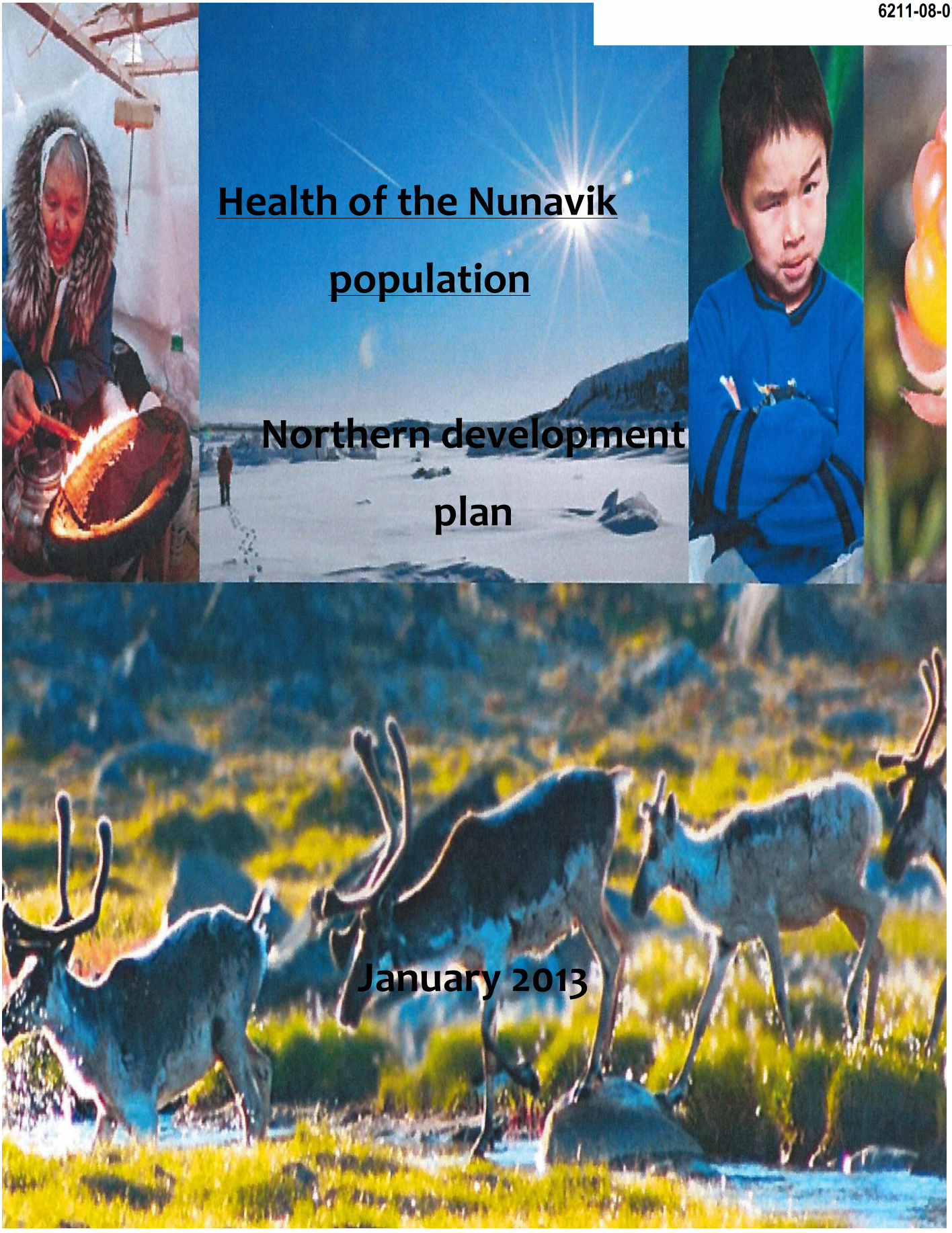
Health of the Nunavik population
Northern development plan
January 2013

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Introduction

The Nunavik region is at the heart of the territory concerned by northern development initiatives, and more specifically, the development of mines. Faced with this reality, a document describing the direction that the Nunavimmiut want regional development to take (Plan Nunavik or Parnasimautik) was drawn up by the Makivik Corporation in conjunction with the Kativik Regional Government, the Kativik School Board, the Nunavik Regional Board of Health and Social Services, and various other organizations, committees and groups. This document provides more detailed information on the health component of Plan Nunavik, but without negating the latter's primacy.

Economic development will generate additional pressure on the region's health and social services network. This document, with this reality in mind, attempts to describe the health and social services currently available, the challenges inherent in the existing service offer, and the anticipated repercussions of economic growth on the demand for health and social services in the region. While this text is far from comprehensive, in part because the impacts of the incipient economic and mining development on the region cannot be fully anticipated or understood, it nonetheless strives to draw a portrait that will allow decision-makers to support Nunavik's health and social services network as it faces new challenges.

Chapter 1: Clientele in need of services

1.1 Territory's population

There are more than 12,000 people living in Nunavik, over 10,000 of whom are Inuit. The territory's population is spread out in fourteen villages located along the coasts of Ungava Bay, the Hudson Strait and Hudson Bay. Located above the 55th parallel, all of these villages except for four have fewer than 1,000 inhabitants. The four largest northern villages, population-wise, are Kuujjuaq, Puvirnituq, Salluit and Inukjuak. There are no land routes connecting the Nunavik communities with one another or with communities outside of the region.

In addition to the villages' respective residents, personnel from the mines also live in the territory. At present, the Raglan mine has 1,254 workers in the region and Nunavik Nickel, 400 (a figure that should increase to 1,000 by the end of 2013). Based on population, these mines could also be seen as constituting small villages.

Like other remote regions, Nunavik's economic position is in the red, and this given its extreme reliance on government assistance. A difficult climate, scattered resources, distance from major centres and a lack of qualified labour together constitute a significant hurdle to regional economic development.

1.2 The Inuit

The annual population growth rate of the Inuit is estimated at around 3%, which is three to four times higher than the average for Québec (Table of the demographic projection for Nunavik). This significant growth generates yet more strain on the region's health services and infrastructure. At present, there are not enough housing units in Nunavik to meet the demand. This housing shortage has led to a situation where several families are forced to live under a same roof, further exacerbating the phenomenon of overcrowded homes.

The region's consumer price index (CPI) is extremely high, with food costing approximately 40% more in Nunavik than in Québec's major metropolitan areas. This reality gives an added importance to traditional subsistence activities (hunting, fishing, berry picking).

From an academic perspective, each village has one or more schools where primary and secondary grades are taught. School programs are tailored to local needs and emphasize the traditional culture and language. Whereas school attendance rates have significantly increased over the last decade, the population continues to be burdened with a low education rate.

In 2006 (Graph 1), the high school graduation rate was 17.8% (compared to 72.3% for the rest of Québec). 10% of Nunavimmiut (Inuit and non-Inuit) between the ages of 25 and 64 have a high school diploma, (DES), 25% have a degree from a trade or apprentice school, and 30% have attended some post-secondary classes.

The socioeconomic context in Nunavik has an effect on the health of the region's population. From a risk of transmission of infectious diseases due to overcrowded dwellings, to household violence (Statistics Canada, 2008c), to a lack of places where youth can study (Duhaime, 2009), various factors associated with the Inuit living environment in Nunavik have repercussions on the region's health and social services needs.

Housing

It is obvious that the Nunavimmiut have been experiencing a housing crisis for many years, and nothing presages any improvement in the near future. The overcrowding rate in Nunavik is at a staggering 68%, by far the highest such figure in all of Canada (…).

A 2007 study by the Commission des droits de la personne et des droits de la jeunesse led to some disturbing observations. In its report, *Investigation into child and youth protection services in Ungava Bay and Hudson Bay*, the Commission noted that:

- Overcrowding creates conditions conducive to the emergence of social problems and makes it more difficult to eradicate them.
- The lack of privacy exacerbates tension. Homes are noisy and people who are less tolerant may lose their temper. Children, from a very young age, will often witness sexual acts or conflicts between adults.
- Over half of all children live in an environment where at least one family member living under the same roof drinks or is violent. Their living conditions may be affected, and the risk of abuse is greater.
- Some families who do not themselves have particular problems live with other people who do, meaning that their children are exposed to other people's problems on a daily basis.
- Abusers awaiting trial or released from prison, when they return to their own communities or are sent to another community, often live in homes where there are children.
- The fact that all housing is overcrowded makes it difficult to place children.
- The housing shortage also makes it harder to recruit case workers. For example, it may be impossible for the DYP to hire a specialist case worker in a small village, or transfer a case worker from another village, simply because no housing is available.
- At the present time, approximately 500 families in Nunavik (25.5% of the total) are on the waiting list for housing.

Food insecurity

Food insecurity is a widespread problem in Nunavik, much like it is in Canada's other Inuit regions. A number of studies carried out in Nunavik have indicated that around one of every four families in the region is afflicted by food insecurity. This phenomenon, which seems to be spreading, involves various nutritional problems experienced by specific populations: vitamin deficiencies among young women of childbearing age, iron deficiency anemia in children, etc. A 2004 health-related study showed that traditional foodstuffs accounted for only 11% of the daily energy intake of Nunavik youth. And yet it has been illustrated that eating traditional food items has a highly positive effect on the quality of the diet of Arctic populations.

1.3 Workers

The jobs available in the region are split between cooperatives and private-sector companies and the public and parapublic sectors. Most jobs are in the various villages. Activities outside of the region's villages mainly consist of mining operations and the harvesting of wildlife resources for tourism and subsistence purposes. The following descriptions are not complete, but rather, depict the primary types of employers present in the region.

1.3.1 Private companies

There are very few industries in Nunavik aside from mining, so we will include the para-industrial sectors (energy, transport, construction, commercial businesses and cooperatives) in this section.

Mining sector

There is currently only one operating mine in Nunavik, the Xstrata Nickel Raglan mine owned and run by Xstrata Nickel. This mine provides jobs for nearly 1,254 employees, 175 of them Inuit.. Activities at another mine, namely Canadian Royalties Inc.'s Nunavik Nickel Project mine, are slated to begin shortly on the Ungava peninsula. There is also significant mining exploration being carried out in the region. These exploration activities employ close to 375 prospectors, with just shy of 75 of them being Inuit residents of villages close to the sites being prospected.

Energy sector

Electricity generation, spearheaded by Hydro-Québec, is carried out at fourteen thermal fuel oil steam plants (one in each of the major villages). The government corporation provides jobs to 27 workers in the region, 23 of them Inuit.

Transport sector

The transport sector (air and maritime) is the primary service provided to the region's consumers, and accounts for 415 jobs in the territory (115 of these part-time).

Construction sector

There are numerous construction contractors in Nunavik. In 2011, they accounted for nearly 550 jobs, 130 of them held by local residents.

Commercial businesses and cooperatives

Private business is coming into its own, and growing quite rapidly in a number of Nunavik communities. Together, these businesses represent nearly 420 jobs in the region, of which 150 are part-time, most of them in the retail sector.

The Fédération des coopératives du Nouveau-Québec also owns and operates 13 hotels in as many villages. Some village hotels and restaurants, in turn, are owned by village landholding corporations. Together, these establishments represent nearly 135 jobs, 50 of them part-time.

1.3.2 Public and parapublic sectors

These two sectors generate nearly 2,800 jobs, 650 of them part-time, in federal, provincial and municipal establishments.

1.3.3 Tourism sector

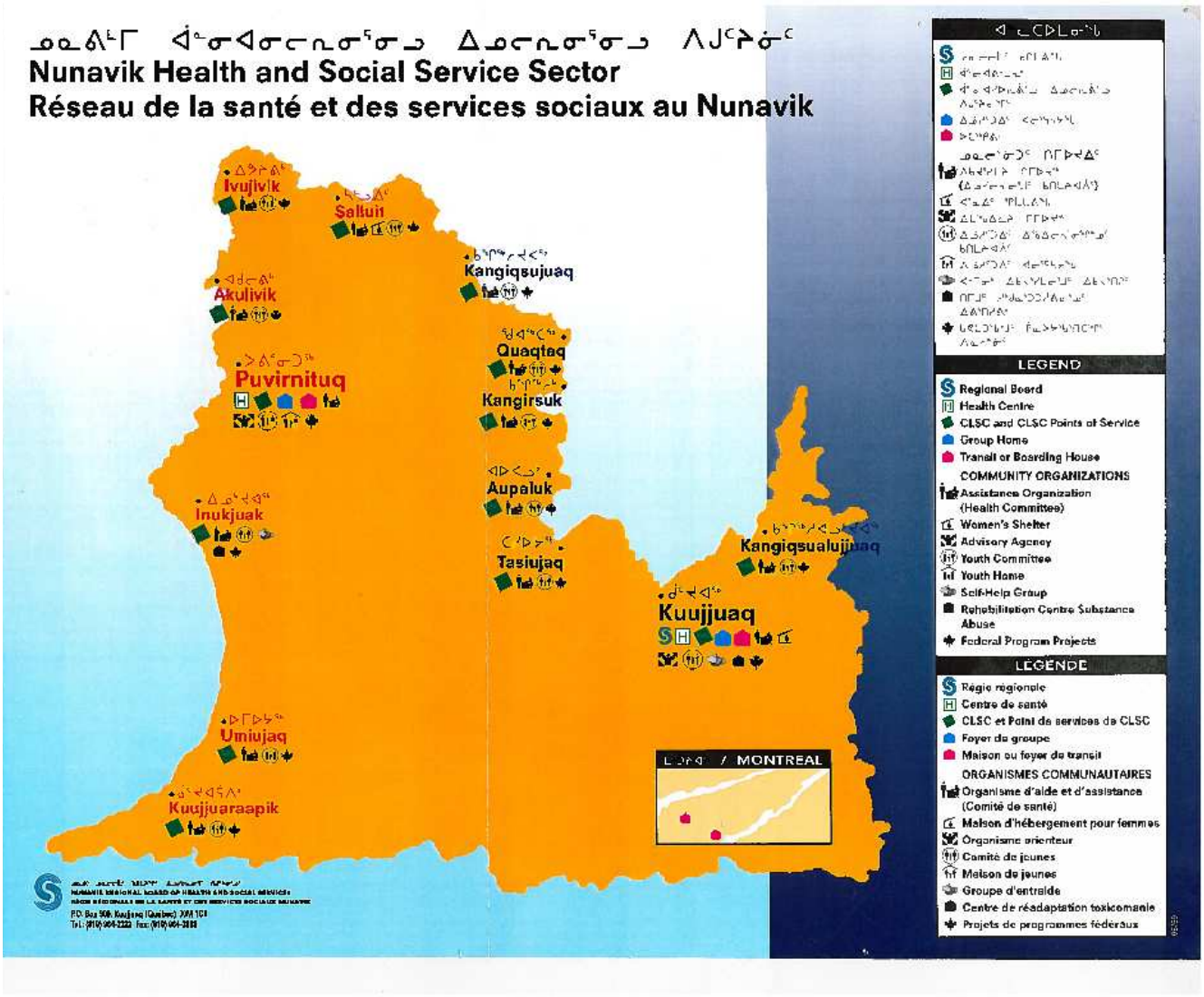
The region is home to around 50 outfitters that operate over 200 fixed and mobile camps. The Inuit enjoy exclusive operating rights for outfitting operations on category I and II lands. The various outfitters account for around 140 seasonal positions; over half of these are filled by local residents.

Nunavik Parks has around 20 employees (13 of them Inuit) at the Kativik Regional Government and in the various parks they operate. The park network is planning to significantly expand, which should create a number of new jobs over the upcoming years.

Chapter 2: Description of existing services in Nunavik

As clearly depicted in the image below, the health and social services offer in Nunavik is split between the two coasts, namely the Hudson Coast and the Ungava Coast. Each coast has a health centre that serves a total of 7 communities. The Puvirnituq and Kuujjuaq health centres offer front-line services to the immediate village's population, as well as second-line services to nearby associated villages. The Nunavik Regional Board of Health and Social Services is responsible for the planning and programming of the various services offered.

Public health services are assured by Nunavik public health authorities (Direction de la santé publique) and delivered by the health centres. They are important factors, particularly when considering the determinants of health applicable to the Nunavik territory.



2.1 Front-line services

Local community service centres (CLSC) and health centres (HC)

All of the CLSC and HC points of service offer the same healthcare, psychosocial and youth protection services. All villages enjoy ongoing access to healthcare services, which are delivered by nurses, and social services, which are dispensed by human relations agents (HRA). Certain villages (Salluit, Inukjuak, Kuujjuaq and Puvirnituq) have physicians present on a permanent basis who are available for consultations/appointments. In the other villages, a physician is present around one week each month, and the rest of the time (when there is no physician), users can obtain information via telephone or turn to telehealth services if necessary. In Nunavik, nurses play an enhanced role due to various collective orders.

General psychosocial services are thus ensured 24 hours a day, 7 days a week, with or without an appointment. There are also teams of midwives who extend their services to the entire territory (in 2011-2012, 159 of the 326 recorded births in Nunavik were with a midwife[1]).

Community organizations

The community organization support program (PSOC) funds a total of 11 community organizations that make services available to abused women, persons with severe and chronic mental health problems, the elderly, persons suffering from an addiction, and men. Other agencies with a community approach are assisted by health centres. They notably offer preventive treatment to patients at risk of fetal alcohol syndrome and to families or individuals suffering from mental health problems.

Telehealth

Telehealth services are offered to village residents by the various professionals working in the health centres.

2.1 Second-line services

The region's health centres offer certain second-line services. Specialized services, for example, are extended by mental health practitioners or community organizations dedicated to offering specialized care. The other second-line services are offered in the same manner as those services made available by RUIS McGill. Various specialists travel to the different villages several times each year.

2.1 Third-line services

McGill Health Network Office

The McGill Health Network Office is responsible for the development of relationships between institutional partners and the associated regions, particularly in the area of clinical services. Consultations with medical specialists regarding third-line services can be carried out in Nunavik, Montréal or via telehealth services.

Consultations in Nunavik

In 2011-2012, around twenty specialists travelled to Nunavik to offer specialized and highly specialized services. Areas of specialization addressed directly in Nunavik include, among others, pediatrics,

[1] UTHC annual report 2011-2012, IHC annual report 2011-2012.

gastroenterology, ORL (ears-nose-throat), obstetrics-gynecology, psychiatry and child psychiatry, ophthalmology, internal medicine, cardiology, rheumatology, surgery and orthopedics.

2011-2012	UTHC	IHC
Number of visits by specialists	38	42
Number of patients seen	2,069	2,672

Consultations in Montréal

Patients must travel to the south whenever they need healthcare services that are not available in Nunavik. Liaison teams oversee all of the logistics, thereby ensuring that these activities are smooth and efficient. 3,439 patients benefited from these services in 2011-2012[2].

Telehealth

Nunavik, in conjunction with RUIS McGill, has set up telehealth equipment in all of the villages as a means of limiting the number of patients transferred to Montréal. The most widely requested specialized services are in the areas of psychiatry, cardiology, ultrasonography, radiology and pediatrics.

[2] 2011-2012 annual report, Inuulitsivik Health and Social Services Center.

Chapter 3 Problems associated with the service offer

- Difficulties recruiting and retaining human resources.
- Lack of housing for personnel, with many employees having to share homes with 3 or 4 colleagues.
- Shortage of office space.
- Cultural differences and language barrier (primarily resulting from a French system serving a bilingual population that speaks mainly English and Inuktitut).
- Vast distances between communities, and the ensuing service delivery problems.

3.1 Public health

The Nunavik population is facing numerous public health problems across the territory, many of them concerning psychosocial development, mental health, addiction, dangerous behaviours and living environments. A wide range of indicators (including the percentage of blood-borne or sexually transmitted infections, the number of people with drug or alcohol addictions, instances of family or sexual abuse, and the suicide rate) illustrate the need to take preventive action to avoid future health problems. Appended are a number of tables and graphs depicting data on public health in Nunavik.

The Qanuippitaa health survey (2004) revealed the following data as regards the Nunavik population:

- high percentage of people who regularly drink excessively;
- high percentage of women who admitted to drinking alcohol while pregnant;
- drug consumption rate of around 80%;
- 13% of the population with a high level of psychological distress and considered likely to become depressed or develop mental health problems. Some groups (youth, women and people with a low income) were more likely to be afflicted;
- net increase in physical and sexual abuse cases, particularly involving women and children;
- high percentage of adults who gambled.

The public health problems afflicting the residents of Nunavik are in large part due to social inequity as regards health. Unfortunately, there is a real risk that this imbalance will be upheld and even exacerbated as a result of the North's development. The main social determinants of the public health problems experienced by the Inuit are cultural integration, self-determination, education, quality of early years of life, productivity, income and its distribution, food security, healthcare services, social protection, housing and the environment, health-related behaviours, community infrastructure and cultural continuity.

As a result, many public health interventions are stymied and their impact and scope limited by important economic and psychosocial constraints. In the presence of social determinants, it is critical to give due consideration to all of the factors involved (for example, physical environment, job, income, education, food security) as well as their effect on physical, emotional, mental and spiritual health. These problems are linked to various factors: past trauma as regards culture, residential schools, sexual abuse at an early age, hard socioeconomic conditions, etc. Limiting and eventually preventing substance abuse must absolutely begin with comprehensive and concerted public health interventions that take these specific factors into account.

Blood-borne and sexually transmitted infections are practically an epidemic in Nunavik. While the rate of chlamydia infections has always been clearly higher than elsewhere in Québec, the past few years have been witness to a true onslaught of gonococcal infections. Together, these two types of infections account for nearly 85% of the notifiable diseases reported to the public health authorities (DSP) each year. In both instances, a certain decrease in the number of reported cases had been observed several years back. This, however, quickly gave way to a major outbreak, clearly illustrating the unstable nature of advances in health prevention and promotion and in the fight against infections.

It also bears noting that tuberculosis is also a real public health concern in Nunavik. In 2012, in fact, the region was faced with a major tuberculosis outbreak (mostly affecting one community). This particular outbreak was widespread enough to require active testing among the community's residents aged 15 years or over. Tuberculosis, while an infectious disease, is caused by a combination of factors (overcrowded housing, malnutrition, vitamin deficiency, prior exposure, diagnostic and treatment facilities, etc.).

At present, the limited human, financial and material resources earmarked for public health promotion, prevention and protection in Nunavik are not sufficient to stop - or even slow down - the occurrence and prevalence of the health problems with which the region must cope. To simply meet current demand, it would be necessary to add two full-time equivalent (F.T.E.) positions for infectious diseases and environmental health, one position for preventive clinical practices, one public health specialist position (for knowledge and monitoring), another position for psychosocial problems, and another full-time equivalent position for the other programs and northern development.

Furthermore, the resources allocated to the occupational health program are no longer adequate, and fail to ensure the delivery of the services needed by companies already operating in the territory, particularly when one considers the significant expansion they have undergone. For public health authorities to carry out their legal mandates, it is thus logical to presume that the arrival of new companies, most notably in the mining sector, will call for new resources.

3.2 General services

At the sociosanitary level, a regional evaluation of the WHO's health indicators revealed figures for Nunavik which were well below averages for Canada as a whole. It is estimated that health-related needs in Inuit villages are around 10 times the needs of the population of the rest of Québec (on a proportional basis)[3].

In spite of the significant health issues of the Inuit, the service offer in terms of physical health is usually adequate, if but barely. The numerous people who go to local community service centres, walk-in clinics or HC emergency rooms on a daily basis are a drain on the system, as they all require a serious amount of time. The cultural issues and language-related barriers increase the duration of an average consultation, which further slows down the process. The available psychosocial services are clearly inadequate, both in terms of quantity and quality. In several communities, for example, only one psychosocial practitioner is on call, and this while running the walk-in clinic and taking responsibility for all case management.

[3] DRMG NUNAVIK, Organisation des services médicaux sur le territoire du Nunavik, Dr. François Prévost, Dr. Danielle Mercier, Dr. Geneviève Auclair, Dr. Nathalie Boulanger, May 2012.

3.4 Loss of autonomy due to aging

In Nunavik, the quantity and quality of services available to persons having experienced a loss of autonomy is limited by a number of factors, including:

- lack of human resources (unevenly distributed, shortage of rehabilitation resources);
- complete home care teams present in very few communities;
- natural environment (weather, snow, terrain);
- lodging (very few resources with long-term care housing, of the CHSLD type, and no intermediary resources);
- architectural barriers due to raised construction;
- no URFI resources (intensive functional rehabilitation unit) in the territory;
- shortage of material resources (problems with their assignment, climate adjustment);
- a single ambulatory resource (day centre).

Requirements regarding home care personnel for elderly persons with a loss of autonomy have not been met for the territory as a whole, but the network can rely on family aides in nearly every village.

3.5 Physical disability

There are very little - and no recent - data on the population's needs in terms of physical disabilities, physical rehabilitation services, or adjustments to the living environment. Services designed to meet physical rehabilitation needs are always hard to introduce, given the obvious lack of specialized resources. This being said, some data illustrate critical needs in terms of auditory disabilities or rehabilitation requirements following accidental injuries[4].

3.6 Intellectual disabilities and PDD

Some children with developmental issues or pervasive developmental disorders were identified among the students attending Kativik School Board establishments. Individual plans (PSI) are not operational due to a shortage of resources. Very few housing resources, moreover, exist to offer respite services. At present, there are no practitioners or services in the areas of intellectual disabilities or pervasive developmental disorders. Services are extended on a case-by-case basis, when feasible.

3.7 Youth in difficulty

The regional report on the youth in difficulty service offer was completed at the end of 2012. The poor implementation of the various services/programs is quite obvious, particularly with regard to social services. This has had a major impact on the delivery of services by Youth Protection, which is completely overwhelmed by the severity of the cases reported in a population hampered by past and present traumas. The rate of reports accepted by the Nunavik DYP in 2012 was 716.5 cases per 1,000 inhabitants.

Among the problems exacerbating the poor implementation of youth in difficulty services, we note:

- small population pools, which do not justify recruiting additional workers, regardless of the scope of the problems being experienced;
- lack of systematic clinical supervision of practitioners;

[4] Cameron, É., State of the Knowledge: Inuit Public Health, 2011, National Collaborating Centre for Aboriginal Health, p. 30.

- shortage of Inuit human resources, particularly given the population's lack of trust in the non-Inuit system;
- amendments to the *Professional Code* (bill C-26), which had the effect of further restricting the hiring of Inuit workers and their assignment to a territory where resources are already lacking.

Currently, every community offers general social services (0-18 years) as well as social services affiliated with Youth Protection. Perinatal and Early Childhood Integrated Services (SIPPE) are in the process of being introduced in 3 communities, but do not cover all of the areas. There are emergency social services, which are the responsibility of Youth Protection personnel. What this means is that in many communities, YP workers who complete a 9 a.m. to 5 p.m. shift must then be on call for emergency social services from 5 p.m. to 9 a.m. They even occasionally find themselves putting up children in their own homes in the event of an emergency. There are limited rehabilitation services for boys available in the region (Sapummivik). Girls, however, must be transferred to Montréal (Ulluriaq) (relocalization in 2014-2015).

3.8 Addiction

The addiction service program offers services to persons with risky behaviours, or abuse or addiction problems involving drugs, alcohol or gambling. The targeted clientele, moreover, consists mainly of young pregnant women and mothers of small children, youth in difficulty or persons with mental health problems[5]. In Nunavik, these three groups form the majority of the region's population (as described in the section on demographic variances).

Under the addiction service offer described by the MSSS[6], a number of different services should be available in the region. In reality, many of these services are missing, difficult to access, or do not meet applicable quality standards.

There is a practitioner specialized in addiction in each health centre. The turnover rate among the persons who hold this job, however, is very high. This is in part due to practitioner exhaustion, caused by the lack of a clear definition of the service offer. It is also the result of there being no service network to support interventions (for example, a regional program for special assessments, a certified treatment centre, rehabilitation services offered on an outpatient basis, therapeutic support activities and psychosocial monitoring following treatment).

There is only one addiction rehabilitation centre in the entire Nunavik territory. Not only is this centre not accredited, but there is a long waiting list for the various treatments offered. The centre's services, moreover, are limited to adults and only offered on an intake basis (hence generally far from a user's village). These rehabilitation services are thus not available for parents with young children, workers who cannot leave their homes or communities, youth under the age of 18, and clients who would prefer outpatient services.

Rehabilitation services, also on an intake basis, are also available outside of the region for users who prefer this option. These services, however, are not extended in Inuktitut and are not tailored to the life of the Inuit of Nunavik. Users who do opt for these services, moreover, do not benefit from any formal post-treatment follow-up. In some cases, the social worker from the user's community can offer such a service, but this is highly dependent on the worker's skills and availability. There are no practitioners who specialize in addiction in any of the communities without a health centre.

[5] Ministère de la Santé et des Services sociaux du Québec (2007). Unis dans l'action : Orientations pertaining to standards regarding access, continuity, quality, effectiveness and efficiency. Addiction service program. Service offer 2007-2012.
[6] Ibid.

3.9 Mental health

In spite of constituting a regional priority for a good number of years, mental health teams have yet to be set up[7]. And while an agreement concerning adult psychiatric services offered by the Douglas Hospital allows medical teams in Nunavik to work in conjunction with a team of responding psychiatrists as well as a liaison nurse, psychosocial and medical mental health services must be structured and implemented in Nunavik.

Housing resources for users with mental health problems (crisis centre, rehabilitation centre and supervised home) are perpetually overcrowded and have a difficult time fulfilling their mission. For example, clients who are no longer undergoing a crisis but still need to be strictly monitored cannot be transferred from the crisis centre to the supervised home because the latter is full. Isolation rooms are transformed into regular rooms to meet demand.

Lastly, psychiatric legal services, offered in Malartic, have a difficult time sending clients back to Nunavik, and this due to the fact that the follow-up resources offering close monitoring, variable monitoring or supervised accommodations are either overcrowded or non-existent. This has the effect of ensuring that those users who need the most services (legally required or not) cannot return to Nunavik, given the absence of said services.

3.10 Physical health

The primary challenge as regards physical health services is a system that is already running at full capacity. The services offered in the region are already overwhelmed, and human and material resources are inadequate and do not allow for meeting the existing demand. The fragile state and high turnover rate among existing teams of professionals exerts additional pressure on the services offered.

Emergency services requiring a medical evacuation (MEDEVAC) do not have any specific full-time employees assigned to this task. The on-call MEDEVAC team works a regular shift during which it is assigned other tasks in addition to evacuations. Whenever these employees must conduct an evacuation, the remaining personnel in their respective teams are overworked. (See table depicting the duration of transfers). Patients are regularly transported aboard chartered aircraft, which are not equipped as they should be. Only the EVAC aircraft (Challenger) is thus equipped, and thereby fully able to meet evacuation requirements.

In terms of the specialized services offered in the North, human and material resources are also inadequate and do not allow for meeting the existing demand. Specialists are affiliated with RUIS and are difficult to recruit (for example, dermatology). For some areas of specialization, the duration of the transport does not allow for addressing the multiple needs of the clients served. Patients are entered on a waiting list or transferred to the South if their health condition worsens before the specialist's next visit to Nunavik.

There has been an increase, since 2010, of the specialized services offered outside of the region. In 2012, 5,938 users and escorts visited a RUIS McGill facility; this is the equivalent of just over 16 new clients per day, a figure that has been increasing by 9% per year. (Table of number of users and medical escorts having stayed at the MNQ (2008-2012).

[7] Lessard, L., Bergeron, O., Fournier, L., Bruneau, S. (2008). Étude contextuelle sur les services de santé mentale au Nunavik. Institut National de Santé publique du Québec, Québec.

This growth generates serious pressure on:

- the facilities (MNQ, 150 beds);
- transport (patient services; Montréal, Kuujjuaq, Puvirnituq);
- liaison services (logistics, planning of appointments);
- human resources (administration, interpreters, drivers, etc.);
- financial resources (22% increase in 2011-2012).

Chapter 4: Effect of the economic boom on the use of health and social services

The economic boom that Nunavik is experiencing will likely have both positive and negative effects. Because they are taking place within an open system, the various potential repercussions are hard to quantify at this time. For example, the mass influx of workers in communities of fewer than 200 inhabitants over a short period of time may well result in disruptions of a psychosocial, cultural, political, family-oriented and financial nature.

However, the fragile state of the region's health and social services network, particularly as regards some of the services/programs addressed in chapter 3, presages certain repercussions associated with economic growth and the development of mines. Furthermore, the effects of this development are already being felt in some communities that are receiving mining royalties or through which large numbers of workers are passing.

Based on the situation involving Xstrata Nickel's Raglan mine, located south of Salluit, assumptions can be made regarding the various positive and negative impacts such a mining project can have on a community.

- Positive impacts:
  - monetary royalties to the community (buildings, activities);
  - job opportunities;
  - more efficient transport of merchandise.
- Negative impacts:[8]
  - difficulty individuals have managing the monetary royalties received;
  - rise in the addiction rate (alcohol and drugs);
  - increased trauma, unplanned;
  - hike in the number of medical assessments;
  - increase in the number of reports accepted by Youth Protection;
  - rise in the number of cases of family violence;
  - absence or drop in the quality of sanitary services (drinking water and wastewater);
  - public and parapublic services brought to a standstill;
  - decrease in the quantity and quality of available food.

Programs and services likely to be increasingly impacted by the economic boom are discussed in this section.

Programs and services

4.1 Public health

Mining operations, because of the environmental changes they lead to, obviously represent potential health risks to the communities of Nunavik. And while less apparent, they can also entail behavioural changes. Greater access to employment and the receiving of royalties by the local population, while often resulting in more income, also have negative effects. As observed in other Canadian Aboriginal mining communities, such scenarios often lead to an increase in the consumption of mood-altering drugs, due to the lack of financial management experience of residents, and the lack of resources to deal with family conflicts and stress.[9] This increase in drug use has an impact on physical and mental health.[10] This is but one example

[8] Kativik Regional Government meeting, 2008-08 report, KRPF.

[9] Canada's Resilient North: The Impact of Mining on Aboriginal Communities G. Gibson, J. Klinck http://www.pimatisiwin.com/uploads/330599908.pdf.

supporting the theory that changes in northern communities require an increase in prevention, promotion and protection initiatives.

It must be remembered that the wealth creation ensuing from the mining boom and the massive influx of workers in the region will expose the population to rapid change, to overcrowding with regard to housing, to emotional trauma, and to a possible resurgence in the traffic of alcohol and drugs. In a situation where drug consumption is widespread and has become commonplace, greater availability (rise in traffic), accessibility (drop in price) and variety (synthetic drugs) could all contribute to an increase in substance abuse among workers (given the hard working conditions) and youth.

The massive influx of non-Inuit workers in certain Nunavik communities portends a chipping away at the region's cultural capital (language, cultural identity), a resurgence of drug use, and greater poverty among some of the groups not benefiting from job creation (notably women). Together, these elements could play a role in an ongoing or heightened psychological distress among the local population.

Northern development, rather than focusing on the community spirit that brings life to northern communities, is mainly concerned with the development of natural resources by foreign companies. This exogenous development model, present in the North for numerous decades, has been severely criticized. The stripping away of land and resources generates but limited opportunities for true economic development, leading instead to a greater reliance on governments (for financial assistance), a loss of culture, the destruction of the social and cultural fabric on which the Aboriginal identity rests, a diminished independence, and a feeling of helplessness. Northern development is hence likely to create various tensions: psychological (distress and frustration), sociological (harsh living conditions, limited access to job opportunities), cultural (clash of traditions and values, marginalization), and systemic (lack of tailored social services dedicated to mental health and drug addiction problems). Together, these factors can lead to increased violence within families and communities, as well as a rise in illegal activities associated with drug trafficking and prostitution.

A number of risk factors related to northern development are already affecting the region from a sexual health perspective (rate of blood-borne and sexually transmitted infections and number of pregnancies). The spike in income levels ensuing from the mining boom, in tandem with the massive influx of workers in the territory (mainly young men), may very well have dire consequences due to the increased availability of alcohol and drugs.

Key among the feared impacts on the population are a resurgence in risky behaviours associated with excessive drinking, unprotected sexual relations, use of injection drugs, blood-borne and sexually transmitted infections (including HIV, over the medium term), unwanted or risky pregnancies (FASD), single-parent families, financial difficulties, physical and sexual abuse, spousal abuse, harassment, sexual exploitation and prostitution.

Among the feared impacts on services, we predict a surge in demand for consultation, prevention, education and specialized services (for example, obstetrics-gynecology, youth services, support for families, etc.). We also expect that there will be a need to develop or strengthen education, prevention and communication strategies for the population as well as the various work environments, and to establish sites for the free distribution of condoms, for testing for blood-borne and sexually transmitted infections, etc.

From the perspective of nutrition, a number of factors may hinder access to traditional foodstuffs: climatic changes, the presence of environmental contaminants in various traditional foods, the high costs of hunting and fishing, a drop in the transmission of traditional knowledge, etc. An increase in mining activities will assuredly have a major impact on the territory and its animal herds, including such effects on migration cycles which would cause animals to stay yet further away from the region's villages. Such changes could make it even more difficult to access traditional species eaten by the local population.

In Nunavik, the commercial food available, as well as its quality, varies from one community to the next. The geographic remoteness of the villages makes it hard to regularly stock store shelves with food. Recent

[10] Aboriginal Peoples and Mining in Canada: Consultation, Participation and Prospects for Change http://metisportals.ca/MetisRights/wp/wp-admin/images/Aboriginal%20Peoples%20and%20Mining%20in%20Canada.pdf

changes in federal subsidy programs for the transportation of foodstuffs, moreover, have left the region striving to adapt and ensure its annual supply of food. Overly speedy growth in the region's population due to northern development initiatives would significantly increase the pressure on retailers to meet a growing demand for food supplies of an acceptable quality and in the necessary quantities. A new infrastructure requiring major investments would then be necessary to enable the storage of the non-perishable goods delivered by boat every year. Furthermore, the current federal subsidy is characterized by a capped budget. A rapid spike in demand could lead to a hike in the price of perishable goods and by extension, the food costs of households.

It should be assumed that environmental changes will go hand in hand with northern development, varying according to the characteristics of the specific development project in question. It is a known fact that Arctic regions, and particularly Nunavik, are impacted by environmental changes. Nunavik, in fact, is among those regions in the world which are the most impacted by climatic change, with effects on the territory including thawing of the permafrost, reduction in the thickness of the ice, etc. A system for assessing the impacts of northern development projects on the environment will need to be introduced as quickly as possible to ensure that the negative impacts of this growth can be anticipated and eventually monitored. Nunavik public health authorities (DSP) must be able to rely on the help of expert external resources specialized in impact evaluations as well as the INSPQ and university representatives.

Possible solutions:

- Increase the number of health prevention activities.
- Create an environmental health division or department.
- Offer more information sessions on nutrition and lifestyle habits.
- Conduct a comparative study in the area of health (Qanuippitaa 2014).

4.2 General services

The influx of outsiders and the presence of a mine in the territory not only contribute to greater traffic in the region's communities, but also lead to certain physical and mental health problems.

In Canada, infectious diseases must be considered when assessing the issues related to resource development (they will generally appear when workers arrive in a region and interact with the local population). There are three infectious diseases that are particularly thorny: blood-borne and sexually transmitted infections, gastrointestinal diseases and respiratory diseases[11]. Prostitution and unwanted pregnancies are two other problems that tend to mushroom in such a situation.

General services, in response, should increase the services offered so as to better meet the population growth, which will inevitably involve greater demand for walk-in medical appointments, social services, emergency services and telephone consultations for health and/or psychosocial problems.

Possible solutions:

- Add more general health intervention teams.
- Make it a point to plan service agreements (mines, CLSC, health centres).
- Develop technical and functional plans tailored to migrating populations.

[11] Health Impact Assessment (HIA) of Mining Activities near Keno City, Yukon, September 30, 2012.

Programs designed to address specific problems

4.3 Youth in difficulty

The limited reach of the service offer for youth in difficulty is a reminder of the major problems experienced by Nunavik's youth and families. A sudden growth in the population of the various communities due to the development of additional mining sites could have a serious impact on social problems such as alcoholism and drug abuse, westernization, and loss of traditional cultural identity from one generation to the next. For a population already at grips with a severe housing shortage and unstable social services, this could be highly problematic. Such development would essentially aggravate social tensions without creating any jobs for the region's youth, without building homes for residents, and with no plan for improving the various services/programs that could be of assistance to hundreds of children and adolescents.

Possible solutions:

- Plan and reorganize the regional services dedicated to this issue.
- Create a rehabilitation resource dedicated to addiction problems (12-18 years).
- Support an increase in activities bringing together members of different generations.
- Have the mental health network adopt a family-oriented approach.
- Set up and provide ongoing support to rehabilitation resources for youth in difficulty.

4.4 Addiction

Twelve of Nunavik's fourteen communities are "dry" villages where the sale or possession of alcohol is prohibited. In spite of this, both alcohol and drugs regularly make their way to these municipalities, notably in the luggage of seasonal workers. There is thus a real fear that the problem facing communities with regard to addiction could be aggravated by either an influx of workers from outside the region or the royalty system. Given the limited services currently available, the future may be quite dim if changes are not made.

Possible solutions:

- Plan and reorganize the regional services dedicated to this problem.
- Create new rehabilitation resources dedicated to the issue of addiction.
- Ensure ongoing training on addiction for the region's social workers.
- Introduce stricter controls on the importing of drugs and alcohol.
- Create learning activities on substance abuse.
- Increase the addiction services offered to the population.

4.5 Mental health

According to several authors, the high rates of suicide, psychological distress and mental health problems among Nunavik's Inuit can be explained by various factors, including the trauma ensuing from their recent colonization and its transmission from one generation to the next[12]. The massive influx of workers from outside the region, infrastructure development and the restrictions on traditional activities are all possible repercussions of the development of mines in Nunavik. These impacts serve to emphasize the negative effects of colonization and the associated feelings of alienation. Together, these repercussions could affect

[12]For examples of this, see White, J., Jodoin, N. (2003). Aboriginal Youth: A Manual of Promising Suicide Prevention Strategies. Center for Suicide Prevention, Calgary.

the prevalence of mental health problems and instances of suicide and in so doing, increase the stress experienced by the region's mental health practitioners.

Also, whereas extreme poverty affects a population's physical health, socioeconomic variance, in turn, has an impact on its mental health[13]. The arrival of a better-paid labour force from outside of the region, combined with the existence of local workers enjoying a significantly more interesting salary, could exacerbate socioeconomic variances and further impact the population's mental health.

Possible solutions:

- Plan and reorganize the regional services dedicated to this problem.
- Undertake activities designed to provide the population with clear and accurate information on mental health issues.
- Create and retain mental health teams and housing resources.
- Hire an Inuit consultant in the area of suicide prevention.
- Ensure the regional implementation of the ASIST program.
- Have the mental health network adopt a family-oriented approach.

4.6 Physical health

The growth of the region's population will likely generate a rise in the need for physical health services (emergency walk-in medical appointments, diagnostic exams, on-call personnel, etc.). Furthermore, a larger population will translate into a greater number of emergency transfers. Because the number of aircraft in Québec dedicated to these transport activities is not called upon to increase, such a scenario will place additional stress on existing healthcare teams as well as increase the risks faced by those patients who cannot be evacuated within a reasonable timeframe.

Possible solutions:

- Add more physical health intervention teams.
- Make it a point to plan service agreements (mines, CLSC, health centres).
- Improve of diagnostic services and increase the number of dedicated employees (in the North and through telehealth).
- Make greater use of technology (telehealth, DSQ, robots, etc.).

4.7 Priorities

Priorities for action in addressing the Nunavik region's economic and mining development must address issues that extend beyond health and social services. In fact, all of the partners whose actions could potentially impact health determinants (housing, economic gaps, jobs, education) must be urged to respond. From the perspective of health and social services, however, a few key areas with the greatest needs will be prioritized: emergency healthcare services, mental health, addiction and youth in difficulty.

We also believe that the repercussions of the North's development on the Nunavik population will need to be closely monitored. As previously mentioned, this development can have extremely interesting spin-offs for the Nunavimmiut, but only as long as it rests on the population's full participation. Logical benefits include a better socioeconomic status due to improved access to employment, greater interest in academic success as a path to holding better-paying jobs in the various activity sectors, improved infrastructure, etc.

[13] Phipps, S. (2003). *The Impact of Poverty on Health*. Canadian Institute for Health Information.

But this same development, if poorly structured and organized, could have exactly the opposite effect of that desired, and result in greater tension within family circles and communities, combined with a worsened social environment.

To be able to closely follow changes in the conditions and health of the population, an accurate portrait of the general health condition of the residents of Nunavik's 14 communities prior to the onset of northern development must be drafted. Seeing as the last regional health survey of the population was carried out in 2004, it would be perfectly reasonable to repeat this exercise in 2014. This would allow for determining the basic health condition of the Nunavimmiut, which would then serve as a starting point for comparisons in years to come.

Conclusion

While predicting all of the repercussions of the economic boom on the territory is problematic, the current state of the region's health and social services leads us to believe that these services can only be negatively affected by a massive influx of workers from outside the territory and the implementation of industries, both of which will disrupt the traditional lifestyle of the Inuit who account for the majority of the territory's population. We must therefore act quickly if we are to meet the current needs of the region's population and plan for the future.

References

Aboriginal Peoples and Mining in Canada: Consultation, Participation and Prospects for Change http://metisportals.ca/MetisRights/wp/wp-admin/images/Aboriginal%20Peoples%20and%20Mining%20in%20Canada.pdf.

Kativik Regional Government meeting, 2008-08 report, KRPF.

Cameron, E., State of the Knowledge: Inuit Public Health, 2011, National Collaborating Centre for Aboriginal Health, p. 30

Duhaime, Gérard, 2009. La pauvreté au Nunavik : État des connaissances, Canada Research Chair on Comparative Aboriginal Conditions, Université Laval, Québec, Canada, 55 pp.

DRMG NUNAVIK, Organisation des services médicaux sur le territoire du Nunavik, Dr. François Prévost, Dr. Danielle Mercier, Dr. Geneviève Auclair, Dr. Nathalie Boulanger, May 2012.

G. Gibson, J. Klinck. Canada's Resilient North: The Impact of Mining on Aboriginal Communities. http://www.pimatisiwin.com/uploads/330599908.pdf

Health Impact Assessment (HIA) of Mining Activities near Keno City, Yukon September 30, 2012.

Innulitsivik Health Centre, Annual report, 2011-2012.

Lessard, L., Bergeron, O., Fournier, L., Bruneau, S. (2008). Étude contextuelle sur les services de santé mentale au Nunavik. Institut National de Santé publique du Québec, Québec.

Ministère de la Santé et des Services sociaux du Québec (2007). Unis dans l'action : Orientations pertaining to standards regarding access, continuity, quality, effectiveness and efficiency. Addiction service program. Service offer 2007-2012.

Phipps, S. (2003). The Impact of Poverty on Health Canadian Institute for Health Information.

Statistics Canada, 2008c. Canada's Ethnocultural Mosaic, 2006 Census: Findings. No. 97-562-X in Statistics Canada catalogue. http://www12.statcan.gc.ca/census-recensement/2006/as-sa/97-562/index-eng.cfm.

White, J., Jodoin, N. (2003). Aboriginal Youth: A Manual of Promising Suicide Prevention Strategies. Center for Suicide Prevention, Calgary.

Appendices

NRBHSS indicators

						Source	Moyenne ou valeur	Référence au texte
Transport - Consultation téléphoniques		Années de références	2009-2010	2010-2011	2011-2012			
	12	Nombre de transports ou évacuations médicales - Nord vers les CSSS Nunavik			480	Rapport Annuel 2011-12 CSI+CSTU	**480**	3,2,2
	13	Nombre de patients ayant séjourné au MNQ			3439	Arrivées par village au MNQ	**3439**	2,1,x
	14	Nombre d'escortes ayant accompagnés les patients au MNQ			1964	Arrivées par village au MNQ	**1964**	2,1,x
	15	Site Minier : Évacuations médicales urgente vers les CSSS Nunavik	18	20	16	Mine Raglan	**18**	2,1,x
	16	Site Minier : Nombre de transports - Cas electifs	130	145	180	Mine Raglan	**152**	2,1,x
	17	Site Minier : consultations médicales CSSS	148	165	196	Mine Raglan	**170**	2,1,x
Maladies à déclaration obligatoire	18	Prévalence de certaines maladies infectieuses, ITSS Chlamydia trachomatis et Infection gonococcique	1834	1815	1906	RRSSSN - MADO	**1852**	3,1,1
	19	Prévalence de certaines maladies infectieuses, Tuberculose				En attente de Hamado		3,1,5
	20	Prévalence de certaines maladies infectieuses, Taux d'infection nosocomiale				Données de 1 trimestre seulement		3,1,7
Nutrition	21	Provenance de l'apport calorique				Tableau ? Serge+ nutritionnistes		3,1,4
	22	Coût du panier d'épicerie, en % par rapport à la moyenne Québécoise				Plan Nunavik	**157%**	3,1,4
	23	Proportion de la population ayant souffert d'insécurité alimentaire				Health profile of Nunavik- RRSSS et INSPQ p. 20	**23,5%**	3,1,4
Mortalité	24	Taux de mortalité infantile / 1000 (versus moyenne québecoise)				DGASP - Santé pop. des comm. du territoirre du plan Nord	**20,1 / 4,6**	3,1,7
	25	Taux de mortalité ajusté selon l'âge relié au cancer / 100 000 (versus moyenne québecoise)				DGASP - Santé pop. des comm. du territoirre du plan Nord	**525 / 244**	3,1,7
	26	Taux de mortalité reliés aux maladies respiratoires / 100 000 (versus moyenne québecoise)				DGASP - Santé pop. des comm. du territoirre du plan Nord	**356 / 65**	3,1,7
	27	Rapport de mortalité standardisé reliés aux suicides (versus moyenne québécoise)				DGASP - Santé pop. des comm. du territoirre du plan Nord	**10 / 1**	3,1,7
	28	Rapport de mortalité standardisé, traumatismes non-intentionnels (versus moyenne québécoise)				DGASP - Santé pop. des comm. du territoirre du plan Nord	**7,1 / 1**	3,1,7
Population	29	Pyramide des ages				Health profile of Nunavik- RRSSS et INSPQ p. 13		1,2,3
	30	Taux de naissance prématurés (versus moyenne québecoise)				DGASP - Santé pop. des comm. du territoirre du plan Nord	**10,8% / 7,5**	1,5,3
	31	Espérance de vie à la naissance (versus moyenne québecoise)				DGASP - Santé pop. des comm. du territoirre du plan Nord	**65,1 / 80,5**	1,5,3
	32	Taux de fécondité des jeunes filles de 15 à 19 ans /1000 (versus moyenne québecoise)				DGASP - Santé pop. des comm. du territoirre du plan Nord	**122,1 / 10,3**	1,5,3
Emploi		Années de références	1998	2005	2011			
	33	Nombre d'emplois, temps complet : Bénéficiaires de la CBJNQ	1184	1782	2124	KRG - Les emplois au Nunavik: Tableau 1.2 page 13:	**1697**	1,3
	34	Nombre d'emplois, temps complet : NON-Bénéficiaires de la CBJNQ	930	1407	2055	KRG - Les emplois au Nunavik: Tableau 1.2 page 13:	**1464**	1,3
		Années de références	1998	2005	2010			
	35	Nombre de travailleurs saisonniers : Bénéficiaires de la CBJNQ	226	364	353	KRG - Les emplois au Nunavik: Tableau 2,4 page 44:	**314**	1,3
	36	Nombre de travailleurs saisonniers : NON-Bénéficiaires de la CBJNQ	189	489	415	KRG - Les emplois au Nunavik: Tableau 2,4 page 44:	**364**	1,3
		Années de références			2011			
	37	Nombre de travailleurs oeuvrant dans le secteur minier : Bénéficiaires de la CBJNQ			142	KRG - Les emplois au Nunavik: Tableau 1,5 page 20	**142**	1,3
	38	Nombre de travailleurs oeuvrant dans le secteur minier : NON-Bénéficiaires de la CBJNQ			757	KRG - Les emplois au Nunavik: Tableau 1,5 page 20	**757**	1,3
Problématiques reliés à la santé	39	Prévalence du diabète (versus moyenne québecoise)				DGASP - Santé pop. des comm. du territoirre du plan Nord	**5% / 6%**	enjeux
	40	Prévalence de l'obésité (versus moyenne québecoise)				DGASP - Santé pop. des comm. du territoirre du plan Nord	**28% / 16%**	enjeux
	41	Proportion de fumeurs (%) (versus moyenne québecoise)				DGASP - Santé pop. des comm. du territoirre du plan Nord	**77% / 23%**	enjeux
	42	Taux de consommation élevé d'alcool (versus moyenne québecoise)				DGASP - Santé pop. des comm. du territoirre du plan Nord	**68% / 18%**	enjeux
		Années de références	2009-2010	2010-2011	2011-2012			
	43	Nombre d'usagers ayant reçu des services en toxicomanie	15	15	57	Isuarsivik Treatment Center	**29**	3,1,7
	44	Incident criminel impliquant un acte violent						3,1,7
	45	Taux de surpeuplement dans les logements (versus moyenne québecoise)				Stat Can - 2001	**68% / 53%**	1,4
Scolarité	46	Taux de diplomation secondaire après 7 ans (versus moyenne québécoise)				MEQ	**17,8% / 72,3%**	3,4,1,1,1
	47	Taux d'éducation (au moins un diplôme, 25 ans et plus) (versus moyenne québecoise)				DGASP - Santé pop. des comm. du territoirre du plan Nord	**50% / 83%**	3,4,1,1,1
	48	Scolarité: Grade universitaire - Personne de 25 ans et plus (versus moyenne québecoise)				Health profile of Nunavik- RRSSSN et INSPQ p. 20	**10% / 21%**	3,4,1,1,1
		Années de références	2008-2009	2009-2010	2010-2011			
Budgets	49	Budget SANA (en millions de dollars)	18,7	19,0	20,4	Rapports annuels RRSSSN	**19,4**	2,1,4
	50	Budget Santé du Nunavik (en millions de dollars)	96,7	96,3	130,5	Rapports annuels RRSSSN	**107,8**	2,1,4

Notes:
Indicateur 39 et 40: Calcul des taux aux points 39 et 40 = heures supplémentaires ou heures main-d'œuvre indépendante versus heures régulières (personnel et cadre)

MSSS indicators

		CSI					CSTU					Moyenne Régionale
		2009-2010	2010-2011	2011-2012	**Moyenne**	Source	2009-2010	2010-2011	2011-2012	**Moyenne**	Source	
1	Nombre d'usagers desservis par les services psychosociaux généraux en CSSS (mission CLSC)				**6719**	Extrapolation*[2]			5,368	**5,368**	Rapport Annuel 2011-12	**6043.5**
2	Nombre moyen d'interventions par usager réalisées dans le cadre des services psychosociaux généraux en CSSS (mission CLSC)				**8.33**	Rapport Annuel 2009-12				**4.09**	Rapport Annuel 2011-12	**6.21**
3	Taux de signalements retenus par mille jeunes de population				**746**	Rapport Annuel 2009-12				**687**	CSTU: DPJ	**716.5**
4	Nombre de jours-présence aux soins infirmiers de courte durée aux adultes et aux enfants (source : AS-471, code 6050)				**3608**	Rapport Annuel 2009-12				**1921**	Rapport Annuel 2011-12	**2764.5**
5	Nombre d'admissions aux soins infirmiers de courte durée aux adultes et aux enfants				**871**	Extrapolation*[2]				**696**	Rapport Annuel 2011-12	**783.5**
6	Nombre de nouveaux dossiers				**640**	Rapport Annuel 2009-12				**946**	Rapport Annuel 2011-12	**793**
7	Nombre d'usagers au bloc opératoire (source : AS-471 code 6260)				**627**	Rapport Annuel 2009-12			119	**119**	AS-471	**373**
8	Nombre d'usagers en chirurgie d'un jour (source : AS-471 code 6070)				**434**	Rapport Annuel 2009-12		64	68	**264**	AS-471	**349**
9	Nombre de déplacements d'usagers par EVAQ		135	146	**141**	Rapport Annuel 2011-12		120	158	**139**	Rapport Annuel 2011-12	**140**
10	Main-d'œuvre : Taux de temps supplémentaire *[1]	13.45%	5.63%	6.44%	**8.51%**	AS-471	9.20%	9.05%	9.90%	**9.38%**	AS-471	**8.94%**
11	Main-d'œuvre : Taux de recours à la main-d'œuvre indépendante *[1]	5.47%	8.57%	4.87%	**6.30%**	AS-471	0	0	0	**0**	AS-471	**3.15%**

Notes:

*1: Calcul des taux aux points 10 et 11 = heures supplémentaires ou heures main-d'œuvre indépendante versus heures régulières (personnel et cadre)

*2: Indicateurs 1 et 5, Pour le CSI estimation en relation avec la population de l'Hudson

Demographic projection - Nunavik

Nunavik Population																
Villages		Population[14] 2006		Population[15] 2011		Natural annual growth rate (%) 2006-2011		Natural population growth projection 2016		Natural population growth projection 2020		Artificial and seasonal population growth projection[16] (mining, construction, tourism) 2011		Artificial and seasonal population growth projection[16] (mining, construction, tourism) 2016		Artificial and seasonal population growth projection[16] (mining, construction, tourism) 2020	
Hudson	Salluit	1,241	5,937	1,347	6,719	1.71%	2.65%	1,466	7,667	1,569	8,531	1,683	7,230	1,805[17]	8,227	1,908	9,096
	Akulivik	507		615		4.26%		758		895		625		771		909	
	Umiujaq	390		441		2.62%		502		556		471		533		589	
	Inukjuak	1,425		1,597		2.41%		1,799		1,979		1,647		1,862		2,044	
	Ivujivik	349		370		1.20%		393		412		370		401		420	
	Kuujjuarapik	568		657		3.13%		767		867		657		779		880	
	Puvirnituq	1,457		1,692		3.23%		1,983		2,252		1,777		2,077		2,347	
Ungava	Kangirsuk	466	4,658	549	5,368	3.56%	3.36%	654	6,246	752	7,056	573	7,733	683	8,642	782	10,128
	Kuujjuaq	2,115		2,375		2.46%		2,682		2,955		4,148		4,493[18]		5,178[1920]	
	Kangiqsujuaq	605		696		3.01%		807		909		883		998		1,104	
	Quaqtaq	315		376		3.87%		455		529		388		469		544	
	Aupaluk	174		195		2.41%		220		242		247		230		504[21]	
	Tasiujaq	248		303		4.44%		376		448		303		386		458	
	Kangiqsualujjuaq	735		874		3.78%		1,052		1,221		874		1,383		1,559	
Total		10,595		12,087		3.01%		13,913		15,587		14,963		16,870		19,225	

[14] Statistics Canada, 2006 census.
[15] Statistics Canada, 2011 census.
[16] Job study, Kativik Regional Government, 2011.
[17] Nunavik Nickel mines, 500 jobs 2014-2017, DGASP, Santé pop. des communautés du territoire plan nord, 2012.
[18] Quest Rare Minerals Corporation, 150 jobs 2014-2017, DGASP, Santé pop. des communautés du territoire plan nord, 2014.
[19] Otelnuk Lake, Adriana Resources Inc./Wisco, projection - 400 jobs, DGASP, Santé pop. des communautés du territoire plan nord, 2012.
[20] Eldor Carbonatite, Commerce Resources Corporation, projection - 200 jobs, DGASP, Santé pop. des communautés du territoire plan nord, 2012.
[21] Hopes Advance, Oceanic Iron Ore Corporation, projection - 400 jobs, DGASP, Santé pop. des communautés du territoire plan nord, 2012.

Graph 1: Level of education of the population

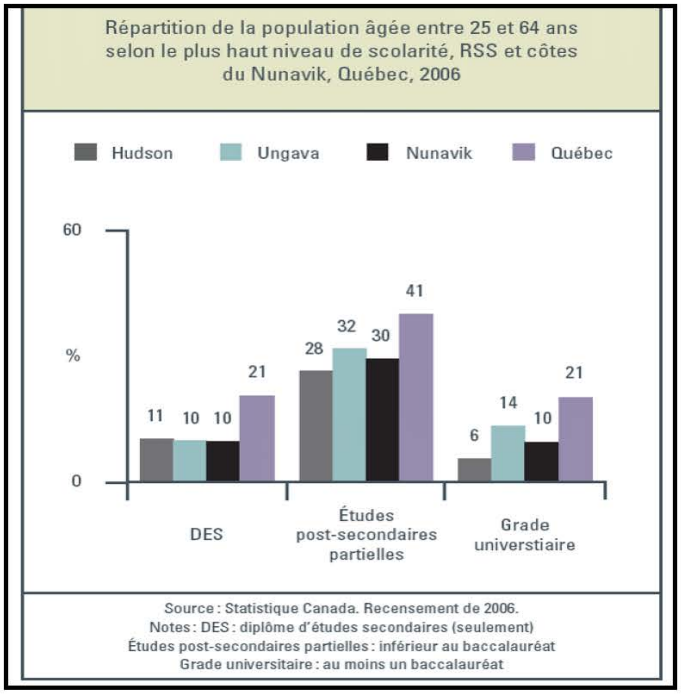
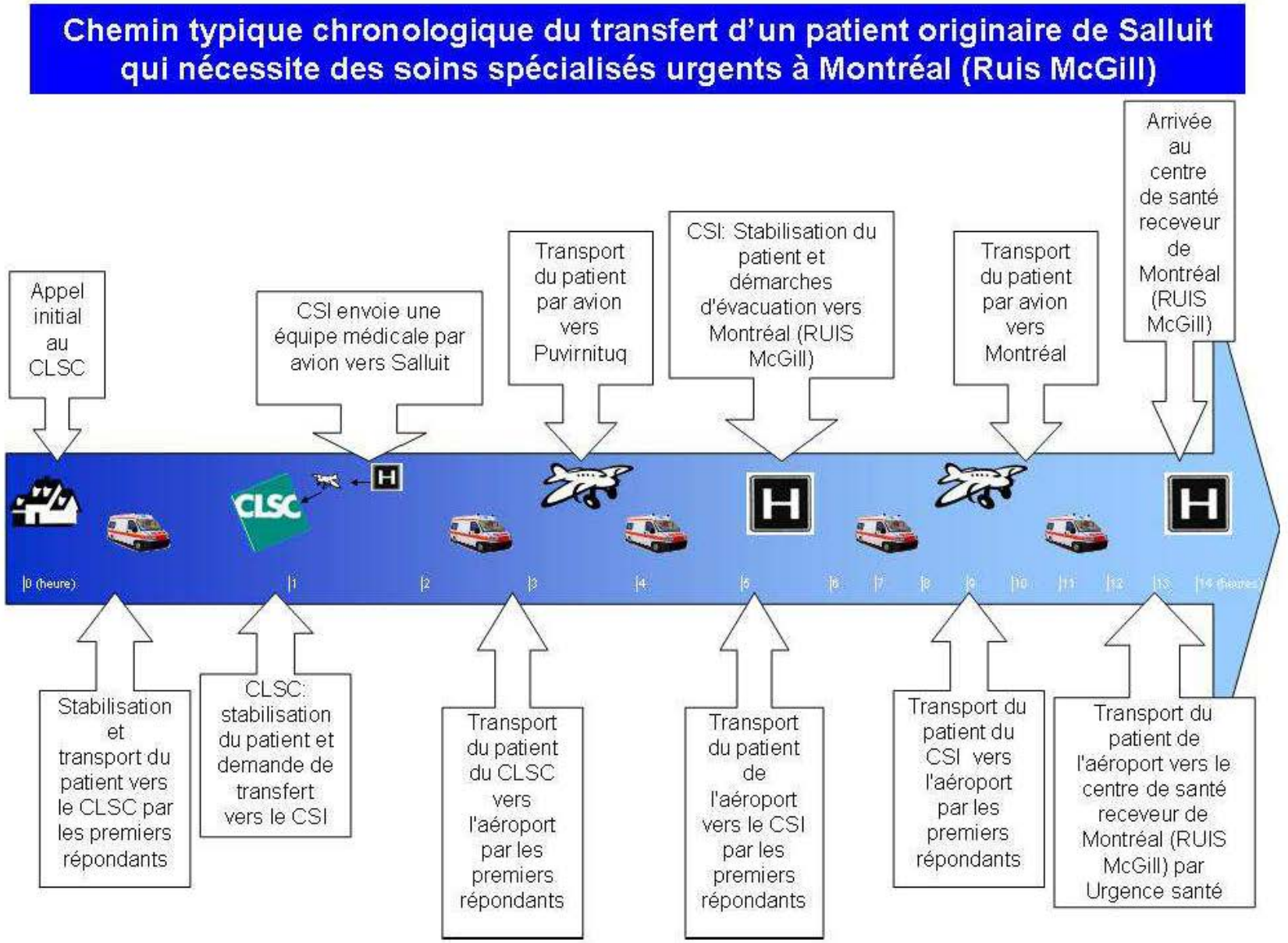


Table 2: List of different public and parapublic services in Nunavik

Communities	Health											Education					Regional administration								Others				Federal				
	Health and social services centre (CSSS)	Point of service (CLSC, DYP)	FTR 6-12 years	Group home (12-18)	Supervised home (mental health)	Regional board of health and social services	Rehabilitation centre for youth aged 12-18	Residence for the elderly with a loss of autonomy	Centre for mental health patients (crisis centre)	Treatment centre (disintoxication)	Shelter for women	Kativik School Board	Primary and secondary school	Vocational centre	Adult education centre	College resource centre	Kativik Regional Government	Long-term job centre	Daycare centre	Recreational centre	Nunavik Park	Airport	Kativik Regional Police Force station	Mayor's office	Sureté du Québec	Wildlife protection office	Court of justice	Kativik Municipal Housing Bureau	Meteorological Service of Canada	Post office	NAV CANADA	Service Canada	Canada Post
Akulivik		√											√					√	√	√		√	√	√						√			
Aupaluk		√											√					√	√	√		√	√	√						√			
Inukjuak		√									√		√	√	√			√	√	√		√	√	√					√	√			
Ivujivik		√											√					√	√	√		√	√	√						√			
Kangiqsualujjuaq		√											√					√	√	√	√	√	√	√						√			
Kangiqsujuaq		√						√					√			√		√	√	√	√	√	√	√						√			
Kangirsuk		√											√					√	√	√		√	√	√						√			
Kuujjuaq	√		√	√	√	√		√		√	√	√	√		√		√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
Umiujaq		√											√					√	√	√	√	√	√	√						√			
Kuujjuarapik		√	√										√					√	√	√		√	√	√			√			√			
Puvirnituq	√			√				√	√				√					√	√	√		√	√	√			√			√			
Quaqtaq		√											√					√	√	√		√	√	√						√			
Salluit		√					√				√		√					√	√	√		√	√	√						√			
Tasiujaq		√											√					√	√	√		√	√	√						√			
Others							√																										

Emergency transport services

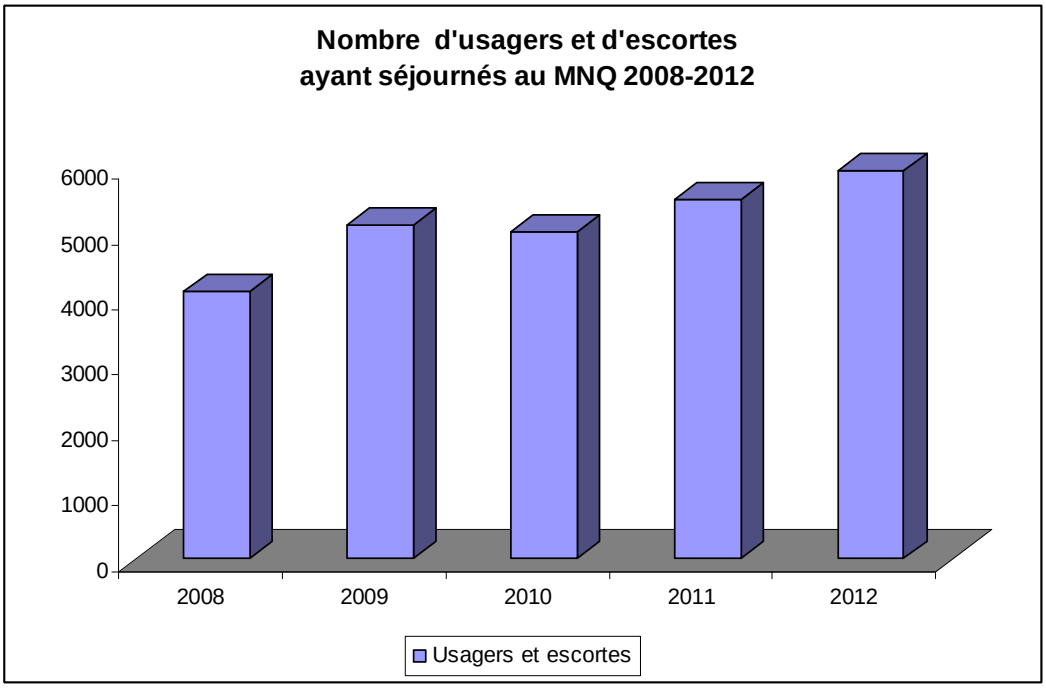


Minimum durations of air transport services

The table below indicates the minimum times for medical evacuations.

Actual average transfer times between the villages and the nearest hospital centre	
HUDSON BAY villages *1	
Salluit	5.5 hrs
Ivujivik	5 hrs
Akulivik	2.5 hrs
Inukjuak	2.45 hrs
Umiujaq	4.45 hrs
Kuujjuarapik	6 hrs
***1: From Puvirnituq, add 8 hours to reach the tertiary centre (Montréal).**	
UNGAVA BAY villages *2	
Tasiujaq	2.5 hrs
Aupaluk	3 hrs
Kangirsuk	3.5 hrs
Quaqtaq	4 hrs
Kangiqsujuaq	5 hrs
Kangiqsualujjuaq	3 hrs
Raglan mine	5.5 hrs
***2: From Kuujjuaq, add 6 hours to reach the tertiary centre (Montréal).**	

Number of users and medical escorts having stayed at the MNQ (2008-2012)



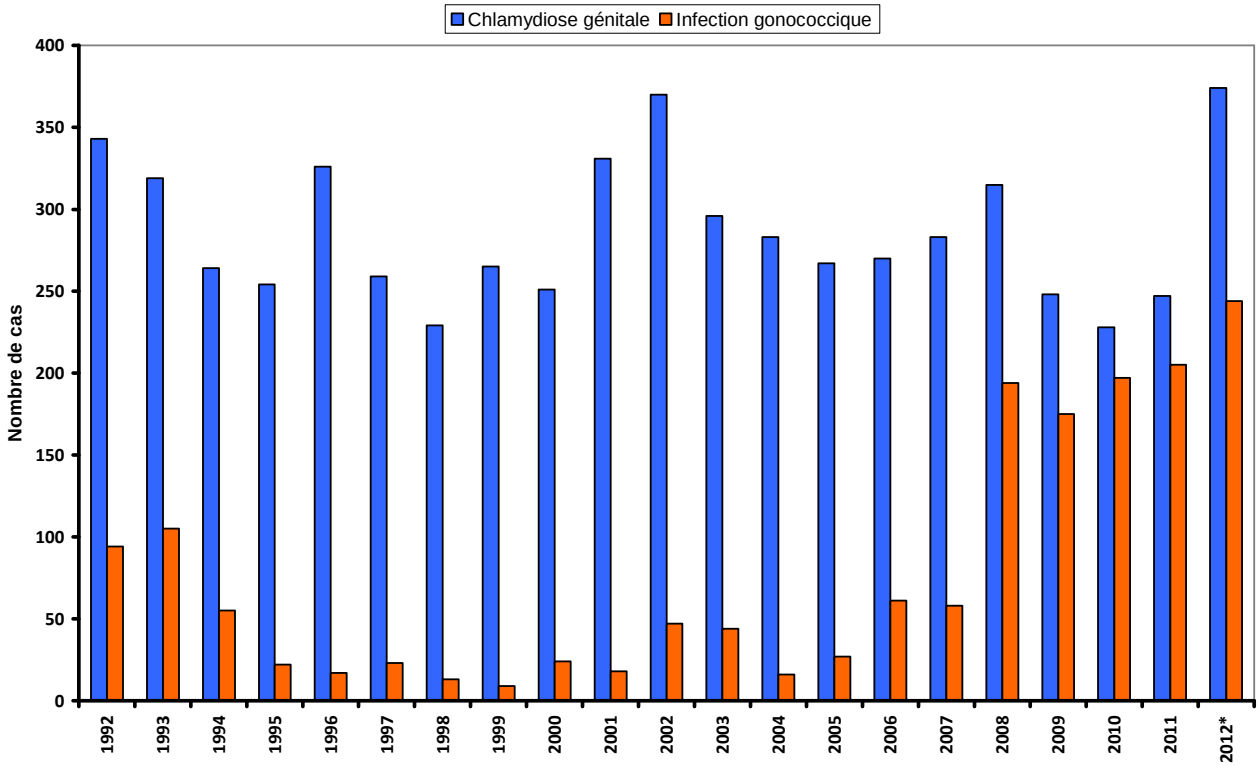
Escort/patient ratios in Nunavik

	MNQ clientele identification, 2011-2012		
	IHC	**UTHC**	**Nunavik**
Patients	2,174	1,265	3,439
Escorts	1,334	630	1,964
Total	3,508	1,895	5,403
Escort/patient ratio	**0.61**	**0.50**	**0.57**

A look at public health in Nunavik - Notifiable diseases: genital infection chlamydia trachomatis, gonococcal infection, tuberculosis AND a few social determinants of health

739 cases of infectious notifiable diseases were reported to Nunavik public health authorities (Direction de la santé publique or DSP) in 2012[22] (provisional data), representing an increase of around 42% (218 cases) over 2011. The genital infection chlamydia trachomatis and gonococcal infections account for the vast majority of all of the infectious notifiable diseases reported. The past twenty years (from 1992 to 2012) saw around 78.5 gonococcal infections reported every year. This average was a staggering 286.8 for the genital infection chlamydia trachomatis. Figure 1 depicts the frequency with which these two blood-borne and sexually transmitted infections were declared between 1992 and 2012.

Figure 1: Number of reported cases of the genital infection chlamydia trachomatis and gonococcal infection, Nunavik; 1992-2012*



[22] **2012 data are provisional and could change.**

A 1) Genital infection chlamydia trachomatis

Incidence rates for the genital infection chlamydia trachomatis and gonococcal infection reached levels that were considered, from a public health perspective, as worrisome if not alarming. They were well above the values observed for the rest of the province (Figure 2).

Figure 2: Incidence rates for the genital infection chlamydia trachomatis and gonococcal infection, Nunavik and rest of Québec 1992-2012*

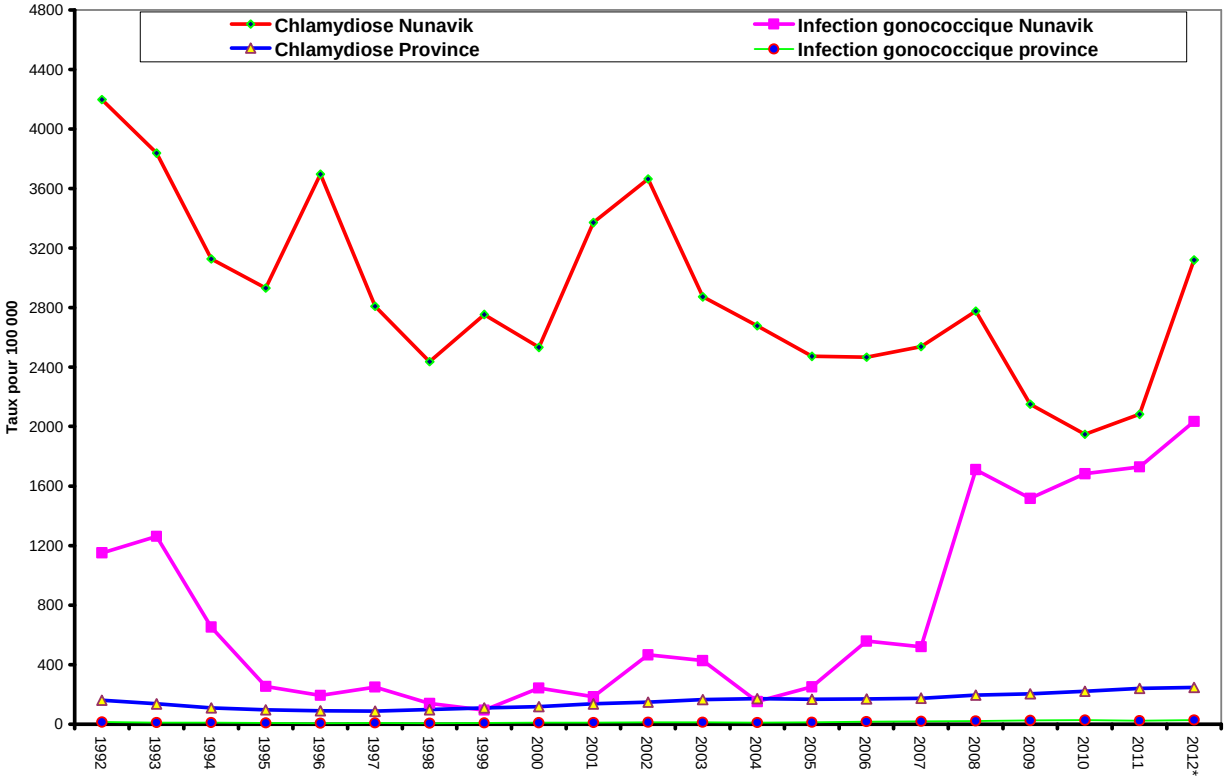
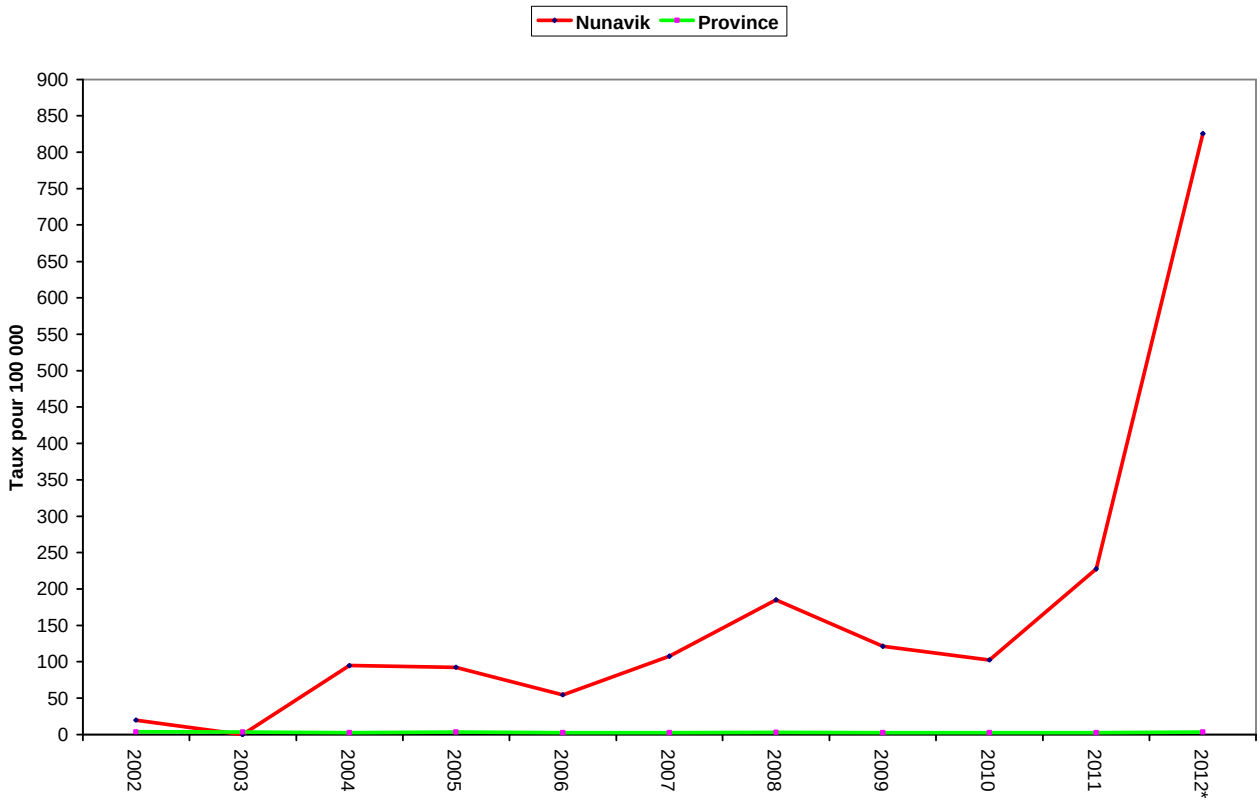


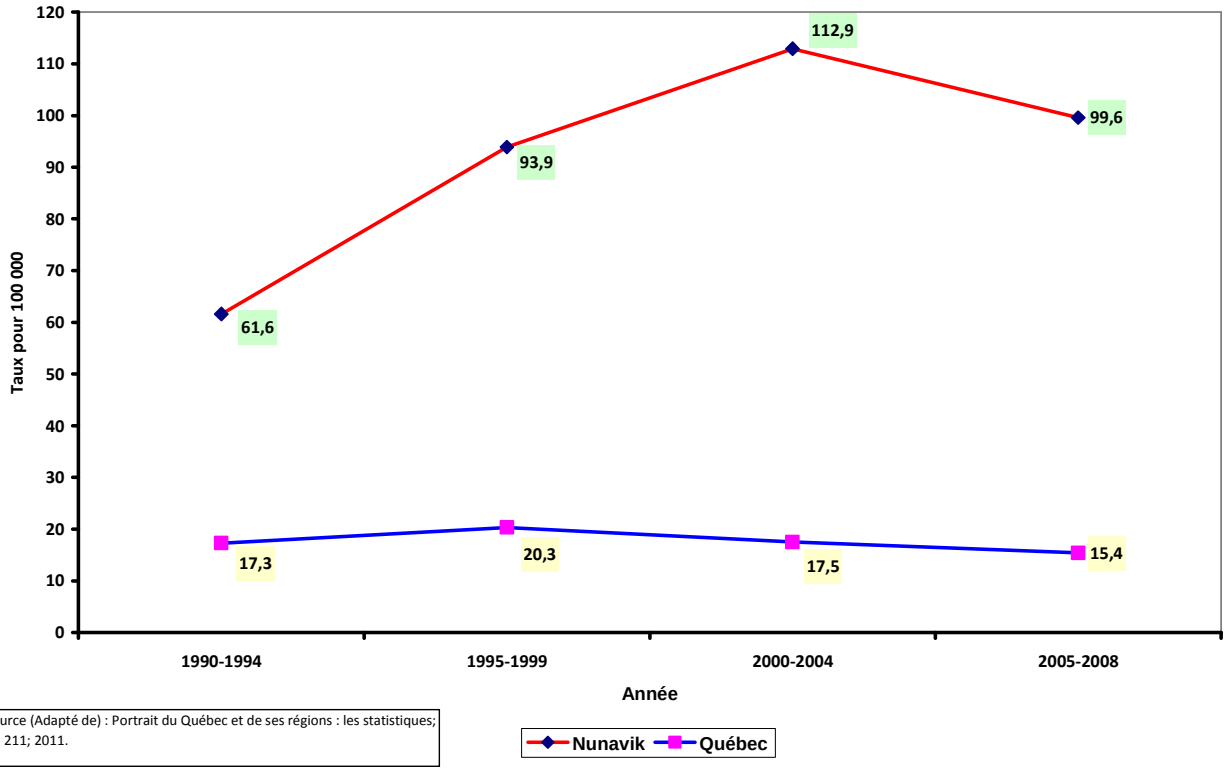
Figure 3: Tuberculosis rate, Nunavik and province of Québec, 2002-2012*



Suicide

263 Nunavimmiut ended their life through suicide between 1980 and 2011, a figure that equals an average of 8.2 suicides per year during the period in question. A few specific years (1999, 2000 and 2003 to 2009) were marked by an unusually high number of suicides (15 to 18 cases). The adjusted rate of suicide (AR for 100,000) for the four periods between 1990 and 2008 was higher in Nunavik than it was for all of Québec. From 1990 to 1994, it was 4 times greater, 5 times greater from 1995 to 1999, and 6.5 times greater for the other two periods, namely from 2000 to 2004 and from 2005 to 2008 (see Figure 4).

Figure 4: Adjusted suicide mortality rate, Nunavik, Québec, 1990-2008



Source (Adapté de) : Portrait du Québec et de ses régions : les statistiques; pp 211; 2011.

Around 41% (2 out of every 5) of all suicides recorded between 1997 and 2011 were committed by youth between the ages of 15 and 19. 1 out of every 3 suicides (33.5%) was committed by someone aged between 20 and 24. This specific rate decreases with age, with youth aged between 15 and 24 (and more specifically, young men) constituting the largest group of persons who commit suicide.

Nocosomial infections in Nunavik:

The problem of nocosomial infections is much different in Nunavik than it is in Québec's other hospital centres. One factor explaining this difference is that hospital stays are shorter. Patients with a serious illness, those requiring surgery or those who need paraclinical exams other than X-rays are quickly transferred to affiliated hospital centres in Montréal. This situation promotes a lower transmission risk for nocosomial infections, with the most vulnerable clients only remaining hospitalized for a short period of time.

Nunavik's two health institutions do not participate in the MSSS' mandatory monitoring program for nocosomial infections, given that the number of admissions for both health centres is lower than the minimum number required for such participation.

Monitoring is instead carried out for MRSA, VRE and C-difficile by infection prevention officers of the institutions in question. Here is a recap of the data available thus far:

	2010-2011 UTHC[23]	2011-2012 IHC[24]
MRSA (colonization and infection) (cases of nocosomial transmission associated with the institution)	14.33 cases/10,000 patient-days (5 new cases)	1.77 cases/10,000 patient-days
VRE (colonization)	5.74 cases/10,000 patient-days (2 new cases)	2 new cases
C. difficile	25.81 cases/10,000 patient-days (9 new cases)	4 new cases

The variance in these results can be explained by the reporting method implemented in the various institutions. At UTHC, the infection prevention officer has direct access to all tests conducted every month. At IHC, a nurse or doctor must make the initial declaration, which means that a sub-declaration of positive results can ensue.

MRSA developed in the community (CA-MRSA):

Like all Aboriginal environments, Nunavik is beginning to experience the odd case of CA-MRSA. Thus far, this has occurred in 4 communities. To date, three outbreaks have occurred in two communities (Kuujjuaraapik and Kangiqsualujjuaq). In the second quarter of 2012, 17 new cases of CA-MRSA were identified in the village of Kuujjuaraapik. CA-MRSA mainly affects healthy young adults and is characterized by recurrent infections of cutaneous tissues (abscesses).

[23] UTHC, Annual report from the infection prevention department (2010-2011).

[24] IHC, Annual report from the infection prevention department (2011-2012).