the Montérégie number may have been lower in 2015/2016.
- 40% of people 12 years and older in Kahnawà:ke reported they are former smokers and 44% reported never having smoked.
- 9.7% of non-smokers 12 years and older in Kahnawà:ke reported they are regularly exposed to second-hand smoke in their home:
    - Compared to 6.9% in Montérégie.
- 20% of non-smokers 12 years and older in Kahnawà:ke are regularly exposed to second-hand smoke in vehicles:
    - Compared to only 5.8% in Montérégie.

[33] https://canadiantaskforce.ca/guidelines/published-guidelines/lung-cancer/

[†] pack-year defined as the (average number of cigarette packs smoked daily) x (number of years smoking)

Unfortunately, the survey did not have questions about second-hand smoke in work environments, but we know from service providers and community members that many people are regularly exposed to second hand-smoke in restaurants, bars, and factories in Kahnawà:ke, including both workers and patrons. It is important to remember that although smoking has a very strong link to lung cancers, both first and second-hand smoke exposure also increases the risk for almost every other type of cancer.

How can we further reduce smoking rates?
How can we limit second hand smoke exposure?

Other environmental exposures related to lung cancer:

- Radon :
    - This is colourless, odorless gas that is radioactive and naturally occurring in rock, soil and groundwater. It is found to varying degrees across Canada
    - Radon is known to increase the risk of lung cancer and is a common cause of lung cancer in non-smokers and in smokers
        - **about 10-16% of lung cancers in Québec are attributed to radon exposure**
        - there is a synergistic effect for people who smoke and who are also chronically exposed to radon gas; the risk of cancer for these people is even higher

Radon can enter homes through cracks in walls or porous foundations or through sump pumps. It is usually highest in basements and tends to accumulate on lower levels.[34] Homes can be tested for radon and repaired to reduce exposure. We do not have a complete picture of radon exposure in Kahnawà:ke. In 2010, twenty-one public buildings in Kahnawà:ke were measured for radon levels. Three were found to have high radon levels and action was taken to remediate this. KSCS Environmental Health Services offers advice to community members on how individuals can test for radon and repair homes if levels are found to be high.

[34] https://www.canada.ca/en/health-canada/services/environmental-workplace-health/radiation/radon/radon-frequently-asked-questions.html

- Asbestos :
    - Asbestos was mined in Québec until very recently near a few towns in the Eastern Townships. It was a commonly-used construction material between the 1930's and 1980's because of its flame-retardant properties, soundproofing ability and high strength. Even though it is no longer used in new construction in Canada, it is not uncommon for it to be present in older buildings or older sewer pipes
    - Exposure to inhaled asbestos dust is an important risk factor for developing mesothelioma, a particular form of lung cancer, and asbestosis, a lung disease. People who have worked with this material in construction or demolition, or by mining it without proper protective equipment are at higher risk of developing lung cancer
    - We do not have data on previous asbestos exposure specific to Kahnawà:ke

How can we further enhance community knowledge of radon and facilitate testing and repair of buildings and homes? How can we work with Mohawk Self Insurance (MSI) and Commission des Normes, de l'Équité, de la Santé et de la Sécurité du travail (CNESST) to ensure high risk workers are protected from asbestos exposure?

Cervical Cancer

Thanks to good prevention with vaccination against HPV and treatment of precancerous lesions found by Pap tests, cervical cancer is much less common today than it was in the past. Because of this, it is too infrequent to measure the rate of new cases in Kahnawà:ke.

Cervical Cancer Screening

The Canadian Task Force on Preventive Care recommends Pap test screening for cervical cancer every 3 years for women aged 25 - 69 years who have ever been sexually active. This guideline was updated in 2013,[35] before which, it was recommended that screening occur every year, but researchers found it did not need to be done this often.

Information from the Regional Health Survey (2015-2016):

- 78% of female survey respondents from Kahnawà:ke between the ages of 25 and 69 reported having had a Pap test done in the last 3 years:
    - In comparison, 79.7% of target age women in Canada reported having had at least one Pap test in the past 3 years (2012)[36]
- Only 1.8% of Kahnawà:ke female respondents between the ages of 25 and 69 years old reported *never* having received a Pap test.

Cervical Cancer Prevention

Human papilloma virus (HPV) is a family of viruses that play an important role in the development of cervical cancer, as well as oral, throat and anal cancers. Transmission of several strains of this virus can be prevented with the HPV vaccine; this is currently recommended to women aged 9-46 years and males aged 9-26 years.

In Québec, there has been a vaccination program for several strains of HPV since 2008. Since that time it has been given in school to females in 4th grade (with an original catch-up vaccination period for older girls). In 2016, after the survey was completed, Québec expanded the program to include boys.

[35] https://canadiantaskforce.ca/guidelines/published-guidelines/cervical-cancer/
[36] https://infobase.phac-aspc.gc.ca/ccdi-imcc/

From the Regional Health Survey 2015-2016, among female children and youth 9 years of age or older:

- 59.0% had received the HPV vaccination
- 18.0% had not received the vaccination
- 23.1% did not know if they had received it
    - This compares to rates of approximately 80% vaccine coverage as noted by the Community Health Unit at KMHC. This suggests that almost all of the respondents who said they did not know if they received the vaccine had indeed received it
    - In Québec, in 2010-2011, HPV vaccine coverage rates in elementary grade 4 and Secondary III (grade 9) exceeded 75%
    - These rates are quite good, but we should ask ourselves if we can achieve higher rates of coverage.

Although boys were not included in the universal vaccination program at the time of the survey, it was possible for individuals to choose the vaccine through an individual visit with their physician.

From the Regional Health Survey, among male children and youth 9 years of age or older in Kahnawà:ke

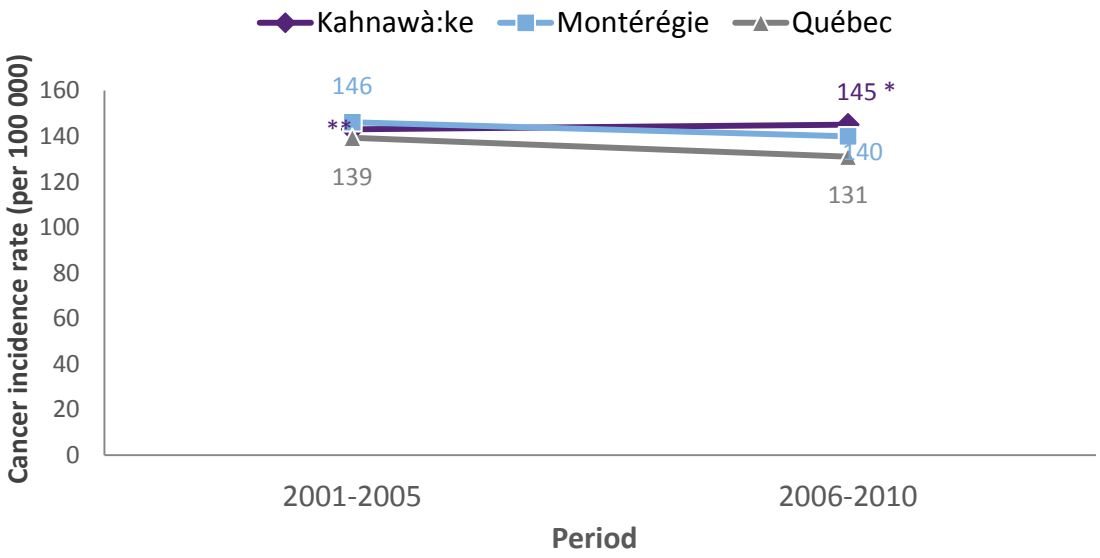
- 10.4% had received HPV vaccination
- 59.7% had not received the vaccination
- 30.0% did not know if they had received it

How can we improve HPV vaccination rates? Accessibility of the vaccine/Community Health Unit (CHU) hours?
Patient or provider reminders?
What resources might we need?

Prostate Cancer

The graph below shows that the rate of new cases of prostate cancer in Kahnawà:ke are similar to those for the Montérégie region and the province of Québec. It is important to remember that because this is based on small overall numbers of cases in Kahnawà:ke, the difference of only one or two individuals diagnosed in a 5-year window can cause a notable change to the incidence rate and in the first time period the numbers are too small to be presented. It is reassuring that the local rates are similar to the surrounding region and province. Rates are only shown for men because the prostate is a gland that is only present in men.

Figure 25. Adjusted prostate cancer incidence rate, per 100,000 men; Kahnawà:ke, Montérégie and Québec, 2001-2005 to 2006-2010



* Coefficient of variation greater than 16,7 % and lower or equal to 33,3 %. The result must be interpreted with care.
** Coefficient of variation greater than 33,3 %. The result is not shown in graph.
Sources : MSSS, Fichier des tumeurs; Régie de l'assurance maladie du Québec (RAMQ), Fichier d'inscription des personnes assurées (FIPA).
Production : équipe Surveillance de l'état de santé de la population, DSP de la Montérégie, janvier 2017.

Prostate Cancer Screening

Although many men have undergone prostate cancer screening through the Prostate Specific Antigen (PSA) blood test and physical exam of the prostate in clinic, since 2014 the Canadian Task Force on Preventive Care has recommended explicitly NOT to conduct universal screening with these tests.[37] The US Preventive Services Task Force also provides the same recommendation against universal screening with PSA.[38]

Prostate Cancer Prevention

As discussed above, certain behaviours like physical activity, healthy diet, minimizing alcohol use and avoidance of smoking and second-hand smoke are important in preventing many types of cancer, including prostate cancer. These are discussed in other areas of the *Onkwaná: ta Our Community, Onkwatákarí:te Our Health* Portrait.

[37] https://canadiantaskforce.ca/guidelines/published-guidelines/prostate-cancer/
[38] https://www.uspreventiveservicestaskforce.org/Page/Document/UpdateSummaryFinal/prostate-cancer-screening

Areas of Action Regarding Cancer

When reviewing this portrait of cancer in Kahnawà:ke, it is clear that the community has already taken some important steps to addressing cancer as a health priority. The portrait also shows us several areas where more can be done to reduce the impact of cancers on the community. These are discussed below.

1. Early Prevention:

Right now, there are many things we can do to directly prevent cancers:

- Vaccinate eligible individuals against human papilloma virus (HPV) to prevent cervical cancer, as well as, several head and neck cancers and anal cancer
- Prevent exposure to first, second and third hand-smoke
  - Promote not starting to smoke at all, especially among youth
  - Support people to quit through supportive social and physical environments, policies, access to nicotine replacement and treatments
  - Reduce or eliminate indoor & in-vehicle smoking through community awareness, special campaigns, enhancing workplace participation in MSI or CNESST standards, adopt and enforce community policies to protect non-smokers from exposure to this powerful carcinogen
- Enhance testing of homes & public buildings for radon gas and repair them to reduce exposure if levels are high
- Promote wearing sunscreen & protective clothing when the UV index is high, through awareness campaigns and by making these items available to workers, daycares, etc.
- Prevent exposure to asbestos and other toxic materials by eliminating the use of such products when possible and with good workplace practices, policies and access to protective equipment when necessary, in partnership with MSI and CNESST
- Reduce or eliminate alcohol intake through community awareness, healthy environments and policies that support health such as allowing a limited number of alcohol retailers (see Chapter 4 for more detail)
- Prevent transmission of HIV and Hepatitis C virus through universal healthcare precautions, promoting healthy sexual practices, mental health and addiction support, screening of high risk groups and treatment of those affected
- Continue or initiate soil, air quality & water quality testing & remediation of any contamination detected

1. Cancer screening:

There are also several good screening tests to catch some of the more common types of cancer early:

- Pap test to detect cervical cancer
- FiT stool test to detect colon and rectal cancers, or colonoscopy in people with high risk factors
- Mammograms to detect breast cancer

It is terrific that Kahnawà:ke screening rates are similar to or better than surrounding regions for breast and cervical cancer, but there is still room to target improvements over the coming years, most notably for colon cancer screening. By maximizing our evidence-based screening programs, we hope to catch more of these treatable cancers early in their course and achieve greater cure or remission rates. There are many ways to do this that have been shown to be very effective in other communities. We should ask ourselves what resources we might need in order to make some of these interventions a reality. Onkwata'karitáhtshera receives proposals for project funding from community members and agencies on an annual basis and can also help direct people to other project grants for such initiatives that may be available through agencies like Health Canada. **Some ways we could improve our rates include**:

- Patient reminder systems (like mailing out a letter, or automated text message when the test is due). This is much easier with electronic medical records
- Health care provider reminder systems (like automated pop-up on an electronic medical record)
- Enhanced patient and community awareness of the importance of screening tests
    - Social media (e.g.: Facebook, Twitter, YouTube)
    - Mass media (e.g.: radio, posters, TV)
    - Group education events
- Flexible clinic hours for patients, reducing the need to take time away from work
- Evaluation and feedback to healthcare providers regarding rates of screening among their own patients
- Tests that are easier to do (e.g.: the new FiT stool test is much easier to do for the client than the older FOBT stool test)

3. Diagnosis & Treatment:

Even after we maximize our prevention, some people will unfortunately still develop cancers. In addition to finding some of these cancers early with screening tests, we need to make sure that these people have good access to treatment and the supportive services that they and their loved ones need.

This includes programs and services such as:

- Medical care: pathology, radiology, surgical care, chemotherapy, radiation therapy, physiotherapy, occupational therapy, and dietician, at regional referral centres & locally when possible
- Cancer-care coordination workers and nurses
- Psychological supports (e.g.: mindfulness training, grief counselling, talk-therapy, survivor groups)
- Community & social supports (e.g.: meal delivery, childcare services, transport, financial supports)
- Traditional & cultural supports
- Homecare
- Palliative care

Many of these resources are already in place in the community or via partnerships, but Onkwata'karitáhtshera member agencies continue to work towards increasing and improving them.

4. Support research into new prevention, detection and treatment techniques

Unfortunately, for many cancers we do not yet have adequate cures, or even know the underlying causes. For these, we can continue to support research projects through activities like fundraisers or community-based participatory research projects when appropriate.

Chapter 3:

Tobacco Use & Smoke Exposure in Kahnawà:ke

Summary of Key Points

- **Almost 1 in 6 respondents (15%) aged 12 years and older are currently smoking**
    - This rate of **current smoking in Kahnawà:ke (15%) is much lower than it was among other First Nations in Québec in 2008 (56%)** and somewhat lower than the most recent rate reported for the Montérégie population in 2013-14 (19%)
        - It is important to note that over the last eight years, smoking rates in other First Nations may have declined compared to 2008
    - The **average age for smoking the first cigarette was 17 years old**, which was older than that of other Québec First Nations in 2008 (15 years old)
    - Approximately 7 out of 10 current smokers in Kahnawà:ke were smoking on a daily basis
    - Almost 1 in 4 current smokers reported smoking the equivalent of a pack a day
    - Kahnawa'kehró:non respondents in the lowest income and education categories were the most likely to be current smokers
- **40% of those aged 12 years and older reported being a former smoker**
    - **Among these, 78% had stopped smoking for at least 3 years**
    - Former smokers most often stated the need to live a healthier lifestyle as their reason for quitting
    - The most common method for quitting smoking was "going cold turkey"
- **44% of those aged 12 and older reported never having been a smoker**
- **More than 1 in 5 (23.2%) Kahnawa'kehró:non *non-smokers* are regularly exposed to second-hand smoke in their homes and vehicles**
    - This is higher than the rate of second-hand smoke exposure in the Montérégie region
    - **1 in 7 children (0-11 years old) in Kahnawà:ke were exposed regularly to second-hand smoke**
    - Kahnawa'kehró:non children (0-11 years old), whose parents reported they had asthma, were more frequently exposed to second-hand smoke on a regular basis
- **Rates of Chronic Obstructive Pulmonary Disease (COPD), Hypertension (high blood pressure) and the death rate from diseases of the circulatory system (e.g.: heart attacks, strokes) are notably higher in Kahnawà:ke compared to Québec and the Montérégie region.** Tobacco-smoking (current or former) and chronic second-hand smoke exposure are the main causes of these diseases
- **Almost as many high school-aged youth (12-16 years) had experimented with e-cigarettes as with regular cigarettes (34% vs. 35%), while chewing tobacco had also been tried by 1 in 4 high school students surveyed**
- Lung cancer diagnosis rates in Kahnawà:ke are similar to those seen in the province of Québec and the Montérégie region

Introduction

Use of tobacco products such as cigarettes and cigars is a significant public health issue because it is the number one cause of preventable death[39]. Tobacco smoke is a powerful cancer-causing agent and a destructive force to many body organs and cells. Because of this, there are many serious health problems that are caused both by smoking tobacco products and being exposed to second-hand smoke. These include: lung cancer and many other cancers, severe respiratory diseases such as chronic obstructive pulmonary disease (COPD, also sometimes called emphysema and chronic bronchitis), asthma, and cardiovascular diseases such as hypertension, heart attack and stroke[40]. Smoking has also been shown to put people at greater risk for diabetes and smokers with diabetes are more likely to develop serious diabetes-related health complications[41]. In Kahnawà:ke, COPD, hypertension and diabetes are all considerably more common than they are for the general populations of the Montérégie region and the province of Québec[42].

Tobacco use also poses significant risks to people who have never smoked. Second-hand smoke contains over 4,000 chemicals, at least 70 of which can cause cancer. Because of this, second-hand smoke exposure can also lead to many of the same health problems, even in people who have never smoked themselves. Children exposed to second-hand smoke are more likely to have asthma exacerbations, ear infections and other health problems[43]. These exposures occur when someone is smoking in enclosed spaces such as at home, at workplaces, in restaurants or in a car. Although some people who smoke think they are reducing the effects on their families by opening windows or turning on fans while smoking, it has been shown that doing this does not reduce the dangers of second-hand smoke in the home. In addition, smoke remains in the enclosed space for a long time after someone has smoked by clinging to materials such as rugs, furniture and clothes, so that children and adults who do not smoke can still be exposed to the toxins in smoke by spending time in these environments.

This report describes current tobacco smoking patterns, second hand smoke exposure, and related health problems in Kahnawà:ke using responses from the 2015 Regional Health Survey (RHS), as well as the 2016 Tobacco Control School Bus Survey conducted by the Kahnawà:ke Tobacco Working Group. These results can be useful in identifying where more prevention actions and services may be helpful.

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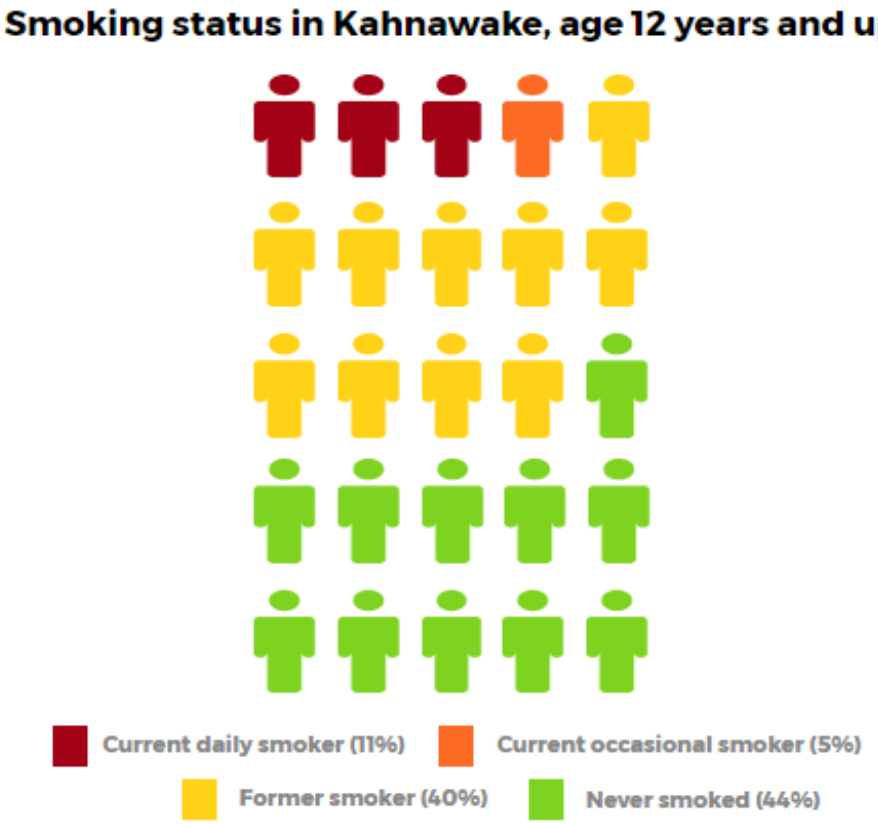
[39] US Centers for Disease Control. Smoking and tobacco use fact sheets. https://www.cdc.gov/tobacco/data_statistics/fact_sheets/index.htm. Accessed July 7, 2017.
[40] Health Canada. Smoking and your body. https://www.canada.ca/en/health-canada/services/health-concerns/tobacco/smoking-your-body.html. Accessed July 7, 2017.
[41] US Centers for Disease Control. Smoking and diabetes. https://www.cdc.gov/tobacco/campaign/tips/diseases/diabetes.html. Accessed July 7, 2017.
[42] INSPQ Québec Integrated Chronic Disease Surveillance System. Results compiled by équipe Surveillance de l'état de santé de la population, DSP de la Montérégie, February 2017.
[43] Health Canada. Dangers of second-hand smoke. https://www.canada.ca/en/health-canada/services/smoking-tobacco/avoid-second-hand-smoke/second-hand-smoke/dangers-second-hand-smoke.html. Accessed July 7, 2017.

How common is tobacco smoking in Kahnawà:ke?

- Almost **1 in 6** respondents in Kahnawà:ke aged 12 and older (15.4% of people 12 and older) said that they were smokers at the time of the 2015 Regional Health Survey:
    - **This was considerably lower than the proportion of smokers reported for all Québec First Nations communities participating in the RHS in 2008[44], which was more than 3 out 6 of respondents in this age group (55.5%)**. It is important to remember that the rates in other communities may have declined since 2008
    - **It is also somewhat less than in the general Montérégie region population where prevalence of smoking was estimated to be 19.2% among those aged 12 years and older in 2013/2014.** It is important to remember this number may have decreased a bit in the couple of years between when it was measured and the 2015 RHS[45]
    - While this is very encouraging, this still means an estimated several hundred people in the community are smoking and are at higher risk of smoking-related health problems

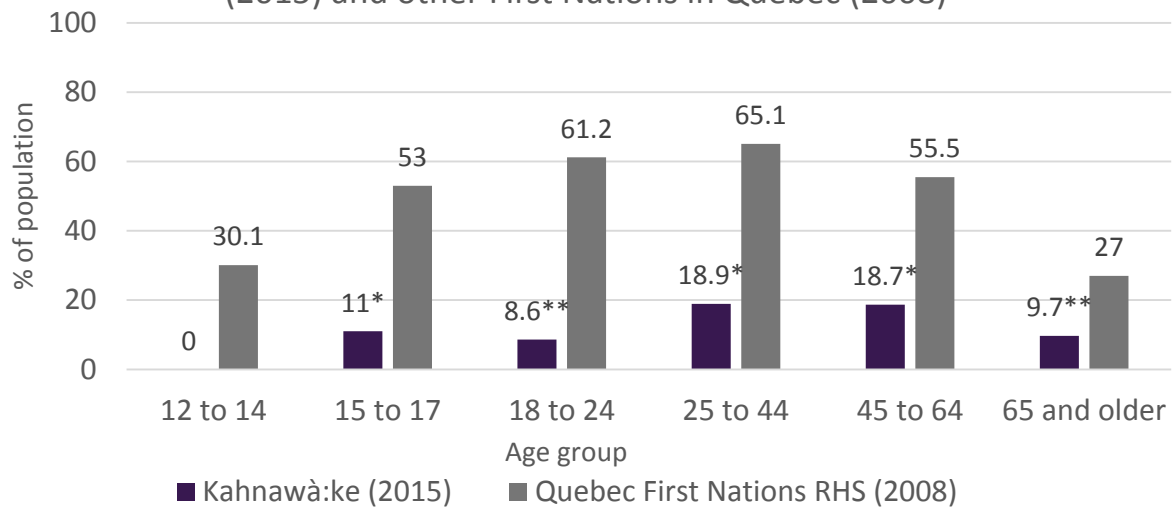
[44] Québec First Nations Regional Health Survey – 2008, Chapter 8: Smoking, Section 1.1 (page 15). Available at: https://www.cssspnql.com/docs/concours---mon-mieux-etre/chapter-8.pdf?sfvrsn=0.
[45] Canadian Community Health Survey (2013-2014). Information retrieved from Statistics Canada CANSIM table 105-0502. Available at: http://www5.statcan.gc.ca/cansim/a05?id=1050502.

Figure 26


Smoking status in Kahnawake, age 12 years and up
Current daily smoker (11%)
Current occasional smoker (5%)
Former smoker (40%)
Never smoked (44%)

- In Kahnawà:ke, there are slightly more women reporting current smoking than men: 17.2% versus 13.5%. However, statistically speaking, these are not significant differences
- **Among current smokers, regular smoking (i.e., smoking cigarettes on a daily basis) is much more common than occasional smoking**
    - Approximately 7 out of 10 current smokers (70%) smoke every day
- In terms of age**, the highest proportion of current smokers was seen among the 25-44 year old and the 45-64 year old age groups with almost 19% of people in each of these groups reporting they currently smoke** (see Figure 27 below)

Figure 27. Percent of individuals currently smoking, Kahnawà:ke (2015) and other First Nations in Québec (2008)



***coefficient of variation greater than 16.7% - result should be interpreted with care**
**** coefficient of variation greater than 33% - result is not statistically reliable**

Although these age group results need to be interpreted with caution due to small sample sizes, it appears that younger age groups have a smaller proportion of smokers. There were no smokers in the 12-14 year-old respondents, while prevalence of smoking in the 15-17 year and 18-24 year age groups was 11% and 9% respectively. This is different from what was seen in Québec First Nations in the 2008 RHS survey where 30% of 12-14 year old respondents were smokers and prevalence of smoking in 15-24 year olds was comparable to older age groups.[46]

[46] Québec First Nations Regional Health Survey – 2008, Chapter 8: Smoking, Section 1.2 (page 17). Available at: https://www.cssspnql.com/docs/concours---mon-mieux-etre/chapter-8.pdf?sfvrsn=0.

Portrait of current smokers

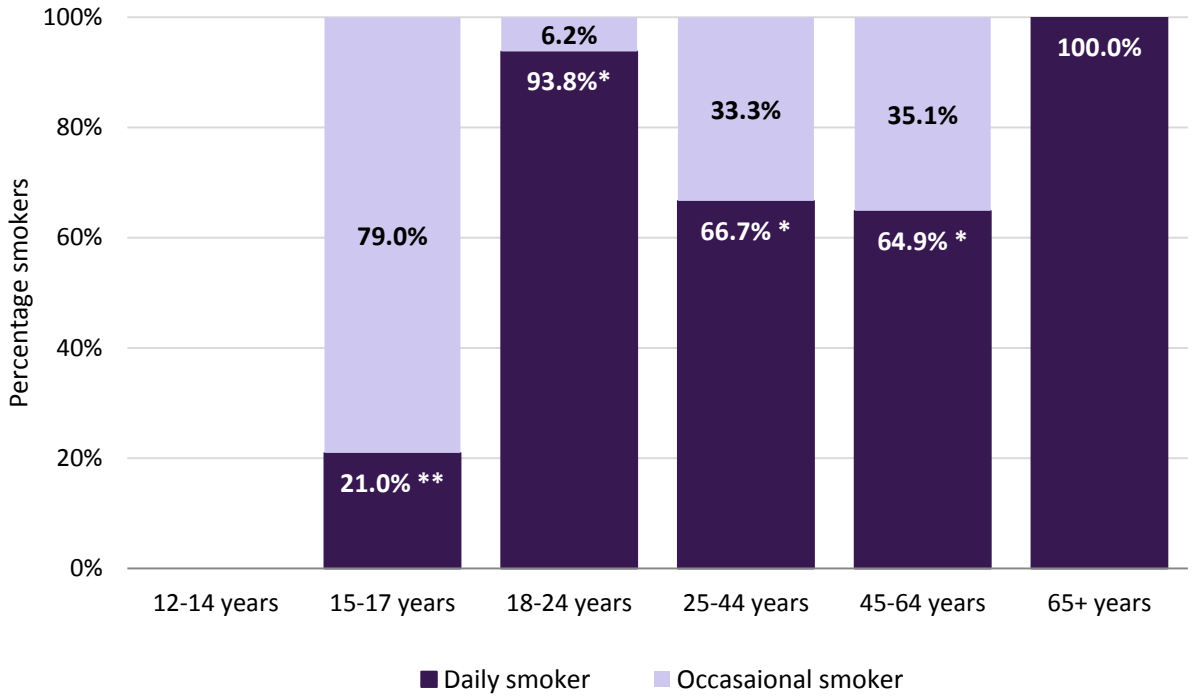
How old were people when they started smoking?

- The average age of starting to smoke was 17 years among Kahnawa'kehrò:non who currently smoke; age of initiation ranged from 10 to 50 years old
    - 75% of current smokers began smoking before the age of 18 years (legal age of majority in Québec)

Are people regular smokers or occasional smokers?

- More smokers were regular smokers compared to occasional smokers in all age groups, with the exception of smokers aged 15-17 years old (Figure 28).

Figure 28. Percent of current daily vs non-daily smokers based on age in Kahnawà:ke



***coefficient of variation greater than 16.7% - result should be interpreted with care**
**** coefficient of variation greater than 33% - result is not statistically reliable**

- Among 18-24 year olds almost all smokers were daily smokers:
    - This may suggest that younger smokers transition quickly from occasional to daily use, meaning youth are an important target group for smoking prevention programming so that we might halt the progression from occasional to daily smoker
- Among those aged 65 and up, all smokers were daily smokers.
- These age group results need to be interpreted with caution due to small sample sizes which can affect how precise the estimates are

How many cigarettes per day do most people smoke?

Due to the small number of respondents, it is difficult to report reliable information on average number of cigarettes being smoked by current smokers in Kahnawà:ke:

- The average number of cigarettes smoked is estimated at about 13 per day (about 2/3 of a pack per day)*
- Approximately 1 in 4 (24.2%) of current smokers smoke at least 20 cigarettes a day (about a pack a day)
- **54% of current smokers had made at least one attempt to quit in the previous 12 months**

Are smoking rates different based on income and education? †

Social and economic status is an important determinant of health in all situations. Individuals and families living in poverty and lacking education are more vulnerable to a number of psychological, emotional and physical risks which can impact their health, and can be caused or made worse by social exclusion, adverse circumstances in early life and loss of control of destiny, to name but a few. The history of colonization of First Nations peoples in Canada also amplifies the destructive effects of these traumatic forces[47]. These stresses can also lead to coping strategies which include cigarette-smoking. Smoking prevention programs should continue to work with other program areas in order to find ways to limit the effects of these stressors in the lives of socioeconomically disadvantaged community members.

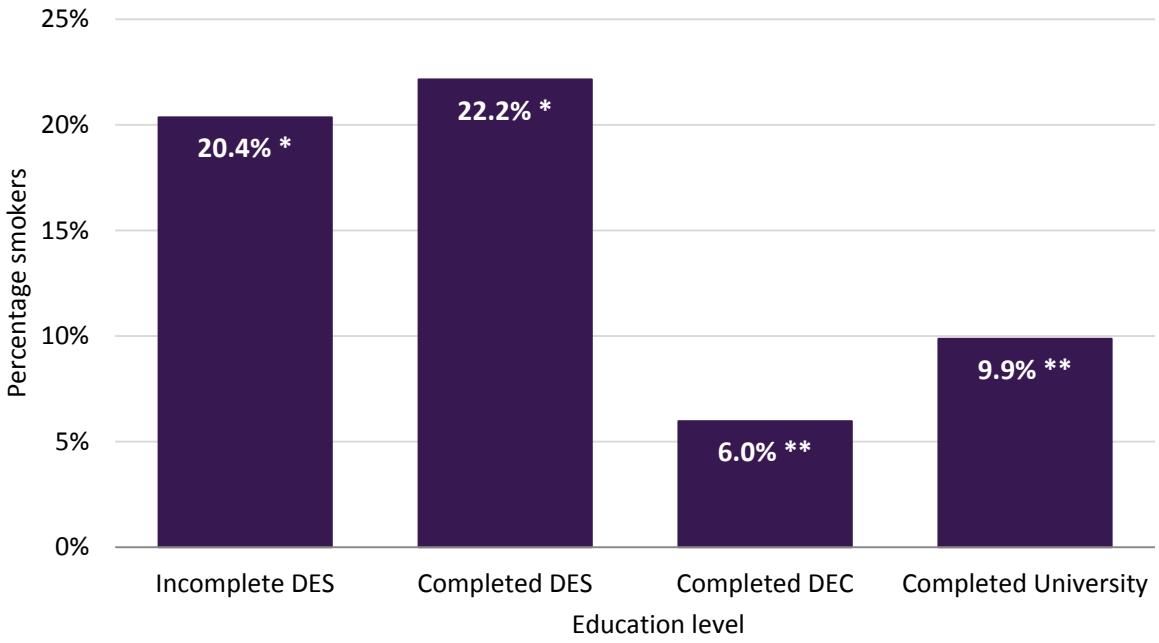
[47] National Collaborating Centre for Aboriginal Health (2013). Pathways to improving well-being for Indigenous Peoples: How living conditions decide health. Accessed July 10, 2017 at: http://www.nccah-ccnsa.ca/Publications/Lists/Publications/Attachments/102/pathways_EN_web.pdf.

†A note of caution in interpreting these results: a little more than one third of adults did not provide their income when responding to the survey which could bias the results if not reporting income was associated with smoking status or income level.

In Kahnawà:ke:

- Smoking was much less common among those who had completed their CEGEP DEC/DEP[48] or university compared to those who had only a high school diploma (DES[49]) or less education degrees (Figure 29)
- There were far fewer smokers among those in the highest household income bracket ($70,000 and up), with only 5.3% of these people currently smoking (Figure 30)
- Adults with a household income under $20,000 had the highest proportion of smokers (28.5%).

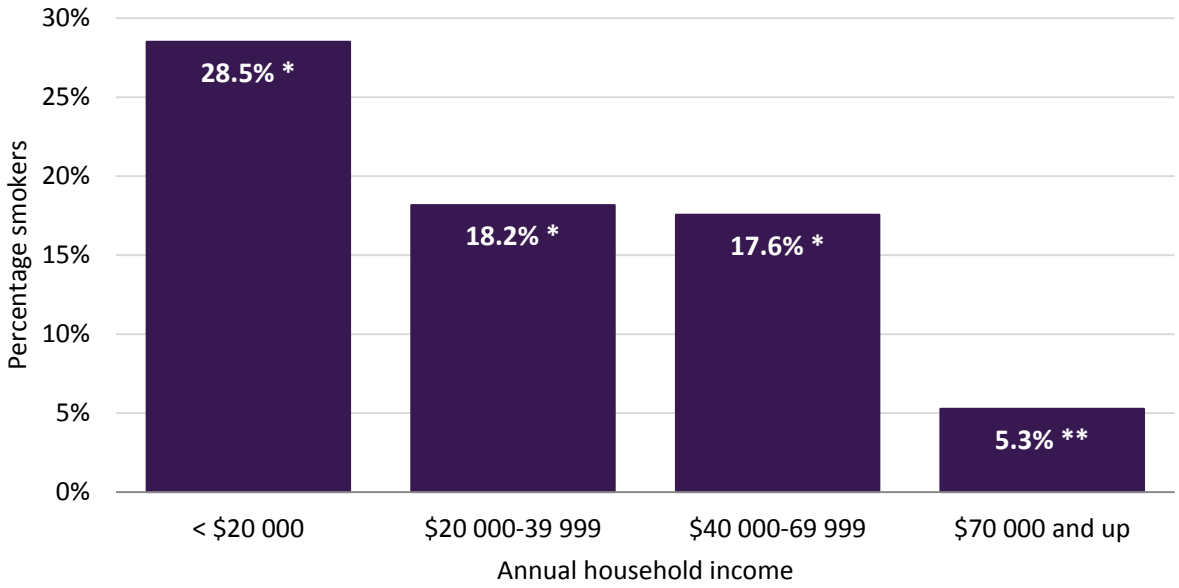
Figure 29. Prevalence of smoking based on highest level of education attained, Kahnawà:ke respondents aged 18 and up



Regional Health Survey, 2015, sample representing 6344 residents

[48] Diplôme d'études collégiales / Diplôme d'études professionnelles
[49] Diplôme d'études secondaires

Figure 30. Prevalence of smoking based on annual household income, Kahnawà:ke respondents aged 18 and up



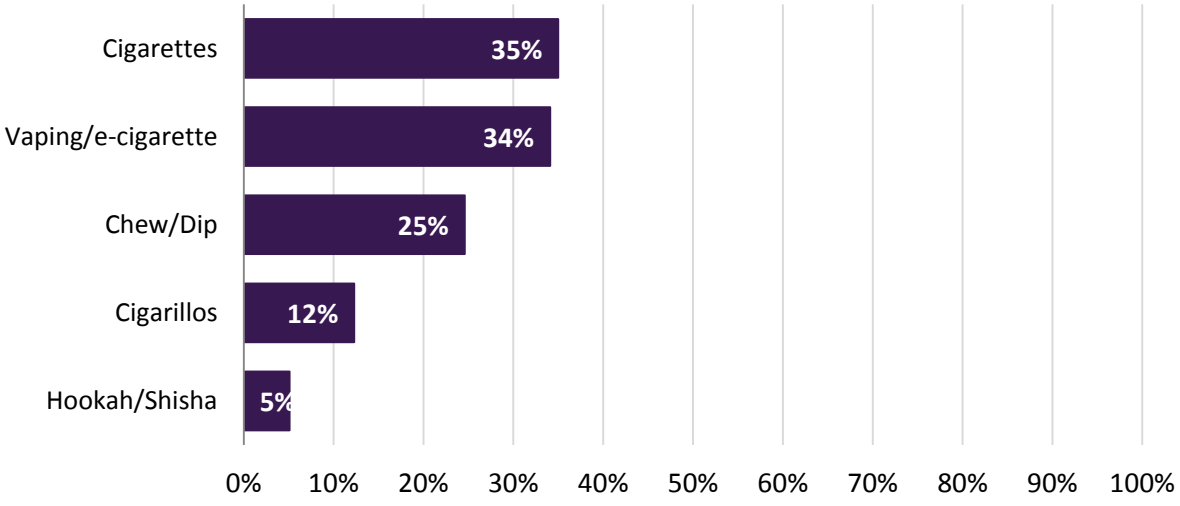
Regional Health Survey, 2015, sample representing 4077 residents

Use of other tobacco & nicotine products among youth

The 2015 Regional Health Survey gives us information on cigarette-smoking habits in Kahnawà:ke but did not ask about other products such as chewing tobacco or e-cigarettes. For information on other types of tobacco or nicotine product use, we have some details on high school-aged youth behaviours from the Tobacco Control School Bus Survey of 138 local youth in 2016:

- 34% of high school youth aged 12 to 16 reported having ever used or tried e-cigarettes (also known as "vaping"); this is almost as much as the use of traditional cigarettes (Figure 31): 34% versus 35%
- One in four of the youth surveyed (25%) had also experimented with or were regularly using chewing-tobacco

Figure 31. Any use or experimentation with different tobacco products, Kahnawà:ke youth respondents aged 12-16 years



Tobacco Control School Bus Survey, 2016, sample of 138 youth

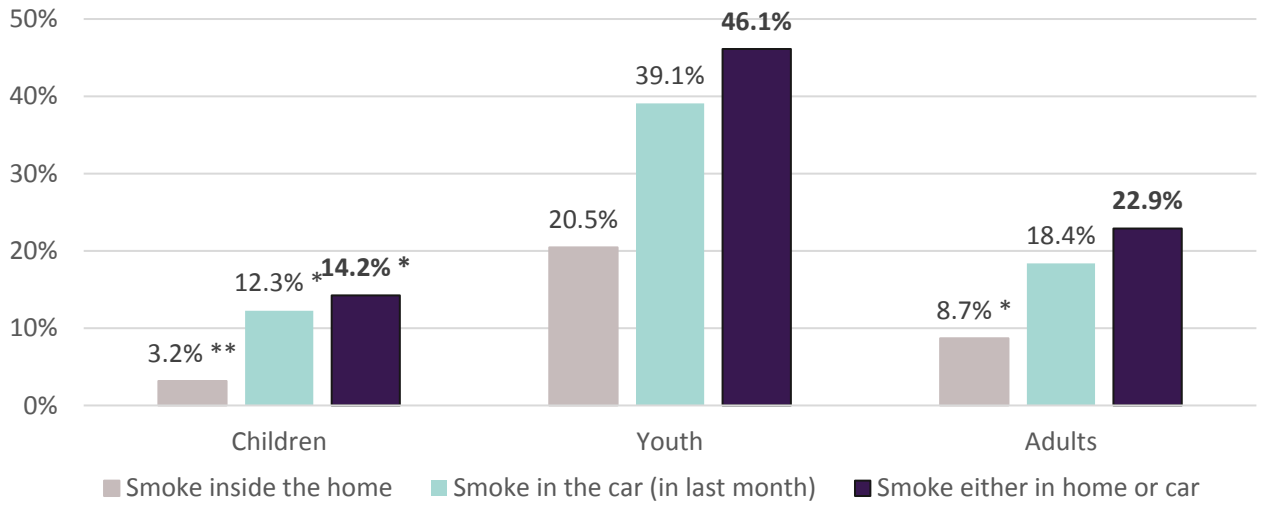
Second hand smoke exposure

Exposure to second-hand smoke among non-smokers was commonly reported by respondents of all ages to the 2015 Regional Health Survey:

- **8.7% of *non-smokers* reported having somebody smoking inside their home every day or almost every day**
- **18.9% of *non-smokers* indicated being exposed to second hand smoke every day or almost every day in a car over the past month**
    - These rates of second-hand exposure are **highest among youth 12-17** years old

- When taken together, this means that more than **1 out of every 5 (23.2%) Kahnawa'kehrò:non *non-smokers* are being regularly exposed to second-hand smoke**
    - **These values are higher than those reported for the Montérégie population**, particularly with respect to second-hand smoke exposure in the car: only 6.9% of Montérégie non-smokers aged 12 and up reported exposure to second-hand smoke at home (versus 9.7% of Kahnawa'kehrò:non of the same age range) while only 5.8% reported regular exposure in the car in the previous month (versus 20.0% in Kahnawà:ke)
    - **Non-smoking youth (12-17 years) were the most commonly exposed to regular second-hand smoke either at home or in the car, with 46.1% exposed**
    - This is only the visible exposure to second-hand smoke today and it is already concerning, but we know that it is likely higher than this. For example, the survey did not ask questions about being exposed to second-hand smoke at workplaces (for example, for bartenders or in some factories), although we know from community members that this can also be a significant source of toxin exposure for non-smokers. We also do not have any way of measuring the amount of second-hand smoke community members have been exposed to in the past, but we know that the health risks do accumulate over time.

Figure 32. Regular exposure to second-hand smoke, by non-smokers in Kahnawà:ke, by age group and location



Regional Health Survey, 2015, sample representing 6812 residents

Asthma and second-hand smoke exposure among children

We know from studies done elsewhere that second-hand exposure to smoke in children leads to higher risk of asthma, some infections (like ear infections) and other health problems[50]. It is important to remember that unlike smokers causing harm to their own bodies, children are not given a choice about whether they want to be exposed to second-hand smoke or not, and the health problems they may develop are largely preventable.

- **1 out of every 7 children 0-11 years old (14.2%) in Kahnawà:ke is exposed to second-hand smoke on a regular basis either at home or in the car:**
  - Children under the age of 12 in Kahnawà:ke had a higher exposure to second-hand smoke in the home as compared to Canadian children: 3.2% versus 1.8%
  - The Tobacco Control Act of Québec prohibits smoking in vehicles when children and youth under 16 years of age are present[51]
- **19.0% of children regularly exposed to second-hand smoke had been told that they have asthma versus 7.3% of children not regularly exposed**

[50] Health Canada. Dangers of second-hand smoke. https://www.canada.ca/en/health-canada/services/smoking-tobacco/avoid-second-hand-smoke/second-hand-smoke/dangers-second-hand-smoke.html. Accessed July 7, 2017.
[51] Québec Tobacco Control Act http://www.legisQuébec.gouv.qc.ca/en/ShowDoc/cs/L-6.2

Portrait of former smokers

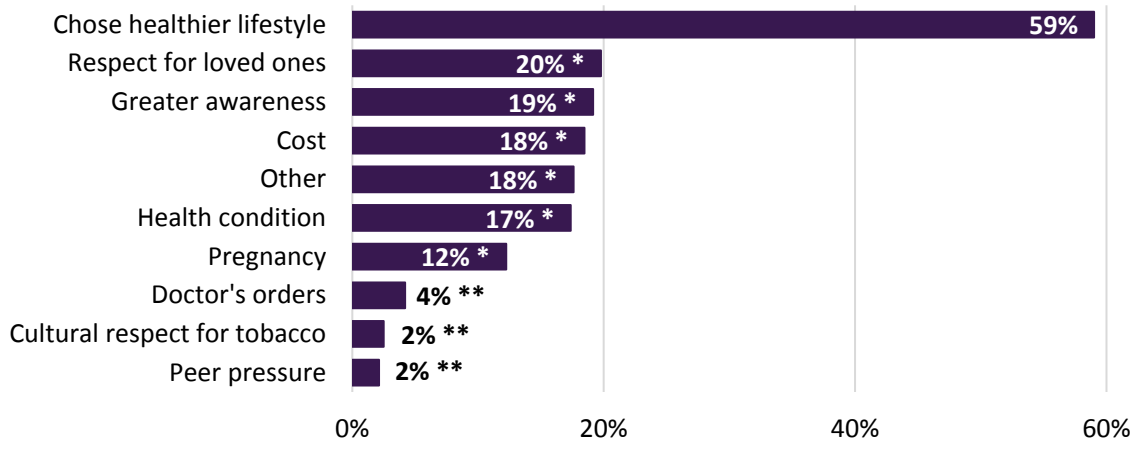
In addition to the 15.4% of current smokers in Kahnawà:ke, **the currently non-smoking respondents were fairly evenly split between former smokers (40.2%) and those who had never smoked (44.4%)**.

- among ex-smokers, about two-thirds (65.6%) had been daily smokers
- **on average, they had smoked for 17 years before quitting,** the range being from 1-64 years of smoking
- **more than three quarters (78%) of ex-smokers had not smoked for at least three years**
- the average age at which Kahnawa'kehrò:non respondents had *stopped* smoking was about 32 years old and did not differ between men and women
- 69% of former smokers *had begun* smoking before the age of 18 years

Many reasons were given by ex-smokers to explain why they quit (see Figure 33):

- By far, the most common reason was to have a healthier lifestyle (59%)
- Other common reasons included: out of respect for loved ones; having a greater awareness about the ill effects of cigarettes on health; presence of a health condition; and cost

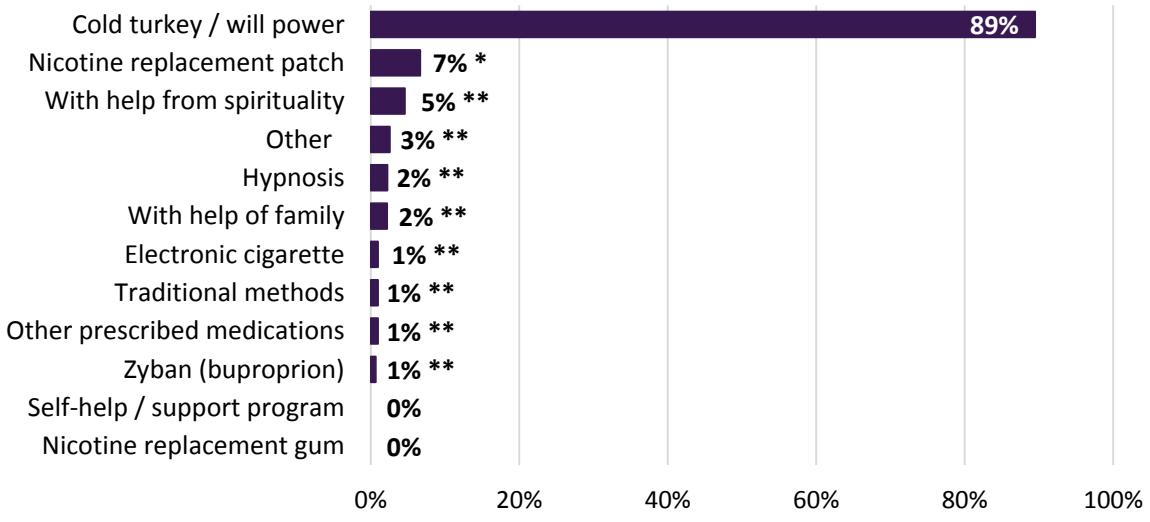
Figure 33. Reasons for quitting smoking, by ex-smokers in Kahnawà:ke aged 12 and older



Regional Health Survey, 2015, sample representing 2725

- Most Kahnawa'kehrò:non who had successfully quit smoking had done so "cold turkey" (89.5%) i.e., without using nicotine replacement gums, patches, any medications, or seeking specific counselling or services to help them (see Figure 34)
- Only a small number used additional help resources, nicotine replacement or medications. A small number of individuals who report quitting "cold turkey" also reported receiving help from spirituality (3.3%) as well as from family (2.3%):
    - Most of the people who used additional resources to help them quit were between the ages of 45-64 years old when they stopped smoking;
    - It isn't clear from the survey why most former smokers did not use other methods and medications to help them in quitting. There is robust evidence that nicotine replacement (e.g.; patches, gum), medication (e.g.: Zyban & Champix), and support programs can help to make any attempt to quit more likely to succeed. It is possible that many people were unaware that these supports exist, did not feel they would need them, or that they had already tried them and did not find them useful personally. It is also possible that people did not know how to access these supports.

Figure 34. Methods used to quit smoking, by ex-smokers in Kahnawà:ke aged 12 and older



Regional Health Survey, 2015, sample representing 4077

Youth awareness of information sources on tobacco and resources to quit smoking

A vital part of helping Kahnawa'kehrò:non to quit smoking (and to prevent smoking in the first place) includes equipping them with the information they need to be aware of the risks to their health, as well as providing them with resources to help them quit. Awareness of or exposure to these resources was not directly addressed in the Regional Health Survey. However, we do have some information on **youth awareness** via the Tobacco Control School Bus Survey among youth in 2016:

- **Slightly more than half of youth surveyed (51.5%) thought commercial tobacco was "definitely" harmful to their health while another 43.5% thought it was "probably" harmful**
- 22.5% of youth surveyed had never received any sort of information about tobacco product use
- The youth who *had* received information had most commonly accessed it through their school and/or coach
- 19.6% of youth were not aware of the presence of resources to help them quit smoking

These results show that a lot of work has been done to raise youth awareness, but there is still some room for improvement.

Smoking and Chronic Diseases

Although it is incredibly positive that so many people who used to smoke have now quit, the years during which they did smoke do not entirely disappear and still lead to increased risk of many health conditions. In addition, many people who have never smoked or who have quit have also had significant second-hand smoke exposure over the last several decades, and as we have seen above, a high proportion of current non-smokers are still being exposed to second-hand smoke. This is important to note because the risk of chronic diseases increases the more someone is exposed over time.

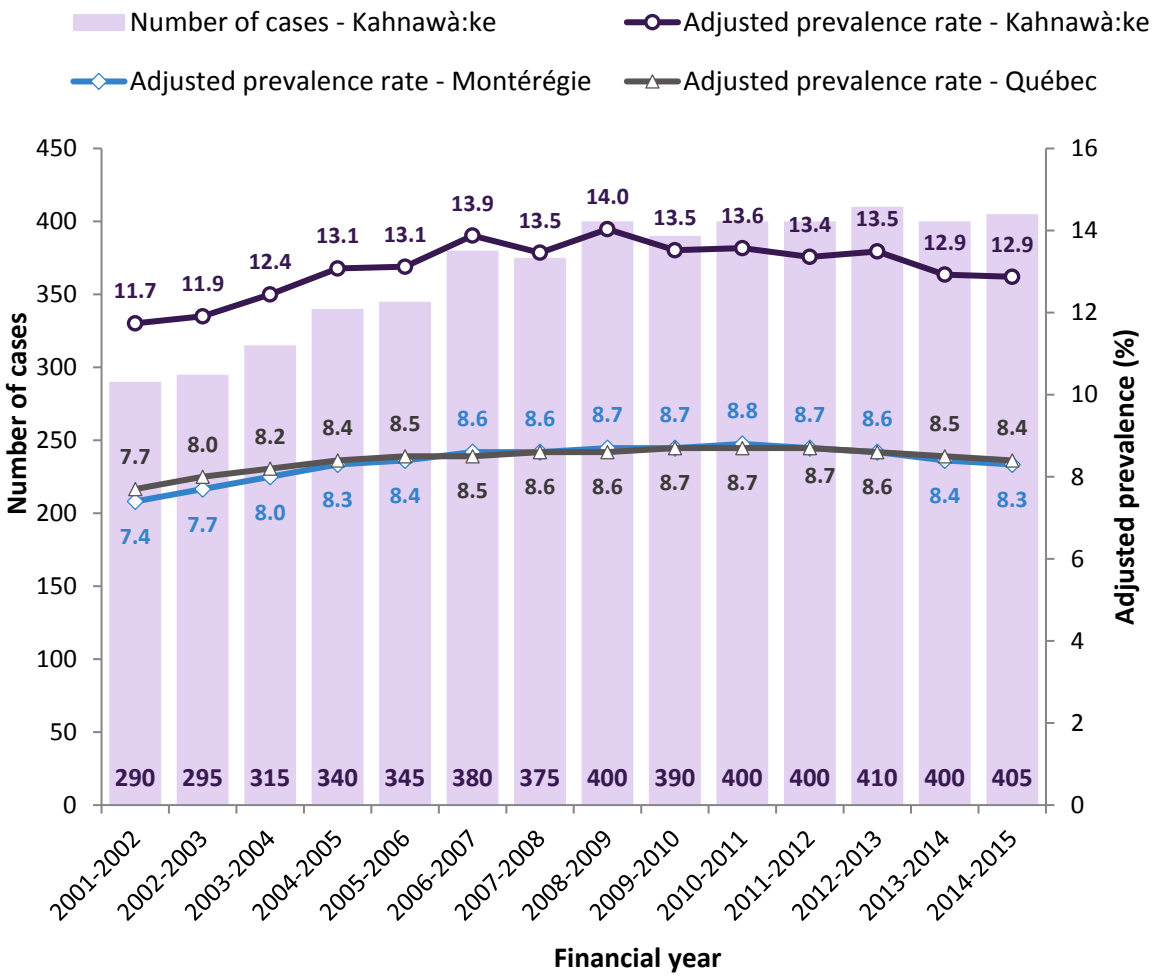
What chronic diseases are related to smoking and smoke-exposure?
Because there are so many toxins in tobacco products such as cigarettes, there are many diseases that are linked to their use, so this list focuses on some of the most common. While most people will readily make the link between smoking and lung cancer, it is important to remember that smoking is also associated with the vast majority of other types of cancer. In addition, Chronic Obstructive Pulmonary Disease (COPD, also formerly called emphysema or chronic bronchitis), hypertension (high blood pressure), cardiovascular disease (heart attacks, strokes, congestive heart failure) are all caused in part or in whole by tobacco product exposure. **While lung cancer rates in Kahnawà:ke are similar to the provincial rates, all of the chronic diseases listed above are more common in Kahnawà:ke.**

Chronic Obstructive Pulmonary Disease (COPD)

COPD is an often-devastating disease where people feel chronically short of breath, have very low energy and are much more susceptible to infections like pneumonia.

- **12.9% of adults over 35 years of age in Kahnawà:ke have been diagnosed with COPD**
- **The proportion of the population diagnosed with COPD in Kahnawà:ke is <u>one and a half times higher than in the Montérégie and Québec (see Figure 35)</u>**
    - This is likely a reflection of high rates of smoking in the last 10-30 years, and high rates of second-hand smoke exposure. Even with the large numbers of people who have quit smoking in recent years, we can expect the proportion of people with COPD to stay high over the next few years because of prior exposure.
    - To reduce it over the next 10-20 years, Kahnawà:ke will need to continue to work on preventing non-smokers from starting to smoke, to prevent non-smokers from being exposed to second-hand smoke (for example in workplaces like restaurants, and in homes) and to help more current smokers in their attempts to quit.

Figure 35. Number of cases and adjusted prevalence of COPD, population 35 years and more, Kahnawà:ke, Montérégie and Québec, 2001-2002 to 2014-2015

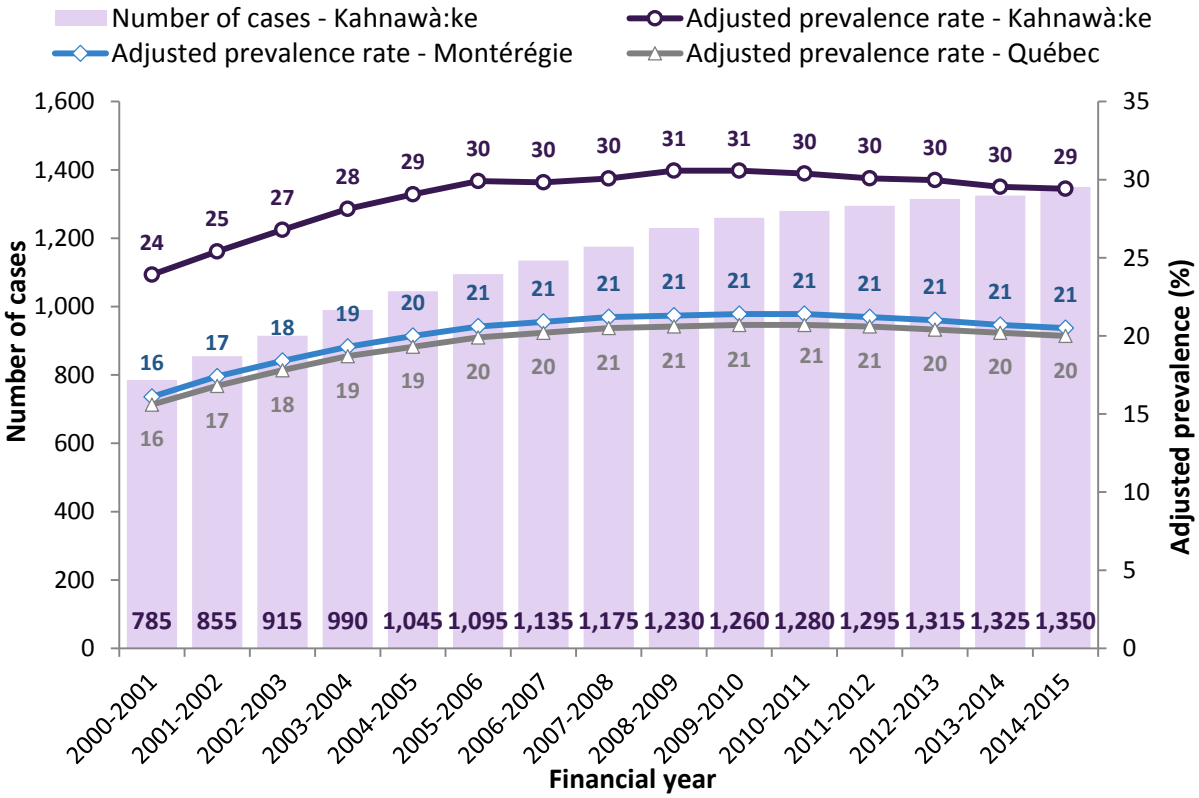


Source : INSPQ, Système intégré de surveillance des maladies chroniques du Québec (SISMACQ).
Production : équipe Surveillance de l'état de santé de la population, DSP de la Montérégie, février 2017.

Hypertension

- **29.4% of adults in Kahnawà:ke over the age of 20 have been diagnosed with hypertension** (high blood pressure). This means about 1350 people.
- **The proportion of the population affected is <u>almost one and a half times higher in Kahnawà:ke compared to Québec and Montérégie (see Figure 36)</u>**
- The prevalence of this condition is in part related to tobacco smoking, and is also affected by physical activity levels, salt intake, obesity, diabetes, alcohol intake and other factors

Figure 36. Number of cases and adjusted prevalence of hypertension, population 20 years and more, Kahnawà:ke, Montérégie and Québec, 2000-2001 to 2014-2015

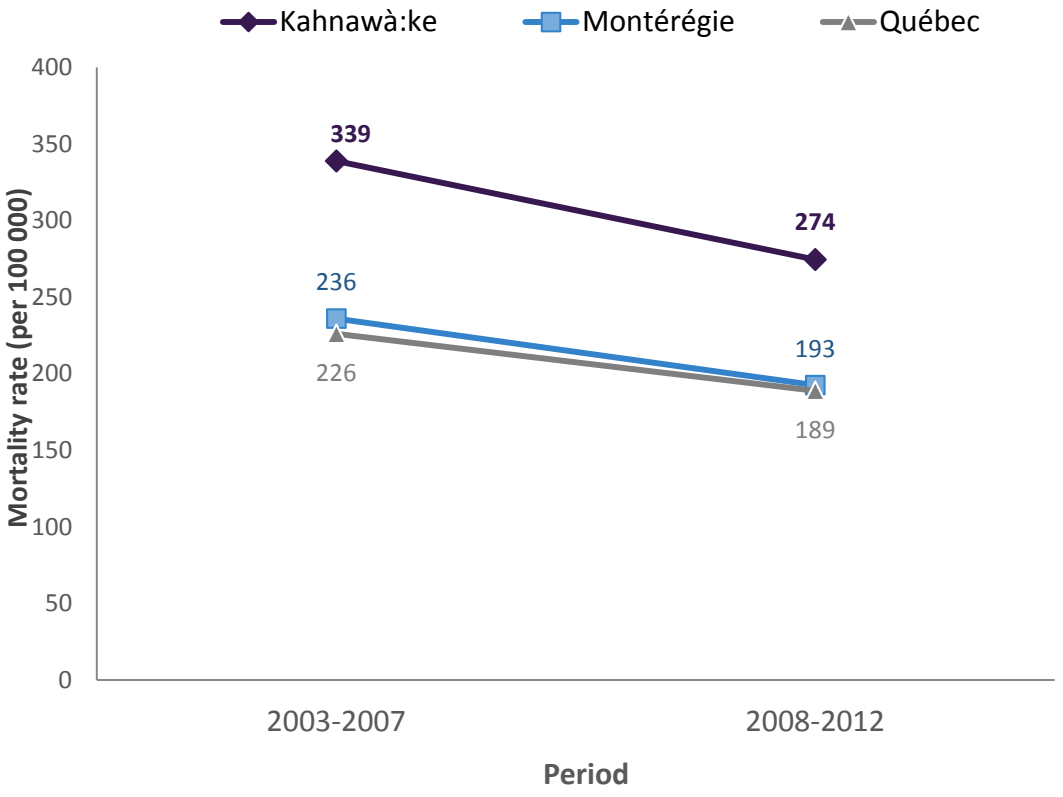


Source : INSPQ, Système intégré de surveillance des maladies chroniques du Québec (SISMACQ).
Production : équipe Surveillance de l'état de santé de la population, DSP de la Montérégie, février 2017.

Cardiovascular Diseases

- **The population mortality (death) rate from vascular diseases (principally heart attacks, congestive heart failure, strokes) were 1.4 times higher in Kahnawà:ke compared to the province and region from 2003-2012 (See Figure 37)**
- **A positive note is that the mortality rate from these diseases declined over time in all three places**, likely in part from decreased tobacco-smoking in all of these populations, and in part due to improved medical therapies for these conditions

Figure 37. Adjusted mortality rate for diseases of the circulatory system, Kahnawà:ke, Montérégie and Québec, 2003-2007 to 2008-2012



Sources : MSSS, Fichier des décès; Régie de l'assurance maladie du Québec (RAMQ), Fichier d'inscription des personnes assurées (FIPA).

Areas for Action Regarding Tobacco Smoking and Smoke Exposure

When reviewing this portrait of tobacco use and smoke exposure in Kahnawà:ke, it is clear that the community has already taken some important steps to reduce the use of tobacco products in the community and to prevent the many significant health risks associated with them. The portrait also shows us several areas where more can be done to reduce these health impacts on the community. We suggest the following:

1. **Add reducing tobacco-smoking and second-hand smoke exposure as a priority in the Community Health Plan:**
   Diseases inextricably linked with tobacco smoke exposure (COPD, cardiovascular disease) affect almost as many people in the community as diabetes and hypertension, themselves long-established (and rightly so) as health priorities. Reducing the significant health impacts of smoking and second-hand smoke exposure will require implication of all of Kahnawà:ke's organizations, including political leadership at the Mohawk Council of Kahnawà:ke (MCK), appropriate enforcement of laws and regulations by the Kahnawà:ke Peacekeepers, prevention messaging and communication from KSCS and the Tobacco Working Group, and health care and medical cessation support from the KMHC.

2. **Create and enforce policies, laws and regulations that protect Kahnawa'kehrò:non from smoke exposure:**
   Regulations and laws have been one of the most effective and evidence-based ways to protect non-smokers from the harmful effects of second-hand smoke in much of the world. They have also been very effective to reduce new uptake of smoking, and a persuasive motivator to quit smoking for many people. Kahnawà:ke currently has a very different regulatory and enforcement landscape from the province and region surrounding it. While we recognize that many people in the community benefit economically from work within tobacco production or retail, there is a clear need for discussion on finding a regulatory approach that adequately protects the health of community members. It is important to consider that Kahnawà:ke's specific history with traditional tobacco use and with commercial tobacco production has led to a variety of strongly held positions by different community members. Even so, it is worth noting that parallel conflicting interests of health protection and of industries that benefit from sales of harmful products (tobacco production and otherwise) have been present in all regions where such effective public policies have been enacted. Development of alternate economies and industries that do not rely on toxic products are a key element in reducing the harms from tobacco smoke exposure.

Specific laws, regulations and policies that could be put into place in Kahnawà:ke include:

- **Raising the minimum price of tobacco products**
- **Reduce tobacco advertising and marketing**
- **Reduce density of tobacco sales outlets**
- **Enforce existing laws regarding the minimum age to purchase tobacco products and not smoking in cars when a child is present**
- **Eliminating indoor-smoking** to protect children, workers and non-smokers and enforce these laws where they are already in existence
    - Enhance MSI and CNESSST participation among community workplaces and commit to risk-free work environments for employees

3. Raise community awareness to reduce second-hand smoke exposure and smoking initiation:

- Use mass media (radio, billboards, posters) & social media (Facebook) campaigns to:
    - enhance community awareness of second-hand smoke exposure in cars, homes, restaurants, and workplaces and the harms related to this
    - correct common misperceptions (e.g.: family members are exposed to significant second-hand smoke *even with* an open window)
- Reduce smoking in homes through grassroots campaigns like the Blue Light campaign, mass media messaging, and sharing of personal stories of change and success
- Better help youth understand the risks of commercial tobacco products through school curriculum and events or through recreation programs

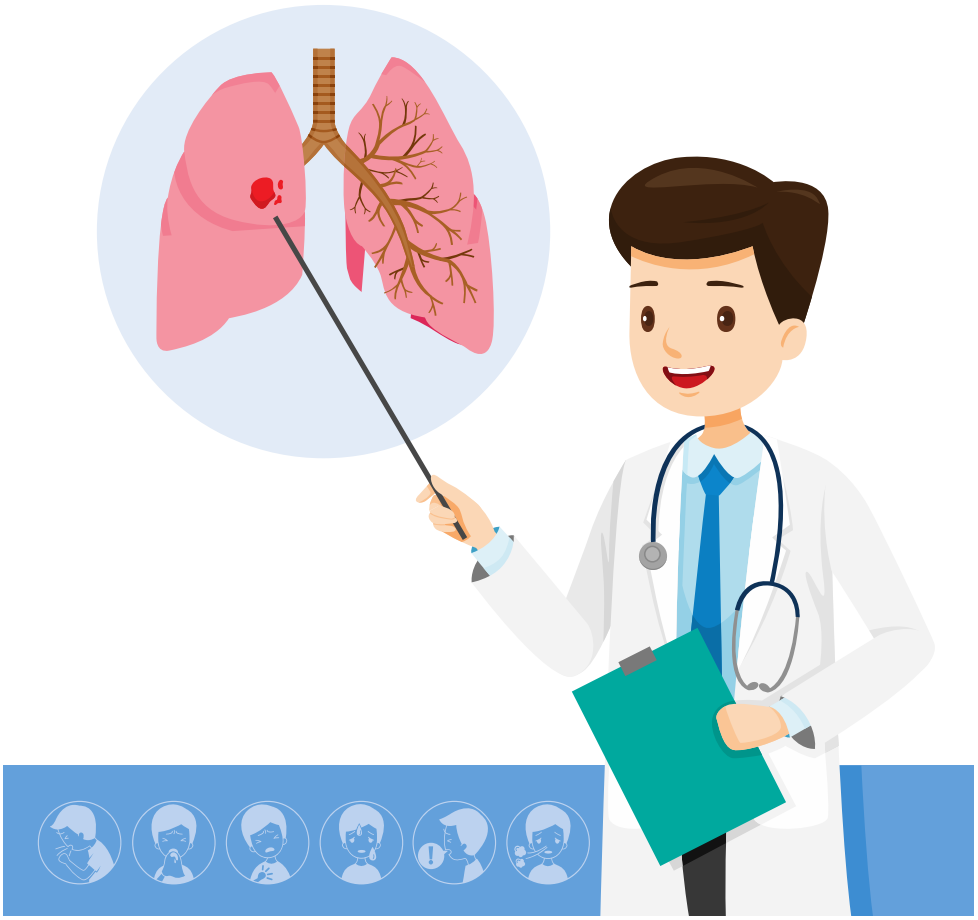
4. Enhance awareness of and use of smoking cessation aids and supports

Many people in Kahnawà:ke have successfully quit smoking, but few report using specific aids (such as nicotine patches, medication like Champix, or formal support lines). Although not everyone will need these additional supports, they can greatly enhance the probability of quitting successfully on any given try. We need to make sure there is good accessibility to and awareness of these supports:

- Medication aids such as nicotine replacement therapy (patches, gum) and varenicline (Champix) are covered by the NIHB program and by the RAMQ. These can be accessed either by prescription from a doctor and some directly through a pharmacist without a prescription
- Social supports such as Quitlines (telephone line to call or text when having a craving or needing support)
- Enhance clinical identification of smoking as a risk factor during medical encounters

5. Continue health surveillance

- Add questions to the next Regional Health Survey about tobacco chewing products, e-cigarettes, shisha etc
- Continue to measure the prevalence of conditions like COPD, hypertension, and cardiovascular mortality, in collaboration with the regional public health department



Chapter 4:

Substance Use & Addictions

Summary of Key Points:

- **A strong majority of Kahnawa'kehrò:non surveyed felt drug and alcohol abuse are important challenges facing the community (81% of adults, 65% of youth, 15-17 years old):**
    - Most adults felt the situation was worse (36%) or unchanged (35%) over the past year
    - Most youth felt the situation was worse (29%) or unchanged (24%) over the past year
- 36% of Kahnawa'kehrò:non adult men & 42% of adult women surveyed reported that they did not drink alcohol at all in the past year (complete abstinence)
    - Canada-wide only just over 20%[52] of people abstain completely from drinking alcohol and only 18%[53] do so in Québec
- **Among Kahnawa'kehrò:non youth aged 12-17 years, only 33% reported consuming <u>any</u> alcohol** in the past year
    - compared to 45.4% among Québec youth
- Despite high numbers of people that report not drinking at all, **among those that drink, it is common to drink excessively and binge:**
    - 69% of adults who drink report heavy drinking *at least once in the last year*
    - **42% of the adults who drink report heavy drinking episodes <u>*at least once per month*</u> over the last year**
        - **In comparison, only 17.9% of Canadians and 22.9% of Québecers (aged 12 or older) who drink at all report that binge levels of consumption at least once per month**
    - Heavy drinking in the past year was higher among men (46%) vs women (38%)
    - Heavy drinking was most common in the 18-34-year-old and 35-54-year-old age groups (49% and 52% of population respectively)
    - The majority of youth that drink at all reported heavy drinking at least once in the last twelve months (72%)
        - Note that because only one third of youth drink anything, overall this means 22% of *all* youth report drinking heavily
    - **42% of youth who drink at all report heavy drinking episodes <u>*at least once per month*</u> over the last year**
        - This translates to 13% of *all* youth in Kahnawà:ke
- The abuse of alcohol or addiction to alcohol is the most common substance-related problem for which people seek help at KSCS

[52] http://healthycanadians.gc.ca/publications/department-ministere/state-public-health-alcohol-2015-etat-sante-publique-alcool/alt/state-phac-alcohol-2015-etat-aspc-alcool-eng.pdf
[53] https://www.inspq.qc.ca/sites/default/files/publications/2137_consommation_alcool_Québec.pdf

- 18.9% of Kahnawa'kehrò:non aged 12 or older reported using cannabis (marijuana) at least once in the last year
    - This compares to 28% of individuals 12 years of age or older in other First Nation communities in Québec as per the 2015 RHS
- **Rates of marijuana use are highest among younger people**
    - 30% of youth 12-17 years
        - Compared to 40.7% of youth 12-17 years in other First Nations communities in Québec in 2015.
    - 45.9% among 18-24-year olds
    - 40.2% among 25-34-year olds
- The abuse of or addiction to cannabis (marijuana) is the second most common substance-related problem, for which people seek help at KSCS.

- Opioid medications were dispensed by a pharmacy to approximately 980 individuals from Kahnawà:ke in 2015
    - Rate of pharmacy-dispensing of opioids is similar to other First Nations in Québec and in Canada
    - Most will of these prescriptions are likely to represent appropriate use of these medications for health reasons
- There was a slight increase in the number of people seeking services for addiction to opioids at KSCS in 2015 relative to the prior 3 years

- **44% of adults felt gambling was an important challenge facing the community**
    - 33% of adults felt no progress was being made on gambling issues
    - 31% felt the situation was worsening
    - 33% responded they did not know if the situation had changed for good or bad in the past years
- 31% of youth 15-17 years old felt gambling was an important community challenge
    - 33% of youth felt some or good progress had been made on this issue
    - 38% felt there had been no progress
    - 26% felt the situation was worsening over the past year
- The majority of adults (18 years and older) in Kahnawà:ke (68%) had gambled in some way in the last year, similar to other First Nations in Québec in 2008
- Gambling was more common among women (75%) than men (60%); this was also the case in the 2008 RHS in other First Nations in Québec
- **11% of people who gambled had bet more than they could afford to lose**
- **11% of people who gambled had borrowed money from others to do so**

Introduction: Substance Use, Substance Abuse and Addiction

In Kahnawà:ke, addictions and substance abuse combined were identified, through community consultation, as one of the 7 priorities in the 2012-2022 Community Health Plan (CHP). These issues have been a health priority since the first CHP in 1998. Other First Nations communities have also identified substance abuse and addictions as important priority health issues.

There is a lot of diversity when we talk about substance use, substance abuse and addiction. In general, we are talking about psychoactive substances that, when used, affect brain function in some way. Some people in Kahnawà:ke refer to these substances as *mind changers*. There are substances that have been present in human society for many years (e.g.: alcohol) and others that are emerging as new concerns, (e.g.: prescription medication abuse). Additionally, some people can have *behavioural* addictions, with pathologic gambling behaviour being one of the most prominent examples of this.

There are many different beliefs and feelings about substance use. Some people will even have very different beliefs and feelings about one substance vs another substance. Even so, each of the psychoactive substances discussed here and the way they are used can have significant detrimental health effects on physical, mental and emotional states of the people who use them, and also on the people surrounding them. This report describes how common use of several psychoactive substances is in Kahnawà:ke.

Community perception of alcohol and drug abuse

When surveyed in 2015**, 8 of 10 (81%) of adults felt that alcohol and drug abuse are important challenges facing Kahnawà:ke**, while only 8% felt that low rates of alcohol and drug abuse was "a strength of the community". Most adults either felt the situation was worsening (36%) or unchanged (35%), while only 8% felt at least some improvement had been made in the last year.

A majority of youth aged 15-17 years (65%) also felt alcohol and drug abuse are important community challenges; among them, 14% felt at least some improvement had been made in the last year while 24% felt there was no progress, and 29% felt the situation was worsening.

Alcohol Consumption, Misuse, Abuse and Dependency:

Excessive use of alcohol is an important root cause of more than 200 health problems. These include many cancers (e.g.: liver cancer, throat cancer, colon cancer), liver diseases such as cirrhosis and hepatitis, damage to other organs such as pancreatitis and cardiovascular disease, worsening of chronic diseases like diabetes and even predisposition to some infections. Alcohol consumption during pregnancy can lead to Fetal Alcohol Spectrum Disorder (FASD) and affect early childhood development. In addition to the long list of physical effects on health, excessive alcohol use also leads to higher risks of violence, severe injuries and suicide, and is associated with other mental health disorders like depression and anxiety. **In fact, the World Health Organization lists harmful alcohol use as the third leading risk factor for premature deaths and disabilities in the world,** not far behind smoking and hypertension. It also recognizes that many of the harmful effects from alcohol are more likely to occur in younger people.[54]

Even so, alcohol use on a population level is complex. For many people, there can be some social benefits associated with responsible alcohol consumption, although it is important to note that even these benefits can coincide with health risks[55]. Further, some community members may benefit economically from alcohol production or sales.

In comparison to the use of many illicit drugs, excessive alcohol use is often perceived by much of the general public as "normal." There are any number of different philosophical and spiritual views on how much, if any, alcohol use is "normal", "safe" or "morally right", but for health purposes, these norms are defined by the Canadian Low Risk Alcohol Drinking Guidelines[56] (see BOX A on next page).

[54] *Global strategy to reduce the harmful use of alcohol.* (2010) World Health Organization. http://apps.who.int/iris/bitstream/10665/44395/1/9789241599931_eng.pdf?ua=1
Global status report on alcohol and health – 2014 ed. World Health Organization. http://www.who.int/substance_abuse/publications/global_alcohol_report/msb_gsr_2014_1.pdf
[55] https://www.canada.ca/content/dam/canada/health-canada/migration/healthy-canadians/publications/department-ministere/state-public-health-alcohol-2015-etat-sante-publique-alcool/alt/state-phac-alcohol-2015-etat-aspc-alcool-eng.pdf
[56] http://www.ccsa.ca/Eng/topics/alcohol/drinking-guidelines/Pages/default.aspx

Box A
Canadian Low-Risk Alcohol Drinking Guidelines:

To reduce short-term heath harms:
Women: Maximum 3 drinks on any single occasion
Men: Maximum 4 drinks on any single occasion

To reduce long-term health harms:
Women: Maximum 10 drinks in a week; no more than 2 a day on most days
Men: Maximum 15 drinks in a week; no more than 3 a day on most days

It is recommended not to use any alcohol at all:

- During pregnancy, when planning to become pregnant, and before breastfeeding
- When driving, using machinery or tools
- Before or during any activities that require judgement, physical skill, balance and endurance
- When living with mental or physical health problems

What is a "standard" drink:
12oz (341mL) of beer with 5% alcohol content
5oz (142mL) of wine with 12% alcohol content
1.5oz (43ml) of hard liquor with 40% alcohol content

57

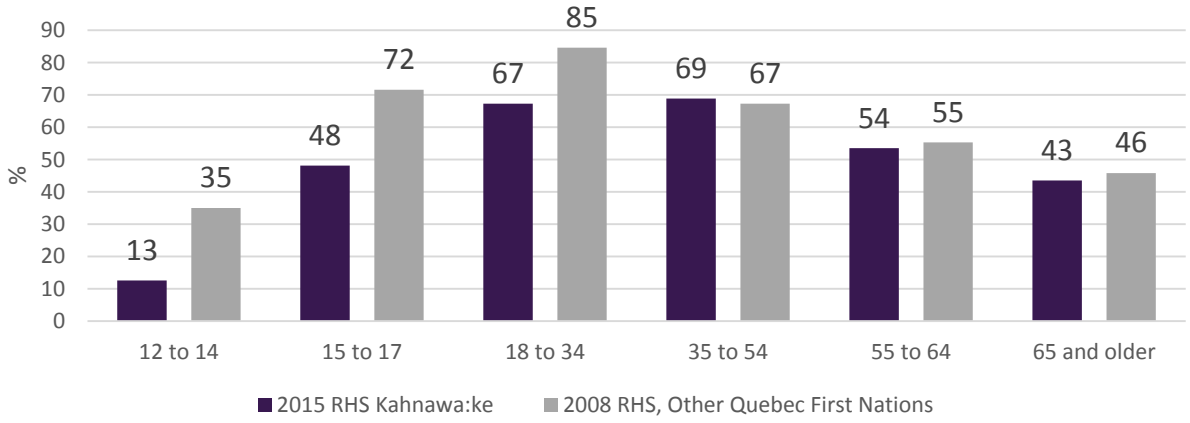
[1]Image adapted from: http://www.ccsa.ca/Eng/topics/alcohol/drinking-guidelines/Pages/default.aspx

General alcohol consumption patterns in Kahnawà:ke

In 2015, **36% of Kahnawa'kehrò:non adult men & 42% of adult women surveyed reported that they do not drink alcohol at all (complete abstinence)**. This is a higher proportion compared to about 32% of men and 32% of women in other First Nations communities in Québec as per the 2008 RHS report. For another comparison, Canada-wide only just over 20%[58] of people abstained completely from drinking alcohol in 2015, and only 18%[59] of Québecers did so. Among Kahnawa'kehrò:non youth (12-17 years old), only 33% reported consuming any alcohol in the past year compared to 45.4% among Québec youth. Overall, this is good for the health of these individuals who together make up a significant proportion of the population of Kahnawà:ke

Even so, 61% of Kahnawa'kehrò:non over the age of 18 do drink at least some alcohol. In Kahnawà:ke, alcohol consumption is most common in the 18-34 and 35-54 age groups (67% and 69% respectively); this is similar to what was seen in other Québec First Nations in 2008. Canada-wide, the highest proportion of people drinking is in the 30-34 year-old age group.

Figure 38. Consumption of any alcohol in last 12 months (percent), by age group, Kahnawà:ke and Quebec First Nations



[58] http://healthycanadians.gc.ca/publications/department-ministere/state-public-health-alcohol-2015-etat-sante-publique-alcool/alt/state-phac-alcohol-2015-etat-aspc-alcool-eng.pdf

[59] https://www.inspq.qc.ca/sites/default/files/publications/2137_consommation_alcool_Québec.pdf

Figure 39. Consumption of any alcohol in last 12 months, by age group, Kahnawà:ke compared to Québec and Montérégie

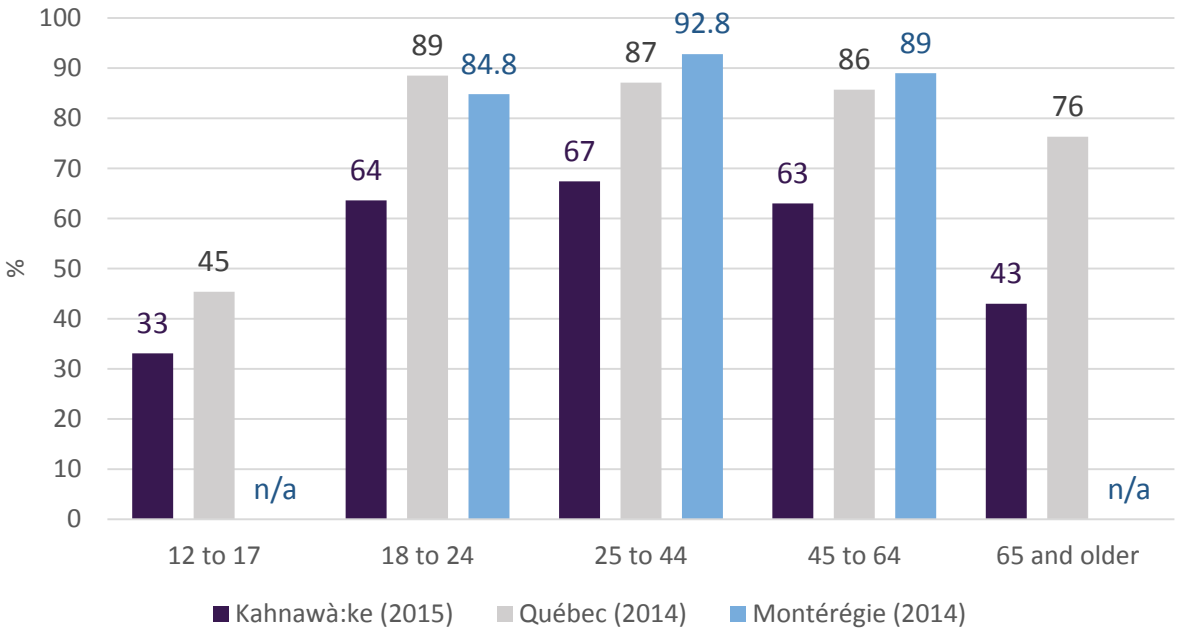
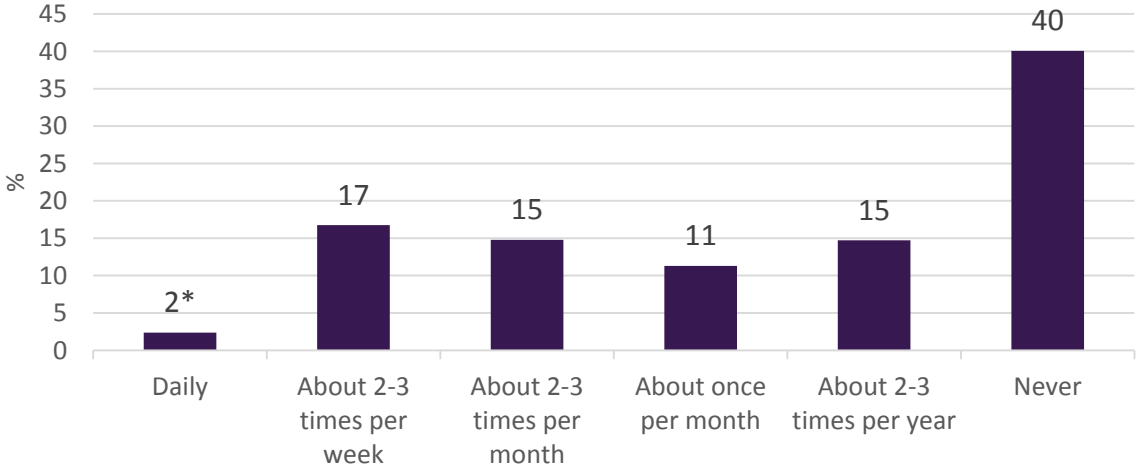
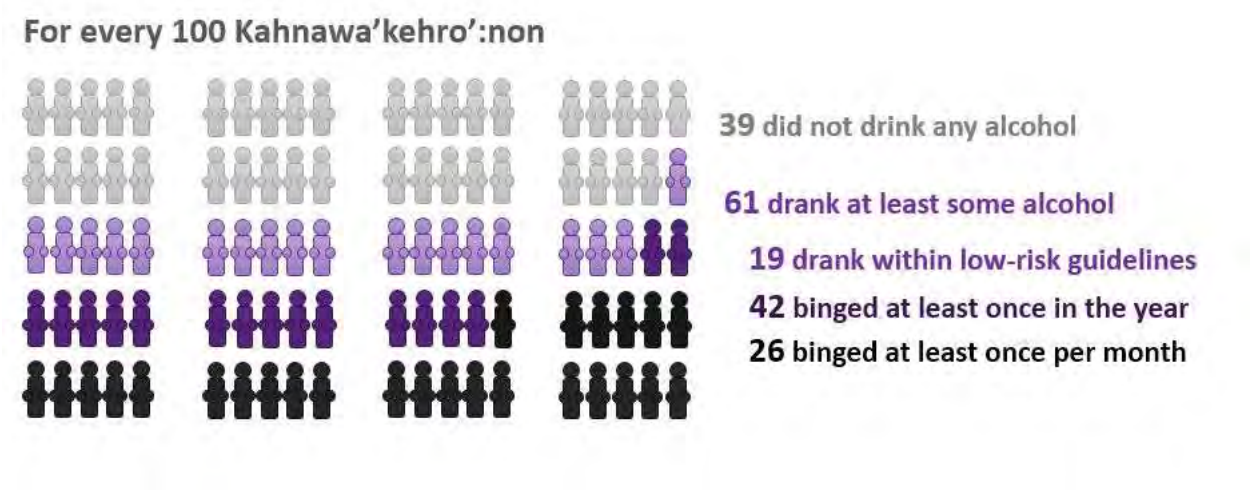


Figure 40. Frequency of alcohol consumption in last 12 months, adults in Kahnawà:ke (2015 RHS)



Alcohol Abuse, Heavy Alcohol Consumption and "Binging"

Although alcohol can be consumed in responsible, moderate ways by many people, there are also particular patterns of use that are noted to be more harmful to people's health. For example, drinking heavy amounts intermittently, such as 15 drinks only one day each week is sometimes described as "binge" drinking. Individual occasions of such heavy drinking (i.e.: more than the low-risk guidelines in Box A) are also often called "alcohol abuse." Heavy drinking occasions like this are associated with increased short-term health risks (such as risk of injury while intoxicated), and **when this is a pattern that happens about once per month or more, it also increases the risk of long-term health effects like cancer, heart disease and liver disease**.



- Even though only 61% of all adults in Kahnawà:ke drink at all, it is important to note that more than two thirds of these adults (69%) reported heavy drinking *at least once in the last 12 months*
    - This means 42% of *all* adults in Kahnawà:ke, (an estimated 2600 people) reported episodic heavy consumption of alcohol at least once in the previous 12 months
- **25% of *all* Kahnawa'kehrò:non aged 12 or older (42% of those who drink at all) reported heavy drinking episodes *at least once per month* over the year**
    - In comparison, only 17.9% of Canadians and 22.9% of Québecers (aged 12 or older) who drink at all report binge drinking at least once per month

- In Kahnawà:ke, heavy drinking in the past year was higher among men (46%) vs women (38%), and most common in the 18-34 year-old and 35-54 year-old age groups (49% and 52% of population respectively)
- Among youth (12-17 years old) although only 33% drank at all, the majority of them (72% of those who drank at all), reported episodic heavy drinking at least once in the last twelve months
    - This is 22.3% of all youth (an estimated 100 individuals)

Heavy Drinking (alcohol abuse/binge) is:
Women: 4 or more drinks in one sitting
Men: 5 or more drinks in one sitting

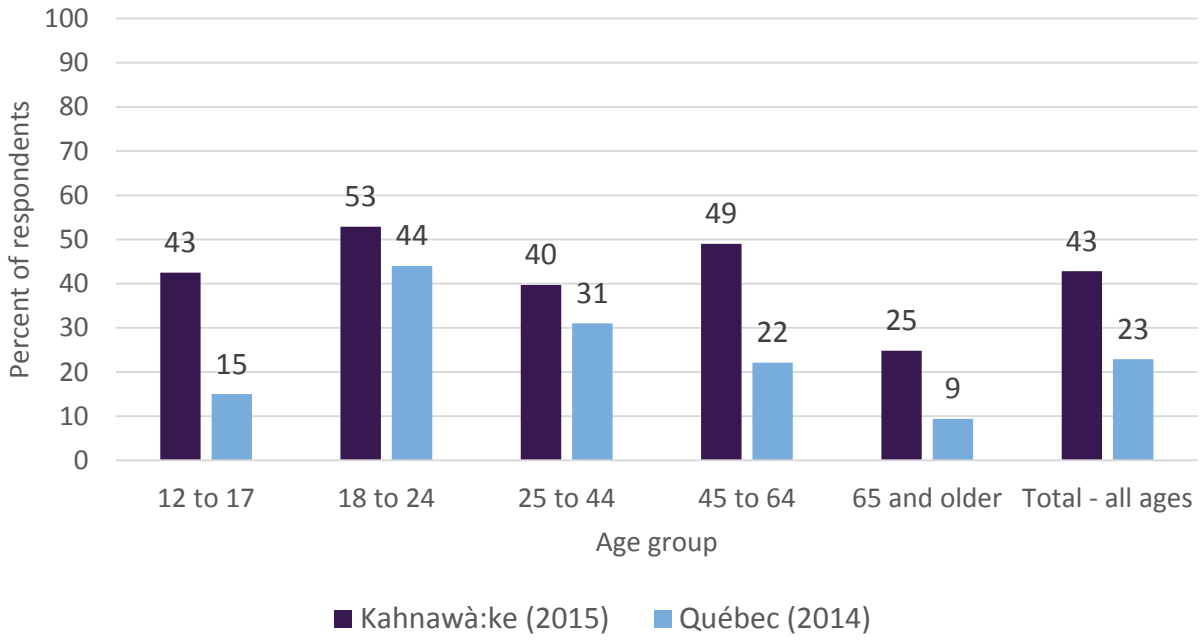
Binge drinking is a pattern of intermittent heavy drinking that leads to increased risk of injury and short term health harms. Doing so once per month or more often also increases risk of chronic health effects like cancer, heart disease and liver disease

- **42% of youth who drink at all** in Kahnawà:ke report heavy drinking episodes *at least once per month* over the year.
    - Note that because only 33% of youth drank at all in the last year, this translates to 13% of *all* Kahnawa'kehrò:non youth. These figures are similar to those for Québec in 2014.

Although binge drinking is a significant health problem in Kahnawà:ke, it is lower than reported in the 2008 RHS for First Nations in Québec where 55.2% of all adults reported binge drinking at least once in the last year; 40.4% at least once per month.

The next three graphs show the rate of heavy drinking at least once per year and at least once per month in Kahnawà:ke (2015) compared to other First Nations in Québec (2008)[60] in different age groups and the rate of heavy drinking at least once per month in Kahnawà:ke (2015) compared to the general population of Québec (2014)[61]. These are the percentages *among people who drink at all* in all three graphs. Note that the age categories are different in the first graph compared to the second and third, this is because the Institute of Public Health of Québec and the First Nations of Québec and Labrador Health and Social Services Commission have chosen different groupings of ages for their publications. In order to compare rates with both we have to analyze our own data in the two different groupings. We see somewhat higher rates of heavy drinking/binge alcohol use in Kahnawà:ke than Québec in 2014, but somewhat lower rates of heavy drinking/binge alcohol use compared to other First Nations in 2008.

Figure 41. Binge drinking at least once per month in last twelve months by age group, *among drinkers only*, Kahnawà:ke compared to the general population of Québec



[60] Québec First Nations Regional Health Survey, *Chapter 9, Alcohol, Drugs and Gambling*. 2008. ISBN: 978-1-926553-62-7 http://cssspnql.com/docs/concours---mon-mieux-tre/chapter-9.pdf?sfvrsn=0

[61] https://www.inspq.qc.ca/sites/default/files/publications/2137_consommation_alcool_Québec.pdf

Figure 42. Binge drinking <u>at least once in last twelve months</u> by age group, *among drinkers only*, Kahnawà:ke compared to other First Nations of Québec

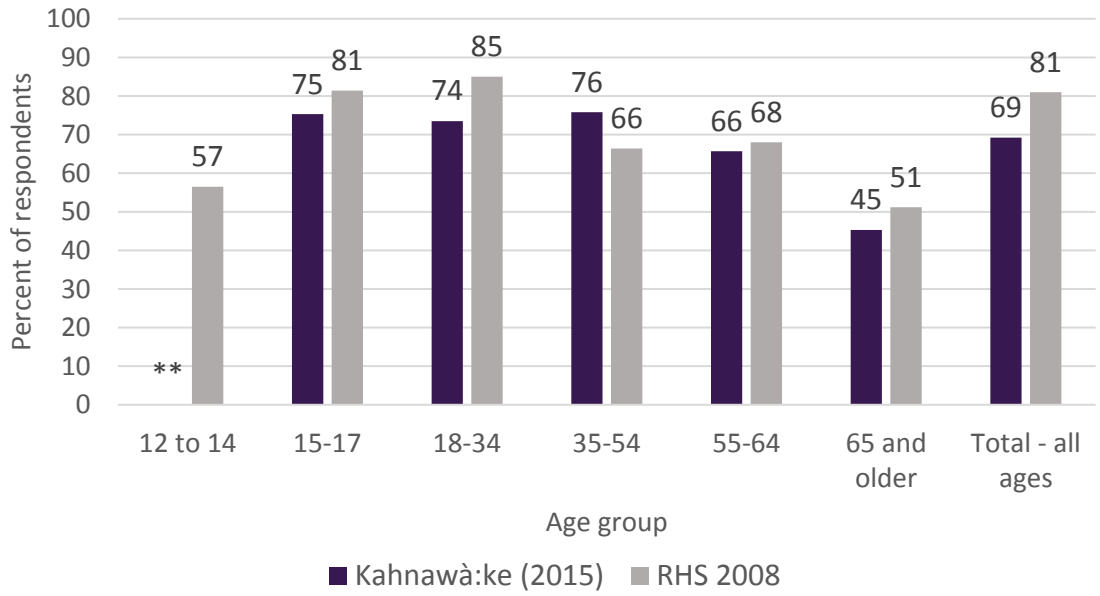
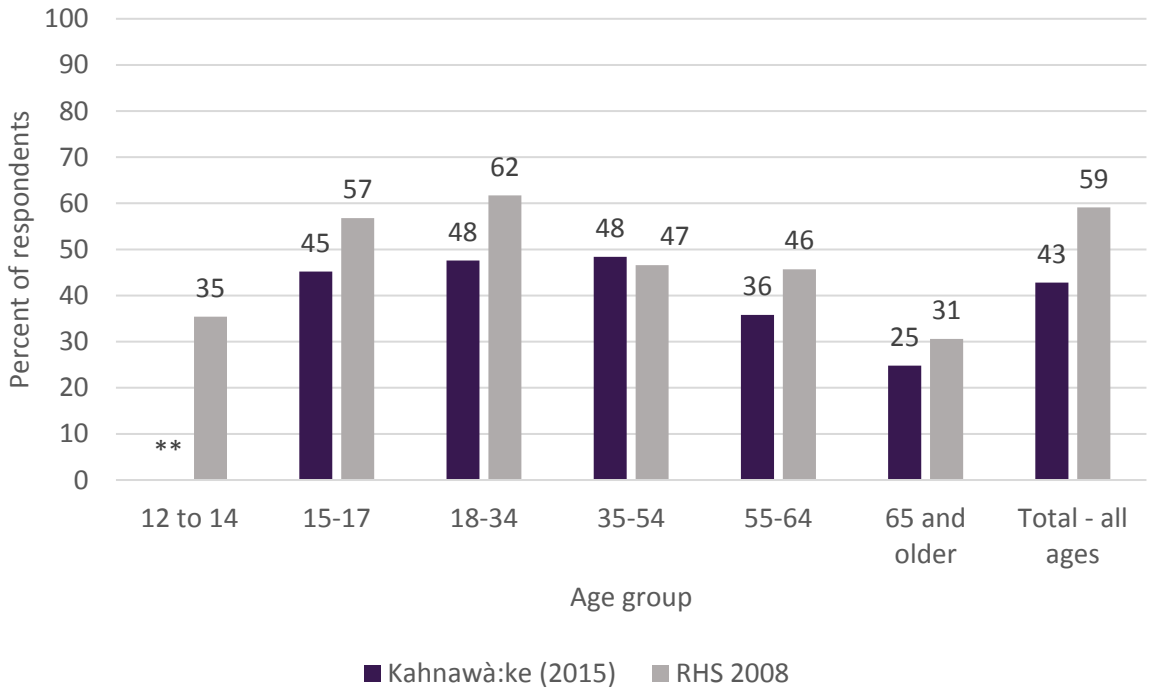


Figure 43. Binge drinking at least once per month in last year by age group, *among drinkers* only, Kahnawà:ke compared to other First Nations of Québec



Alcohol abuse or alcohol addiction is also the most common substance-related problem that people seek specific treatment for at KSCS in Kahnawà:ke. The number of people seeking treatment through KSCS has stayed stable over 5 years at approximately 65 individuals seeking help in any given year.

Number of people seeking services at KSCS for:	2012-13	2013-14	2014-15	2015-16	2016-17
Alcohol abuse or addiction	69	139*	61	68	58

*Overlap between attendance at group sessions and individual sessions may account for the discrepancy seen in 2013-14.

Areas for Action on Alcohol Consumption, Misuse, Abuse and Dependency:

Given these statistics about alcohol use, it is clear that reducing binge alcohol use with its associated health harms should be a priority health goal for Kahnawà:ke. There are many evidence-based strategies to reduce the impacts of excessive alcohol use on a population level[62]. These work best when multiple strategies are put into place together. Some examples of effective interventions used elsewhere (some of which are already in place in Kahnawà:ke) include:

- Regulations to reduce the geographic density of stores where alcohol can be purchased, and limiting hours of sale
- Regulations to set and enforce minimum prices for alcohol sales[63,64]
    - In other places in North America, for every 10% increase in price of alcohol, consumption is expected to decrease by more than 7%
    - Public support for price increases is higher if the additional revenue generated is tagged to specifically fund prevention and treatment initiatives[65]
- Well-publicized police ride checks to detect and deter driving under the influence and enhance awareness of the risks in doing so
    - Organizing sober driver services during specific high-risk times like organization holiday parties, Superbowl (e.g.: Operation Red Nose)[66]
- Reduced exposure to alcohol advertising, particularly for youth
- Ensuring laws preventing sales to minors are enforced rigorously
- Ensuring stimulating extra-curricular activities for youth are available
- Grassroots-awareness campaigns to help shift the social normalization of excess alcohol consumption and empower individuals to change
- Enhancing health and social service professionals' use of screening and brief intervention techniques and use of electronic screening and brief intervention tools to identify people with problematic alcohol use patterns and to help people with alcohol consumption issues connect to appropriate care resources

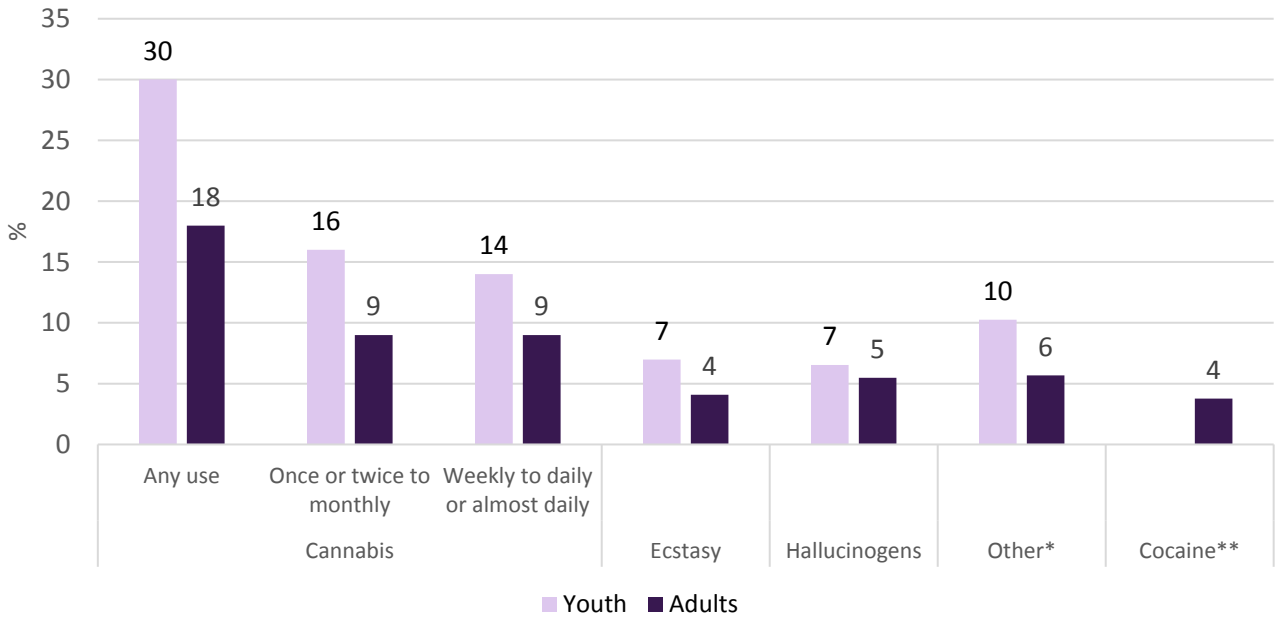
[62] https://www.thecommunityguide.org/sites/default/files/assets/What-Works-Alcohol-factsheet-and-insert.pdf
[63] Wagenaar AC1, Salois MJ, Komro KA. *Effects of beverage alcohol price and tax levels on drinking: a meta-analysis of 1003 estimates from 112 studies. Addiction.* 2009 Feb;104(2):179-90. 10.1111/j.1360-0443.2008.02438.x
[64] Stockwell T, Zhao J, Giesbrecht N, Macdonald S, Thomas G, Wettlaufer A. *The Raising of Minimum Alcohol Prices in Saskatchewan, Canada: Impacts on Consumption and Implications for Public Health*. American Journal of Public Health. no. 12 (December 1, 2012): pp. e103-e110. DOI: 10.2105/AJPH.2012.301094
[65] https://www.thecommunityguide.org/findings/alcohol-excessive-consumption-increasing-alcohol-taxes
[66] https://operationrednose.com/

- Access to social resources and programs like alcoholics anonymous and sharing stories of successful journeys
- Connection to traditional practices and healing methods for people who are seeking care services
- Ensure people with comorbid mental health disorders (like depression, anxiety, schizophrenia, ADHD) are well-treated for these conditions

Drug Use & Abuse in Kahnawà:ke:

The following graph shows the percent of youth (age 12-17 years) and adults (18+ years) who report various types of drug use over the last 12 months. After alcohol, cannabis (marijuana) was by far the most commonly-used psychoactive substance in the community.

Figure 44. Self-reported drug use over last 12 months, Kahnawà:ke 2015



Proportion reporting drug use in last year on Regional Health Survey, 2015.
*Other: amphetamines, heroin, inhalants, methamphetamines, salvia and other. For youth, cocaine is also included here (reports of cocaine were very low among youth so could not be displayed as a separate category).
**Cocaine: displayed for adults only

Cannabis (Marijuana) Use:

Cannabis (marijuana) was the most commonly reported illegal drug used in Kahnawà:ke in the last 12 months. The federal government of Canada has committed to legalizing and regulating marijuana growing, sales & distribution and recreational use in 2018. On a societal level, the aim of this change is to reduce some of the harms associated with the current state of illicit

cannabis (marijuana) use: from concerns of it being laced with more potent drugs, to the income it generates for organized crime, to legal penalties faced by individuals who consume this substance. As in many communities, people in Kahnawà:ke have a variety of opinions about this coming policy change and how it will affect people here in particular.

At the time of writing this document, much of the eventual regulations for legalized marijuana remain unknown. Regardless of the particular measures chosen to be instituted by Canada, Québec and by Kahnawà:ke, it is important to consider the health effects of cannabis (marijuana) use, just as we do for alcohol and tobacco which are legalized and regulated substances. **A number of significant negative health effects of cannabis (marijuana) use have been demonstrated, in particular: increased risk of injuries, long-term effects on respiratory health (like asthma, lung cancer and COPD), effects on youth brain development and cognition, and relationship to mental illnesses (e.g.: schizophrenia, cannabis-induced psychosis, anxiety)[67].**

In Kahnawà:ke, in 2015:

- **18.9% of Kahnawa'kehrò:non aged 12 or older reported using cannabis (marijuana) at least once in the 12 months preceding the survey**
    - This compares to 28% of individuals 12 years of age or older in other First Nation communities in Québec (2015 RHS)
    - Canada-wide in 2015, 12% of people 15 years and older used cannabis at least once in the last year. In Canada, it is most commonly used by young adults and teenagers, with the highest rates of use in youth 15-19 years of age (21%) and 20-24 years (30%)[68]
    - In Québec in 2015, similar patterns are seen with 15.1% of people 15 years and older reporting cannabis use in the last year, with the highest use among those 15-17 years old (31.0%) and 18-24 years (41.7%)[69]
    - In Montérégie in 2015, only 13.7% of people 15 years and older reported any cannabis use

[67] https://www.inspq.qc.ca/sites/default/files/publications/2284_usage_cannabis_Québec_canada_portrait_evolution.pdf
http://cssspnql.com/docs/default-source/ERS-2015/fichesynth%C3%A8se_ers_cannabis_eng.pdf?sfvrsn=0
[68] http://www.hc-sc.gc.ca/hc-ps/drugs-drogues/stat/_2011/summary-sommaire-eng.php
[69] https://www.inspq.qc.ca/sites/default/files/publications/2284_usage_cannabis_Québec_canada_portrait_evolution.pdf

- **30% of Kahnawa'kehrò:non youth aged 12-17 years reported using cannabis (marijuana) at least once in the 12 months preceding the survey**
    - This compares to 40.7% of youth 12-17 years in other First Nations communities in Québec in 2015
- **18% of Kahnawa'kehrò:non adults reported using cannabis (marijuana) at least once in the last year. Among adults, use is skewed to younger adults**
    - **45.9% of 18-24 year olds**
    - **40.2% of 25-34 year olds**
- Among Kahnawa'kehrò:non adults, about half of all cannabis (marijuana) users, (9% of all adults) were infrequent users (once or twice per year to monthly); and half (9% of adults) were frequent users (weekly to daily or almost daily)
- For Kahnawa'kehrò:non youth, just over half of cannabis (marijuana) users (16% of all youth) were infrequent users (once or twice per year to monthly); vs 14% who were frequent users (weekly to daily or almost daily)

Co-use of Alcohol and Cannabis (Marijuana):

- 4% of all respondents (estimated at about 258 people in the community) both binge drink at least once per month *and* use cannabis (marijuana) weekly or daily
    - 43% of those that frequently consume marijuana also abuse alcohol at least once per month
    - 15.3% of those that abuse alcohol at least once per month also consume cannabis (marijuana) frequently

Other Illicit Drug Use in Kahnawà:ke:

Ecstasy:

- 4% of adults and 7% of youth reported having used ecstasy at least one time in the previous year

Hallucinogens (e.g.: LSD, "shrooms"):

- 5% of adults and 7% of youth reported having used hallucinogens in the previous year

Cocaine:

- 3.7% of all people 12 and older reported having used cocaine at least one time in the previous year (almost all of whom were adults)
    - This is much less than reported in other Québec First Nations in 2015 (8.1%)[70] and in 2008 (16%)
    - Even so, cocaine abuse is the third most common substance-related reason, for which, people seek help at KSCS

Other drugs:

- 3.7% of adults reported having used another illegal drug in the previous year (including amphetamines, crystal meth, heroin, hallucinogens, inhalants or salvia)
    - In 2015, 2% of Canadians reported having used any of cocaine/crack, speed/methamphetamine/crystal meth, ecstasy, hallucinogens, heroin or salvia[71]

[70] Regional Health Survey 2015, *Preliminary results, Cannabis Use among First Nations* Fact Sheet http://cssspnql.com/docs/default-source/ERS-2015/fichesynth%C3%A8se_ers_cannabis_eng.pdf?sfvrsn=0

[71] https://www.canada.ca/en/health-canada/services/canadian-tobacco-alcohol-drugs-survey/2015-supplementary-tables.html

People seeking services for substance abuse or addiction at KSCS

From the table below we can see that cannabis (marijuana) abuse/addiction is the second most common substance-related problem for which people seek help at KSCS (after alcohol, as presented earlier in this portrait). The number of people seeking help for marijuana use has remained steady over the last 5 years.

The third most common substance-related problem for which people seek help is cocaine; the number of people has also been stable. Fourth is opioids, the number of users of which has fluctuated more in the last 5 years (from a low of 0 in 2012-13 to 20 individuals in 2015-16).

It is worth noting that many people who use psychoactive substances will use multiple different substances at a time. Some of the individuals who have sought help may have done so for more than one addiction problem.

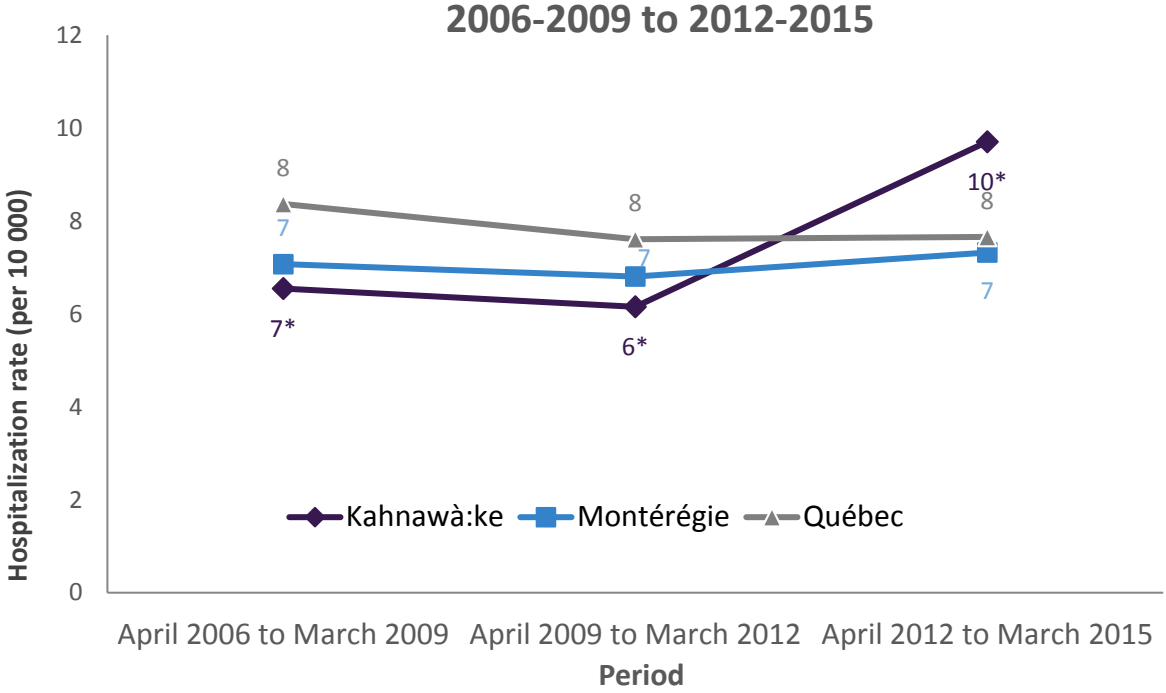
Number of people seeking services at KSCS for:	2012-13	2013-14	2014-15	2015-16	2016-17
Drug abuse or drug addiction	69	155*	79	90	62
Opioids	0	14*	15	20	10
Cocaine	28	48*	28	29	23
Marijuana	35	73*	34	36	26
Other	6	20*	2	5	3

*Overlap between attendance at group sessions and individual sessions may account for the discrepancy seen in 2013-14.

Hospitalizations related to substance abuse

The following graph shows the number of hospitalizations related to substance-abuse per 10,000 people, comparing Kahnawà:ke, Montérégie and Québec. Because Kahnawà:ke has a smaller total population, the numbers are easily swayed from year to year by one or two hospitalization events. Although an increase in Kahnawà:ke was seen in the most recent 3 years, this is likely due to random variation and is not statistically different from the province or region– we will need to review this again in another few years and follow local information like ambulance calls to have a better idea if there is a true trend upwards or not.

Figure 45. Age-adjusted hospitalization rate for substance abuse; Kahnawà:ke, Montérégie and Québec, 2006-2009 to 2012-2015



Sources : MSSS, MED-ÉCHO; Régie de l'assurance maladie du Québec (RAMQ), Fichier d'inscription des personnes assurées (FIPA).

Kahnawà:ke Fire Brigade (KFB) Alcohol/Drug Related Calls

We can see from the table below that alcohol and drug-related calls make up a very small proportion of the total calls received by the KFB and have not changed dramatically over the last 3 years for which we have data. These are likely an underestimate as the link to substance-use may not always be recorded when alcohol or drugs are a factor in the event rather than the main reason KFB is called.

Year	Alcohol/Drug related Calls	Total Calls	% of Total Calls
2014	19	1269	1.50
2015	16	1360	1.18
2016	7	1367	0.51

Prescription Opioid Medication Use and Abuse

Opioid medications are powerful pain relief medications used medically to treat severe, acute pain (e.g.: pain from a major surgery, fractures) as well as for cancer pain and chronic non-cancer pain (e.g.: very severe inflammatory arthritis). Because of how these medications work on the brain, they also have potential to lead to opioid dependence, addiction and overdose. Across North America, opioid misuse, abuse and overdose has been a rapidly growing problem since the 1990's and has reached epidemic levels in Canada and the USA.[72] The root causes of this epidemic are complex and multifactorial. Some of this has been related to increasing rates of prescription of these medications to outpatients, particularly for chronic non-cancer pain.[73] Although people misuse and become addicted to opioids they get by prescription, there is also a significant component from illegal trafficking of opioid drugs. Recently the additional danger of illegal drugs laced with fentanyl (a very powerful synthetic opioid becoming more prominent as a cause of overdoses, particularly in Alberta and British Columbia) has made this crisis even worse.

Overall Québec has not yet seen the same rapid increase of opioid overdose as has been happening in British Columbia and Alberta, and at this point we do not know if this will ever spread to Québec in the same way. Opioid prescribing has been noted to be lower in Québec than in other provinces and it is hard to estimate with precision the burden of opioid addiction. Even so, there have been some recent reports of fentanyl-related overdoses in the greater Montréal area and public health organizations remain on the alert for any changes in Québec.

In this context, there has been heightened community concern in Kahnawà:ke about potential opioid dependence, abuse and its effects on the community. Peacekeepers have seized fentanyl on one occasion, and more than one person has been treated for opioid overdose by the KFB. There has also been a perception among community members and front-line care workers that opioid dependency and abuse seem to be on the rise. In this section, we describe a partial portrait of opioid drug use in Kahnawà:ke. It is important to remember that we cannot measure

[72] Paulozzi LJ, Jones CM, Mack KA. Vital Signs: Overdoses of Prescription Opioid Pain Relievers -- United States, 1999-2008. MMWR Morb Mortal Wkly Rep 2015;60(43):1487–92
Paulozzi LJ, Baldwin G, Franklin G, Kerilkowske RG, Jones CM, Ghiya N, et al. CDC Grand Rounds: Prescription Drug Overdoses- A U.S. Epidemic. MMWR Morb Mortal Wkly Rep 2012;61(1):10–3.
BC CDC. Public health emergency in BC the rise in drug overdoses and deaths . [Internet]. 2016 [cited 2016 Dec 5];1–2. Available from: http://www.bccdc.ca/about/news-stories/stories/public-health-emergency-in-bc

[73] Van Zee A. The promotion and marketing of oxycontin: commercial triumph, public health tragedy. Am J Public Health 2009;99(2):221–7.
Zin CS, Chen LC, Knaggs RD. Changes in trends and pattern of strong opioid prescribing in primary care. Eur J Pain (United Kingdom) 2014;18(9):1343–51.

the impact of potential illegal opioid trafficking and use, so we can only produce a partial portrait. It should also be interpreted cautiously, because there are some limitations of the data sources (e.g.: possible under-reporting on the Regional Health Survey for sensitive questions; NIHB insurance showing dispensed medication but not how it was used).

Opioid use in Kahnawà:ke:

- 15% of the adult and 12% of youth survey respondents reported having used any opioid medication, for any purpose (including for appropriate medical use) in the last 12 months. This is estimated to be about 950 adults and about 60 youths, which is similar to the number of distinct individuals claiming an opioid prescription through NIHB in 2015 (981):
    - This is similar in proportion to estimates from surveys of the general Canadian population, where 14.9% of individuals 15 years or older had used any opioid in the previous year[74]
- Among adults in Kahnawà:ke, 9% had used opioid medications only once or twice in the last 12 months, and 6% had taken them more frequently than that.

The **Regional Health Survey also asked questions about using opioid medications obtained illegally** (i.e.: "on the street" or via family and friends who had prescriptions), about taking prescribed medication for longer than or at higher doses than prescribed by a doctor and about tampering with medications (i.e.: crushing pills to inject), **but very few individuals responded to these questions. This means we cannot report these numbers because they may be inaccurate. In a Canadian survey, about 2% of those who used opioid medications reported abusing them in one of these ways (about 0.3% of the general population).[75]**

In contrast, the RHS did ask about *some* pain conditions, which may be appropriate medical reasons to be taking opioid medications. For example, 13% of adults reported suffering from chronic pain, and 21% of adults reported having been diagnosed with arthritis. Another 13% had had a serious physical injury at some point over the last year. We do not have numbers about surgeries, or cancer-related pain (e.g.: pain from advanced cancer spreading to bones or lungs), both of which are appropriate reasons why some people would have been prescribed these medications.

This offers some reassurance that the number of people receiving prescriptions for opioids is not much higher than it is elsewhere.

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[74] (CCSA July 2015 Canadian Drug Summary, prescription opioids). http://www.ccsa.ca/Resource%20Library/CCSA-Canadian-Drug-Summary-Prescription-Opioids-2015-en.pdf

[75] https://www.canada.ca/en/health-canada/services/canadian-tobacco-alcohol-drugs-survey/2015-summary.html

Dispensed Opioid Prescriptions:

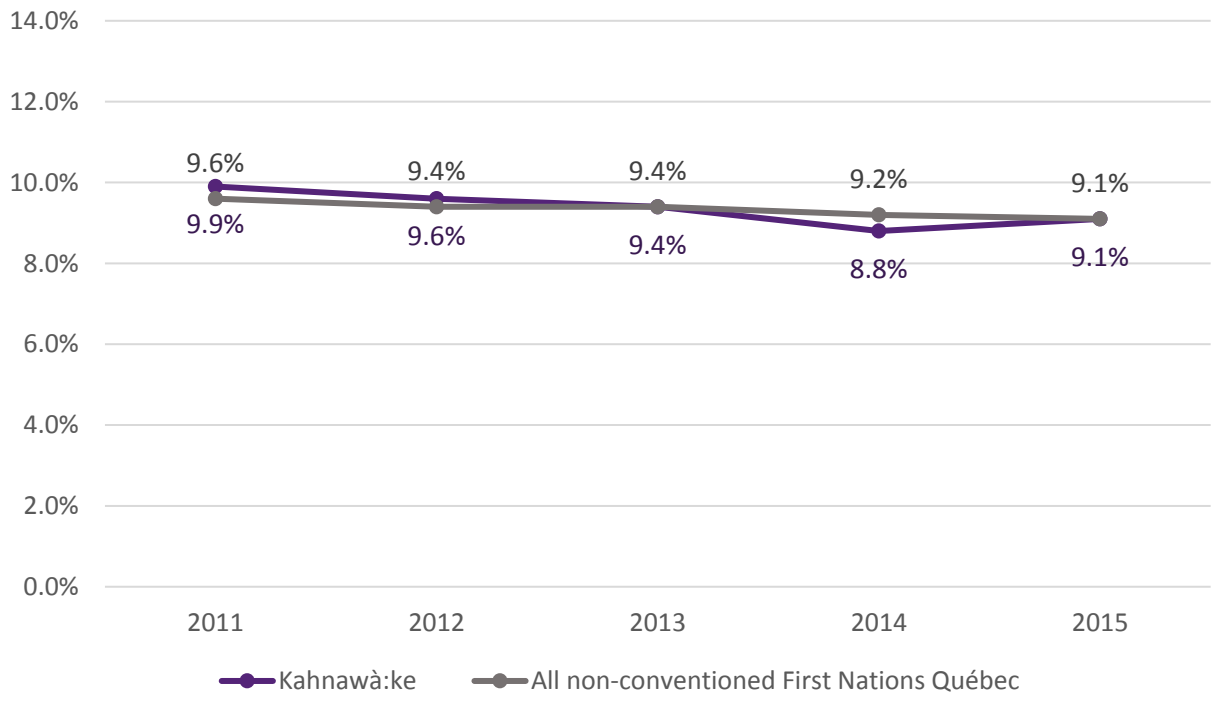
The following table shows data from 2015 on the quantities of different types of opioid medications claimed by Kahnawà:ke band members Indigenous and Northern Affairs Canada (INAC) list through NIHB insurance, and the number of people who made a claim for one of these medications. In total, 981 people made a claim for at least one of these medications in 2015. Oxycodone, morphine and hydromorphone were the most commonly dispensed medications, with very few fentanyl patches dispensed.

Most common opioid medications, number of distinct individuals claiming them via NIHB and total number of tablets dispensed (2015)

Generic Name	Brand Names	Number of claimants	Number of transactions (pharmacy claims)	Number of units (pills or patches)
Oxycodone	OxyNeo, Oxycontin Supeudol	234	1331	57,768
Oxycodone & acetaminophen combination	Percocet	139	416	14,242
Hydromorphone	Dilaudid	182	1150	46,010
Morphine	Statex	237	982	35,026
Codeine		131	214	15,087
Codeine & acetaminophen combination	Tylenol 3, Emtec	292	421	12,579
Fentanyl	Duragesic	6	59	465

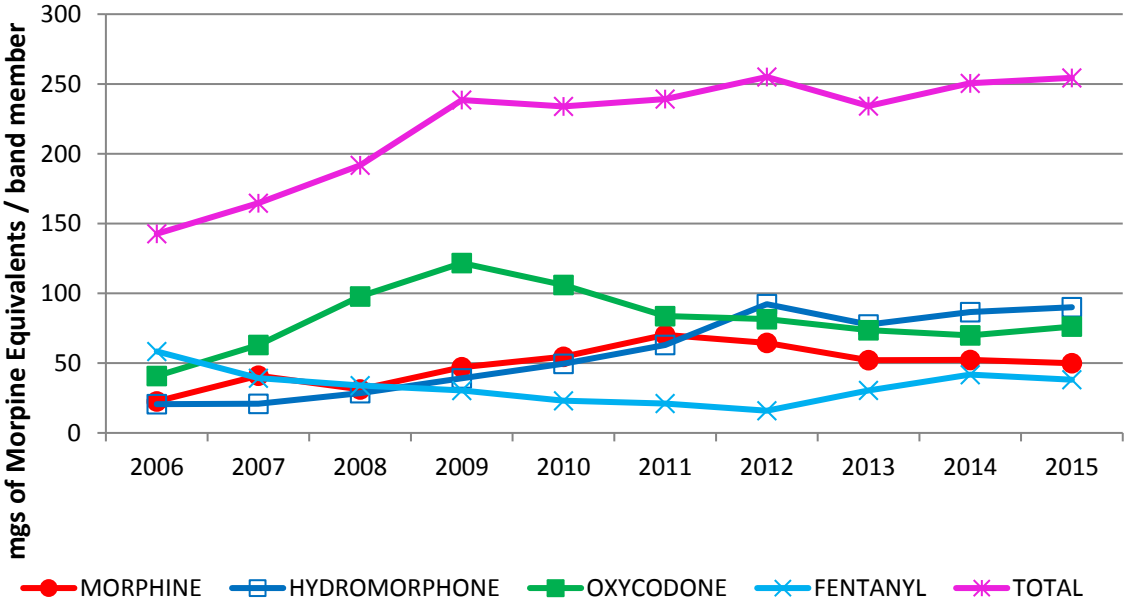
Kahnawà:ke had similar rates of prescription of opioid medications claimed from NIHB as other Québec First Nation communities with about 9% of the total band population claiming at least one of these medications throughout the year. These numbers have been slowly decreasing since 2011. This is shown in the graph below.

Figure 46. Registered First Nation Members with at least one prescription claimed from NIHB for an opioid, Kahnawà:ke and Québec First Nations, 2011-2015



While the percent of people receiving at least one prescription has stayed relatively stable over time, we still see that *the total amount of opioid in dose* (measured by Oral Morphine Equivalents) has been increasing over the last ten years. Originally, this seemed mostly due to an increase in oxycodone dispensing (green bar) but, from about 2010 onwards, this began to be replaced by other opioids, notably hydromorphone (dark blue bar). This slow increase in the amount of opioid doses dispensed is also a trend that has been seen outside of Kahnawà:ke in Québec and elsewhere in Canada.

Figure 47. Oral Morphine Equivalents reimbursed by NIHB per Registered Kahnawà:ke Member, by opioid type, 2006-2015



The data presented here do not show any immediate indications of crisis levels of opioid use in Kahnawà:ke, but neither does it show any indication that the community would be spared from the overall trends going on around it. In the broader context of frequent opioid prescribing and increasing use of potent black-market opioid medications seen in many parts of Canada, including in Montréal, Kahnawà:ke should remain alert and prepared to act in case similar increases in abuse and overdose come to this community. To ensure appropriate prevention initiatives and early actions are taken, Onkwata'karitáhtshera has created a Task Force to ensure health and social service professionals are communicating well about this issue and have the tools and training needed to address this concern in the community.

Gambling & Gambling Disorders

Gambling can be recreational and is often part of community efforts used to help raise money for important causes, but for a small proportion of people it can become a big problem. Some individuals develop problematic gambling behaviours which may lead to negative impacts on these people and on their families. Still others develop pathologic gambling, a form of addiction. This can affect their relationships with family, friends, or work colleagues and can lead to financial instability that can undermine the individual's health in other ways. For example, if someone is spending more than they can afford to lose when gambling, they could not have enough money left for their basic needs such as healthy food, a safe home, utility bills and essential medications. People with severe gambling problems spend on average 21% of their total income on gambling, compared to people who do not have gambling problems who spend on average 1.5% of their income on these activities.[76]

Problem and pathologic gambling disorders are intricately tied to mental illnesses (depression, anxiety, impulsive disorders, alcohol & substance abuse). Gambling disorders also greatly increase someone's risk of suicide. Gambling disorders are characterised by a number of criteria, for example: a preoccupation with gambling, difficulty controlling one's gambling behaviour, borrowing money in order to gamble, lying to others about gambling or debts, betting more than one can afford or spending high proportions of total finances on gambling and chasing loses**. The best estimates in Québec and Canada are that about 2-3% of adults may be directly affected by at least moderate problems with gambling [77,78], with approximately 10% of adults having been impacted negatively by someone else's problems with gambling.**

In general, people affected directly by problem gambling often go to great lengths to hide this from others and rarely seek professional help. In some cases, they are unaware that such help exists, and others do not yet see their gambling as a problem. It is also not yet commonplace for many health professionals to consider and ask about signs of problem gambling in a systematic way. In Kahnawà:ke, only a small number of people specifically seek out help via KSCS for problem-gambling each year, although screening for it at intake for all mental health services has become routine.

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[76] Wiebe, J., Mun, P. & Kauffman, N. (2006). Gambling and problem gambling in Ontario. Toronto, ON: Responsible Gambling Council. www.gamblingresearch.org/download.sz/1043%20Final%20Report%20POSTED%20VERSION.pdf?docid=7670.
[77] https://learn.problemgambling.ca/PDF%20library/handbook-guide-for-helping-professionals-accessible-2017.pdf
[78] https://www.inspq.qc.ca/sites/default/files/publications/266-prevalencehabitudesjeu.pdf

Number of people seeking services at KSCS for:	2012-13	2013-14	2014-15	2015-16	2016-17
Gambling	<5	<5	<5	0	<5

In Kahnawà:ke, as per the 2015 Regional Health Survey :

- **44% of adults (18 and older) felt gambling was an important challenge facing the community**
    - 33% of adults felt no progress was being made on gambling issues, 31% felt the situation was worsening and 33% responded they did not know if the situation had changed for good or bad in the past years
- 31% of youth (15-17 years old) felt gambling was an important community challenge:
    - 33% of youth felt some or good progress had been made on this issue, 38% felt there had been no progress and 26% felt the situation was worsening over the past year
- The majority of adults (18 years and older) in Kahnawà:ke (68%) had gambled in some way in the last year, similar to other First Nations in Québec in 2008
- Gambling was more common among women (75%) than men (60%); this was also the case in the 2008 RHS in other First Nations in Québec
- **11% of adults who had gambled had borrowed money to do so**
- **11% of adults who had gambled had bet more than they could afford to lose (8% of all adults)**

Areas for Action Regarding Substance Abuse and Addictions in Kahnawà:ke

This portrait of substance use in Kahnawà:ke highlights some key areas for action.
While many people in the community do not drink at all, heavy alcohol consumption and binge drinking patterns still affect a large proportion of people.

To reduce the health harms from this pattern of alcohol use, a multifactorial approach is needed. Prevention activities should consider social influences that lead to these two dominant drinking/abstinence patterns (e.g.: social normalization & social networks; connection to traditional viewpoints) and work to intervene here.

Reducing the density of alcohol sales outlets and increasing the cost of alcohol (e.g.: minimum drink prices and taxation of alcohol sales) through regulation and enforcement have been effective ways to reduce alcohol abuse in other places. Local organizations should explore how such evidence-based policies could be implemented in Kahnawà:ke.

Health care and social service professionals should also be aware of the frequency of binge drinking patterns when screening individuals for health risk factors. The community can focus on efforts to reduce harms associated with binge patterns of consumption (e.g.: well- publicized ride checks and designated driver programs). It is also important for local organizations to routinely collect basic information (such as number of ride checks done per year) and follow this data over time to be able to evaluate our success in implementing positive changes for the community.

Cannabis (marijuana) consumption is also frequent and particularly common among younger adults and teens. Even in the context of legalization and regulation, this raises important considerations for youth brain development, inhaled smoke exposure on lung and heart health, and risk of injury while intoxicated. Awareness of these risks and seeking effective ways to reduce them is important, including adequate regulation and law enforcement as well as public education. To minimize the potential associated harms of cannabis (marijuana) use, we also have to consider why people use it, whether for recreational use, pain relief or as a form of self-medication for anxiety. By ensuring adequate care is available for health needs such as anxiety and pain relief, it may be possible to reduce some of the harms that can come with use of cannabis (marijuana).

Cocaine use is another concern for adults in Kahnawà:ke. Strong law enforcement, prevention & awareness, access to addiction treatments, and interventions aimed at reducing harms associated with use (e.g. injuries, infections) are all critical pillars in addressing cocaine use. Finally, survey responses indicate gambling is considered an important community challenge by many, and a significant proportion of adults demonstrate at least *some* problem-gambling behaviours. Nevertheless, very few people have sought help for this in the community in recent years. We need to follow this over time and ask if there are other ways to outreach to people affected by problem-gambling without reducing the ways this practice benefits the community.

Conclusion

The information presented in this portrait gives the clearest view to date on some of the health priorities of Kahnawà:ke. In some areas it confirms, with greater precision, health issues the community already understood to be priorities, such as the significant impacts of diabetes on community members. It allows us to quantify the degree of the gap between Kahnawà:ke and the surrounding area, and to see some trends over time to have a better idea where progress is being made or new challenges are arising.

In other health areas, this portrait offers reassurance. For example, it is terrific that cancer rates in Kahnawà:ke are no higher than they are in Québec or the surrounding region. Even so, we know that cancer is an important priority health concern throughout all provinces in Canada, and it validates that it should continue to remain a priority here. Kahnawà:ke has very good cancer-screening rates for cervical cancer and breast cancer, but it also confirms and quantifies where improvement could be made, notably for colon cancer-screening.

There are several areas where significant positive changes can be seen, notably the low proportion of people who are currently smoking and the large number of people who have successfully quit smoking.

The portrait gives detail to help understand more specific issues related to substance abuse. We see that patterns of binge alcohol consumption are common and that there is also a large proportion of people who choose not to drink at all.

Onkwata'karitáhtshera will continue to work with its member organizations and with the community on putting this information into action to improve health for Kahnawa'kehró:non. It also encourages community members and agencies to use this portrait to develop initiatives aimed at this same goal and would be happy to consider any proposals for project funding to assist such initiatives. It is also working on creating similar portraits for other health issues relevant to the community and to follow-up on the trends and progress over time.