

THE HOUSING SITUATION IN NUNAVIK: A PUBLIC HEALTH PRIORITY

One of the Public Health mandates is to act on the various factors that affect the population's health. As such, the housing situation in Nunavik constitutes one of the intervention priorities for the regional Department of Public Health.

In Nunavik, the vast majority of housing is on a rental basis, mostly social housing. This reflects policies adopted in the early 1960s as well as economic barriers to private property.

INTERNATIONAL AND NATIONAL RECOMMENDATIONS ON HOUSING

Several international and national organizations have issued recommendations on the definition of healthy housing. All agree that access to adequate housing constitutes a universal right and that the definition of adequate housing goes beyond the simple physical structure. Each occupant in a given dwelling must have access to an acceptable minimum of privacy.

According to the World Health Organization, the fundamental elements of a healthy residential environment include:

- a separate housing unit for each family, if desired;
- a sufficient number of rooms and an interior volume conducive to the health and safety of the occupants in order to avoid overcrowding of common areas and bedrooms;
- appropriate separation of bedrooms, with separate rooms for adolescents and adults of opposite sexes (except the parents);
- a sufficient supply of running water.

According to the United Nations, inadequate and unsafe housing conditions may lead to social and political instability and hinder economic development. It is important to provide housing that can accommodate large families, particularly those with children who have reached adulthood.

The American Public Health Association has identified a series of criteria for adequate housing. Among these criteria, we find:

- satisfaction of fundamental physiological needs

adequate space for children to play
 protection against excessive noise levels

- satisfaction of fundamental psychological needs
 - sufficient privacy for each individual
 - existence of conditions necessary for a normal family life
- protection against contagion
 - sufficient running water
 - sufficient space in bedrooms to reduce to a minimum the danger of propagating infections

HOUSING SITUATION IN NUNAVIK

Social housing has been provided for the Nunavik population since the sixties. Since then, the number and the quality of available housing have improved considerably. However, rapid population growth in the region and socioeconomic underdevelopment have added pressure in terms of household needs and demand in Nunavik. Compared to Quebec, the population growth in the region is much more pronounced (table 1). Between 2001 and 2006, the population of Nunavik has increased by 12% compared to 4.3% for Quebec.

Table 1: Total population, Nunavik, 2006

Nunavik and municipalities	Population		Variation
	2006	2001	2006/ 2001
	n		%
Nunavik	10,784	9,632	12.0
Municipalities			
Akulivik	507	472	7.4
Aupaluk	174	159	9.4

Inukjuak	1,597	1 294	23.4
Ivujivik	349	298	17.1
Kangiqsualujuaq	735	710	3.5
Kangiqsujuaq	605	536	12.9
Kangirsuk	466	436	6.9
Kuujuuaq	2,132	1,932	10.4
Kuujuarapik	568	555	2.3
Puvirnituq	1,457	1,287	13.2
Quaqtaq	315	305	3.3
Salluit	1,241	1,072	15.8
Tasiujaq	248	228	8.8
Umiujaq	390	348	12.1
Quebec	7,546,131	7,237,479	4.3

Source: Statistics Canada, 2006 Census of Canada, March 3, 2009

Despite a reduction in crowding, more than one third of Inuit Nunaat (from Canada) are living in overcrowded conditions (table 2). But Nunavimmiut are the ones who experience the worst overcrowded situation among Inuit, with 49%, compared to 39% in Nunavut, 19% for the Inuvialuit region and 13% in Nunatsiavut. It is worth noting that Nunavik is the only Inuit region where the crowding situation has deteriorated from 1996 to 2006. According to the Aboriginal People Survey (APS, 2006), 40% of young Inuit aged 14 and under live in crowded homes. This is more than 6 times the proportion of 6% for non-Aboriginal children.

Table 2: Percentage of the Inuit and non-Aboriginal populations living in crowded dwellings, Canada and regions, 1996 and 2006

Regions	Inuit population		Non-Aboriginal population	
	1996	2006	1996	2006
	Percentage living in crowded dwellings			
Canada	36	31	3	3
Total - Inuit Nunaat	43	38	6	5
Nunatsiavut	37	13	12	0
Nunavik	47	49	6	7
Nunavut	43	39	5	5
Inuvialuit region	31	19	6	4
Total - Outside Inuit Nunaat	6	5	3	3

Sources: Statistics Canada, censuses of population, 1996 and 2006.

On top of that, Nunavimmiut are the ones reporting the largest proportion of dwellings in need of major repairs among all the Inuit (table 3). The situation is worse than 10 years before for three Inuit regions out of four. Again Nunavik is experiencing the worse situation, with almost half the dwellings requiring major repairs.

Table 3: **Percentage of Inuit and non-Aboriginal populations living in dwellings in need of major repairs, Canada and regions, 1996 and 2006**

Regions	Inuit population		Non-Aboriginal population	
	1996	2006	1996	2006
	Percentage living in dwellings in need of major repairs ¹			
Canada	19	28	8	7
Total - Inuit Nunaat	19	31	16	14
Nunatsiavut	41	34	23	16
Nunavik	8	46	12	16
Nunavut	21	26	17	13
Inuvialuit region	23	28	15	16
Total - Outside Inuit Nunaat	17	15	8	7

Sources: Statistics Canada, censuses of population, 1996 and 2006.

Tables 4 to 7 show the pattern (type and size) of households in Nunavik. One third (33.2%) of all the households are of the multifamily type (more than one family living in the household on a permanent basis), when nearly 26% of the households have six members or more. These figures are many times higher than those for Quebec. It is also worth mentioning that some municipalities are experiencing even more difficult situations. For example, Kuujjuarapik has close to half its households of the multifamily type (47.4%), when Ivujivik has almost half its households (46.2%) that are occupied by 6 people or more. In fact, the average number of persons per household in Nunavik has practically not changed from 1996 (4.2) to 2006 (4.1). But again, some communities have much higher figures (5.8 for Ivujivik). On 14 municipalities, seven have experienced a deterioration in the average number of persons per dwelling (table 6).

Table 4: Private households by type, Nord-du-Québec administrative region, 2006 (%)

Nunavik and municipalities	Total private households	Family households			Non-family households		
		Total	One-family	Multiple-families	Total	1 person only	2 persons and over
Nunavik	100.0	93.8	60.2	33.2	6.0	4.5	0.9
Municipalities							
Akulivik	100.0	96.1	53.9	43.1	3.9	0.0	0.0
Aupaluk	100.0	85.7	54.3	34.3	14.3	8.6	0.0
Inukjuak	100.0	94.7	55.4	38.9	5.3	2.8	2.5
Ivujivik	100.0	97.1	54.3	44.3	0.0	0.0	0.0
Kangiqsualujuaq	100.0	95.9	68.0	27.9	3.4	2.0	0.0
Kangiqsujaq	100.0	96.7	59.5	36.4	4.1	3.3	0.0
Kangirsuk	100.0	96.8	68.8	26.9	4.3	3.2	0.0
Kuujuaq	100.0	88.9	71.9	17.0	11.1	9.2	1.9
Kuujuarapik	100.0	87.7	40.4	47.4	12.3	8.8	3.5
Puvirnituq	100.0	96.9	54.7	42.2	2.8	2.8	0.0
Quaqtaq	100.0	92.1	69.8	22.2	6.3	6.3	0.0
Salluit	100.0	96.0	53.2	42.7	3.6	2.8	0.0
Tasiujaq	100.0	94.0	80.0	0.0	6.0	6.0	0.0
Umiujaq	100.0	94.9	57.7	35.9	5.1	3.8	0.0
Quebec	100.0	83.4	76.8	6.6	16.6	13.3	3.3

Source: Statistics Canada, 2006 Census of Canada, May 4, 2009

Table 5: Private households by number of occupants, Nunavik, 2006 (%)

Nunavik and municipalities	1 person	2 persons	3 persons	4 persons	5 persons	6 persons or more
Nunavik	18.7	12.7	12.1	14.3	15.8	25.8
Municipalities						
Akulivik	9.5	9.5	14.3	9.5	19.0	38.1
Aupaluk	33.3	0.0	22.2	0.0	0.0	33.3
Inukjuak	12.1	13.6	15.2	16.7	15.2	27.3
Ivujivik	15.4	0.0	0.0	0.0	23.1	46.2
Kangiqsualujuaq	9.4	9.4	12.5	21.9	21.9	31.3
Kangiqsujuaq	14.3	14.3	10.7	14.3	14.3	32.1
Kangirsuk	13.0	17.4	13.0	21.7	17.4	17.4
Kuujuuaq	27.9	20.0	13.6	15.0	11.4	11.4
Kuujuarapik	30.3	15.2	9.1	15.2	15.2	18.2
Puvirnituq	13.8	5.2	12.1	12.1	19.0	37.9
Quaqtaq	18.8	0.0	12.5	12.5	18.8	25.0
Salluit	14.0	8.0	10.0	12.0	18.0	38.0
Tasiujaq	25.0	16.7	0.0	16.7	25.0	25.0
Umiujaq	11.1	11.1	11.1	11.1	16.7	33.3
Quebec		30.7	34.4	15.5	13.1	4.5

Source: Statistics Canada, 2006 Census of Canada, May 4, 2009

Table 6: Average number of persons per private household by community, Nunavik, 2006

Nunavik and region	Total (n)	Average number of persons per household
Nunavik	2,595	4.1
Municipalities		
Akulivik	105	5.1
Aupaluk	45	3.4
Inukjuak	330	4.3
Ivujivik	65	5.8
Kangiqsualujuaq	160	4.6
Kangiqsujaq	140	4.3
Kangirsuk	115	4.0
Kuujuuaq	700	3.0
Kuujuarapik	165	3.5
Puvirnituq	290	5.0
Quaqtaq	80	3.9
Salluit	250	4.8
Tasiujaq	60	3.8
Umiujaq	90	4.5
Quebec	3,189,340	2.3

Source: Statistics Canada, 2006 Census of Canada, May 4, 2009

Table 7: Persons per dwelling per community, Nunavik, 1996-2006

Year	Average	Akutivik	Aupaluk	Inukjuak	Ivujvik	Kangiqsualluqjaq	Kangiqsuqjaq	Kangirsuk	Kuujuuaq	Kuujuarapik	Puvimtuq	Quaqtaq	Salhit	Tasiujaq	Umiujaq
2005	4,8	4,9	4,1	4,8	4,7	4,8	5,0	4,5	4,3	3,7	5,2	5,0	5,5	4,7	4,9
2004	4,8	5,2	4,0	4,6	4,5	5,2	5,0	4,5	4,6	3,7	5,1	4,9	5,4	4,5	4,9
2003	4,8	5,0	4,1	4,7	4,7	5,2	4,8	4,8	4,6	3,8	4,9	4,9	5,3	4,7	4,7
2002	4,8	5,1	4,1	4,7	4,8	5,0	4,7	4,8	4,9	3,6	5,1	4,9	5,4	4,8	4,9
2001	4,9	4,9	3,9	4,5	4,5	5,4	5,1	4,6	4,9	3,6	5,4	4,9	5,4	5,6	4,7
2000	4,9	5,3	3,8	4,5	4,6	5,4	5,1	4,9	5,1	3,5	5,3	4,5	5,1	5,2	4,9
1999	4,9	4,7	3,9	4,9	4,8	5,6	5,0	4,8	4,9	3,7	5,5	5,0	5,1	5,0	4,8
1998	4,9	4,7	4,9	4,9	4,8	5,5	4,9	4,6	5,0	3,7	5,3	4,6	5,5	5,3	4,2
1997	4,8	4,3	4,7	4,7	4,9	5,4	4,7	4,7	4,9	3,8	5,3	4,6	5,4	5,4	3,9
1996	4,7	4,5	4,2	4,6	4,7	5,2	4,6	4,6	4,6	3,9	5,2	4,2	5,4	5,3	3,9

Source: Table adapted from Resident population: Register of Agreement Beneficiaries (1978-2005)

The rate of population growth is not about to decrease, considering that approximately half the population is under twenty years of age. It means that the demand for new housing will not decrease with these young couples who will want to start their own families. According to a 2008 survey, the needs for new housing units have increased from 533 in 2003 to more than 900 in 2008, despite the construction of 239 units over that period. Obviously there is a need to speed up the construction rate of new units.

IMPACT OF HOUSING AND OVERCROWDING ON HEALTH

Good health may be defined as the physical, mental and social well-being of individuals, and all of these elements must be taken into consideration when examining the impacts of housing and overcrowding on health.

Although the specific impact of housing on health is difficult to quantify, a review of international medical literature clearly reveals that overcrowded housing is a major risk factor for health. There is a very wide variety of health problems that may be caused by poor housing conditions, from psychological

and physiological effects to specific diseases that vary in their associated degrees of morbidity.

Among the afflictions most closely tied to housing conditions are several infectious diseases. Numerous studies have demonstrated that overcrowded housing is associated with a long list of contagious diseases: respiratory tract infections (including pandemic influenza), skin infections (impetigo, scabies, etc.), eye infections, tuberculosis, meningitis, measles, etc. In populations that already suffer high rates of tuberculosis, crowded housing and poor ventilation increase the risk of transmission and progression of disease among those who share living space. Hospital admission rates for intestinal, skin and ear infections are related to overcrowding.

Other studies have demonstrated that the number of persons sharing the same dwelling is an indicator for repetitive respiratory infections. Overcrowding is associated with bronchopneumonia and mortality due to respiratory problems among children under one year of age.

As the quality of indoor air is influenced by, among other things, the size of the dwelling in relation to the number of individuals sharing it, the observation that overcrowding is associated with certain chronic conditions such as asthma is not surprising.

But, even more alarming than the concern for the risk of overcrowding to individuals' physical health, there is the threat to the population's mental health. Certain studies suggest that overcrowding, as a chronic source of stress, constitutes a major risk to individual and community psychological well-being. The individual requires a certain level of privacy at home. Although overcrowding is but one factor contributing to stress within families and groups of persons, its importance cannot be neglected. Overcrowding, lack of privacy and personal space, and the impossibility of access to other housing options may push a tense family situation toward deterioration.

As overcrowding contributes to interpersonal conflicts within the family and community, the housing situation may be related to elevated suicide and violence rates.

EFFECTS ON THE NUNAVIK POPULATION'S HEALTH

Overcrowding reinforces the propagation of several infectious diseases, particularly those transmitted through the respiratory tract and through direct

contact. Most often, these diseases constitute a greater risk for children and the elderly.

Through its means of transmission, tuberculosis represents one of the diseases most closely associated with overcrowded housing. In fact, family contacts of an active, contagious case of tuberculosis are always considered at high risk of infection. While we may take comfort in the clear reduction in the incidence of tuberculosis in Nunavik over the past several decades, we still have quite a bit of ground to cover. In fact, in 1997, the incidence rate of active tuberculosis among the Nunavik population was more than 10 times that for Quebec or Canada. Since the last few years, the region is experimenting an increase in the incidence of active tuberculosis. Overcrowded housing can only facilitate continued transmission of tuberculosis, with the negative impacts this infection involves, particularly among youth and children. The situation is so concerning that a lung specialist who is treating most of the region's tuberculosis cases requested that a research be made on the indoor air quality in Nunavik.

Rheumatic cardiac diseases are not subject to mandatory reporting, which makes it difficult to determine their frequency. However, in the opinion of the cardiologist who serves as consultant for the region, these diseases are probably at least 50 times more frequent in Nunavik than in the south. These diseases result from a streptococcus infection. A new system for monitoring invasive streptococcus infections, in use in Quebec for the last few years, demonstrates that Nunavik's incidence rate for these infections is the highest among all the regions in Quebec. These elevated rates will continue with the situation of overcrowded housing, because this infection is facilitated by close contact.

Through their connection with overcrowding, respiratory diseases may contribute to rising infant mortality. In Nunavik, the infant mortality rate (i.e., deaths among infants under one year) is 25 per 1,000 live births, five times that of Quebec. A large proportion of those deaths are from respiratory causes.

Chronic otitis, a major health problem in Nunavik, may be caused by various infective agents. During the 1997 evaluation of the Hearing and Otitis program in one of the Nunavik communities, the data revealed that the risk of chronic otitis among children increases when several children share the same bedroom.

Invasive *Haemophilus influenzae* infections are primarily transmitted through the respiratory tract and may cause very serious diseases such as meningitis and epiglottitis, which mainly affect young children. Quite a few years ago now, these diseases particularly affected the Inuit populations, including that of Nunavik. There is good reason to believe that housing conditions contributed to

this elevated incidence. Fortunately, the discovery of a very effective vaccine against this disease helped considerably in reducing the number of cases.

Other health problems of an infective nature and whose propagation is facilitated by overcrowding are more difficult to document because they are not reported. Some examples are gastro-enteritis, skin conditions such as impetigo and scabies, and upper respiratory tract infections. Although the medical literature mentions a higher rate of hospitalization for infections related to poor housing conditions and overcrowding, we should keep in mind that in Nunavik, due to limited accessibility, hospitalization is used only as a last resort.

We may conclude by stating that housing conditions in Nunavik, where several persons, including young children, live in close contact, can but amplify the risks of transmission and outbreaks of diseases caused by those agents.

The impact of overcrowding on the occurrence of psychosocial problems in Nunavik is more difficult to quantify than that of physical health problems. In spite of this, the consequences, which are often more serious, merit our consideration when assessing the impact of overcrowding.

One indicator of psychosocial distress is the suicide rate. For many years now, the suicide rate among Nunavik youths has been approximately 20 times higher than that among Quebec youths. This, in reality, is but the tip of the iceberg, as the number of completed suicides constitutes only a fraction of the total number of suicide attempts.

Other psychosocial problems that may be related to overcrowding are family violence and sexual abuse. Concerning family violence, overcrowding, which entails a lack of privacy, in combination with the absence of appropriate alternatives, may aggravate the stress on family members and provoke explosive situations. It is also very difficult for women victims of violence to find alternative lodging.

Overcrowding and the presence of more than one family in the same dwelling can, in certain cases, contribute to incidents of sexual abuse. Likewise, the lack of available housing may make it difficult to apply certain solutions to this problem in the communities. Once again, even though the data is difficult to come by, the evidence demonstrates that this problem is very prevalent in Nunavik.

According to the psychosocial workers interviewed, the housing problem contributes much to the elevated prevalence of certain problems in Nunavik, as much in terms of creating problems as in applying solutions. The lack of housing

further complicates assumption of responsibility for certain cases of mental illness. When the patient's family requires a certain period of respite, the absence of housing alternatives in several communities may lead to placing the individual in another community, which turns out to be costly yet not very effective. And in cases of family violence, responsibility for the victims and the aggressors becomes more complicated because of the lack of housing alternatives.

More subtly, the impact of lack of housing on youth psychosocial well-being may result from limited access to employment. In fact, due to the lack of available housing, certain employers will advertise positions only locally, to the residents of the locality concerned. The result is that qualified candidates from other communities will be unable to apply.

Also stress on young people can result from the fact that they cannot have their own homes despite being 20 or 25 years old and having kids of their own.

CONCLUSION

As previously mentioned, the direct relationship between housing or overcrowding and certain specific physical and psychosocial health problems is not always easy to establish. In some cases, the logical link between overcrowding and the health problem is what stands out.

Nevertheless, it is pertinent to ask questions on the impact of housing conditions on the Nunavik population's health when several health indicators point in the same direction. Although the relationship between certain psychosocial problems and overcrowding may be more difficult to prove than that between physical health problems (such as certain infectious diseases) and overcrowding, we believe these links must be considered.

From the point of view of public health, the problems of housing and overcrowding in Nunavik constitute a major risk factor for the population's physical and psychosocial health. If no concrete measures are taken in the very near future to deal with this issue, we will no doubt witness a rapid deterioration of the situation. In fact, due to projected demographic growth, there will be about 1200 more persons in Nunavik within the next five years, i.e. almost one more person per dwelling. With the lack of a program to increase access to housing (including construction of several new units), we may expect, within

five years, that around 40% of dwellings in Nunavik will be overcrowded. And that entails serious risks for the population's health.

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