



# Pot and Driving in the North

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### **Key Informants**

Inuit and Qallunaat (non-Inuit) key informants from across Canada's North

### **A Northern Community**

An Inuit community in Nunavik, Northern Québec

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# Pot and Driving in the North

## Introduction

In November 2005, the Canadian Public Health Association (CPHA) launched a Pot and Driving Campaign to inform Canadians 14 to 18 years of age of the risks of pot-impaired driving.<sup>1</sup> Many young Canadians who use pot see it as a mild, mainstream drug. While most young drivers and passengers believe that alcohol-impaired driving is dangerous and socially unacceptable, they commonly regard using pot and then driving as risk free. Recent research on pot shows that it can have a negative impact on driving, especially when combined with driver inexperience and difficult road conditions.<sup>1</sup> Road accidents are often the result of a combination of factors and pot can be one of them.

In 2006, the campaign took on a northern focus. There are several reasons for this. Drug surveys show that pot use is more and more common across the North and, as in the rest of Canada, rates are highest for the 14-24 age group.<sup>2</sup> Youth make up a larger part of the population in the North than they do anywhere else in Canada.<sup>3</sup> Most residents of the North, and especially youth, depend primarily on snowmobiles and ATVs (Hondas) to get around in their communities and out on the land. Serious injury rates are high in the North compared to other regions in Canada and many injuries and fatalities involve snowmobiles and ATVs.<sup>4</sup> Many studies have found that children and youth are more likely than older drivers to suffer serious injuries when using these types of vehicles.<sup>5</sup> Drinking and driving as well as speeding and other bylaw offenses are blamed for many crashes in northern communities, but pot is not something people talk about as a risk for driving.

## A Partnership for a New Campaign

In January 2006, CPHA partnered with the National Aboriginal Health Organization's (NAHO) Ajunnginiq (Inuit) Centre for a three-month project focused on pot and driving in the North. The project team included a project coordinator and researcher at CPHA, two policy analysts at the Ajunnginiq Centre, and an Inuit researcher, translator and interpreter contracted by NAHO to work on the project. One of the NAHO policy analysts was on the Advisory Committee that shaped the national campaign and therefore brought both a national and northern perspective to this work.

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<sup>1</sup> In the campaign, the word 'pot' was used and refers to any drug that is made from cannabis, including marijuana, hashish and hash oil.

## Research

Research was undertaken on drug use and vehicle injury and safety in Aboriginal, northern, remote and circumpolar communities. This was followed by a review of newspaper articles from the Internet archives of northern news services and telephone interviews with 20 “key informants”.

## Studies

While studies done in Canada, the United States (Alaska) and other northern countries including Norway and Sweden have found that many snowmobile and ATV injuries and deaths involve drivers who are impaired by alcohol,<sup>6</sup> little is known about the role of pot and other drugs in off-road vehicle use and safety. A 2000 injury study involving interviews with 150 residents in 14 communities across the Northwest Territories found that the role of alcohol as a cause of serious injuries and deaths is well known in the North.<sup>7</sup> A 2005 Transport Quebec report of off-road vehicle use and safety in northern Quebec concluded that “careless driving, excessive speed and impaired driving” are the most commonly reported factors in collisions and that alcohol-impaired driving “is more important in Nord-du-Québec (Nunavik) than in Abitibi-Témiscamingue or in Québec as a whole.”<sup>8</sup> Snowmobile injuries and deaths can occur because snowmobiles crash into each other, hit mounds of snow and unseen obstacles, or go through the ice on lakes or rivers. The studies also found that most serious injuries or deaths involve male drivers or passengers who are not wearing helmets.<sup>9</sup> Other risk factors for serious injuries are age (driving under the age of sixteen) and driver inexperience. Several studies said that greater safety awareness and driver training are needed and that it is difficult to enforce safety standards for these types of vehicles since many drivers use unmarked and mostly unsupervised trails or drive on farmland.

ATV studies also report on the low rate of helmet use and the young age of many drivers and passengers who are seriously injured or killed in crashes. Several studies said that adult-sized ATVs are not designed for young drivers who do not have the body weight and the strength to fully control the vehicle.<sup>10</sup> In an ATV ‘rollover’, the size and weight of the vehicle pressing down on the driver can cause serious injuries and sometimes death for young drivers.<sup>11</sup> Almost all of the ATVs used by youth and children in the North are adult-sized.

One Canadian ATV study found it was more difficult for the driver to use his or her body to keep the vehicle stable while driving with a passenger and that the difficulty increases with each additional passenger.<sup>12</sup> Also, since the tires of an ATV are designed for gravel and dirt trails, using them on paved roads reduces their stability while allowing for faster acceleration, which is not recommended for these types of vehicles. A 2001 Manitoba safety program found that youth “associate certain types of riding with a low risk of injury, such as short trips and riding on their own property, whereas this is the typical injury scenario in Manitoba.”<sup>13</sup>

## News Stories

Internet articles published in the past few years by the *Nunatsiaq News*, *Northern News*, *CBC News North* and *The Labradorian* on youth, vehicle crashes and safety concerns in northern communities were reviewed. Bylaw enforcement, drug dealing and drug arrests, and stories about the effect of drugs and alcohol on people living in communities across the North were also examined.<sup>14</sup> Several stories reported that vehicle crashes appear to have increased in recent years, especially ones that involve ATVs. One of the *Nunatsiaq News*' top ten stories for 2005 was on ATV collisions: "Horrific accidents involving all-terrain vehicles took place in Nunavik last summer, every week, at all hours of the day, in each community, causing serious injuries and death."<sup>15</sup>

Most stories on crashes said that alcohol was either suspected or confirmed as a factor in the crash.<sup>16</sup> Local police often commented that the crash could have been prevented if drivers had obeyed safety bylaws and did not drink alcohol before driving. The role of drugs in collisions was only mentioned in an August 2005 story in the *Northern News Services* that said that "speed and [pot]...were important factors" in a fatal snowmobile collision that occurred in Yellowknife earlier in the year.<sup>17</sup> While young people were reported to be involved in crashes, another Yellowknife story said the community did not regard teenagers as the age group of greatest concern with regards to causing vehicle crashes.

On the one hand, stories spoke of the need for communities to adapt to new conditions as they grow in size and population. Others, however, said that driving a snowmobile is "an integral part of living in the North"<sup>18</sup> and bylaws that are good for the South should not be imposed on residents in the North. Permitting snowmobiles to go anywhere in the community, they said, shows respect for people involved in traditional activities that require the use of these vehicles.<sup>19</sup> Several stories mentioned the gap between generally accepted driving practices—including the early age of driving (as young as 9 or 10 years) and taking passengers on ATVs—and community bylaws. A November 2004 story described the reaction of teens in Yellowknife to a recommendation by the Canadian Paediatric Society that the driving age for snowmobiles be raised to 16 years: "There's not much to do in Yellowknife already," said a 15-year-old driver, "so why take away more?"<sup>20</sup>

## Telephone Interviews

Twenty telephone interviews were conducted with key informants<sup>2</sup> who represented the Inuit regions of Inuvialuit, Nunavut, Nunavik and Nunatsiavut. They included a mix of Inuit and Qallunaat (non-Inuit) living in both large and small communities. Care was taken to arrange interviews with people working in several job categories relevant to the campaign, including health, law and bylaw enforcement, education and youth services, addictions and corrections, municipal politics and hunting.<sup>21</sup> Interviews were conducted in both English and Inuktitut.

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<sup>2</sup> Key informants were individuals who lived and worked in the North and had knowledge and experience relevant to the research.

Speeding, reckless driving and alcohol impairment—often in combination with each other—were seen by informants as the greatest risks for driving. Some said they were not aware of people driving while high on pot, while others said they suspected it was a common practice and there is a need to inform people in the community that pot can increase driving risks, especially when mixed with alcohol.

Some informants said there was an increase in the number of cars, trucks, ATVs and snowmobiles in their community in recent years. Not surprisingly, collisions that occur in northern communities often involve different kinds of vehicles as well as pedestrians. Some informants said they were worried about their own safety when walking in their community, especially at night. Informants reported that bylaws requiring helmets, vehicle registration, or a limit to the number of passengers allowed on a vehicle are not widely followed.

Informants living in some of the larger communities such as Iqaluit and Kuujuaq said that while youth sometimes drive cars and trucks, they usually drive ATVs and snowmobiles. They said that three or four youth often get together on snowmobiles or ATVs. They explained that it is common to see drivers as young as 9 or 10 years driving or getting rides on snowmobiles and ATVs in their communities.

Some key informants pointed to a lack of resources available for bylaw enforcement, while others suggested that many residents believe that bylaws are not suited to the North because they are planned with southern realities in mind, repeating opinions expressed in northern news articles. For example, key informants pointed out that it is difficult to wear helmets while riding a snowmobile in the very cold Arctic climate. Others mentioned that mothers carry young children in *amautis* (woman's parka with pouch) while riding a snowmobile or an ATV. They said that although this might be seen as a dangerous practice, mothers often have no other way of transporting their young children since road vehicles with car seats are rare, especially in smaller communities.

## **Community Consultations**

The final stage of the research involved a four-day visit to a Nunavik community on Hudson Bay in early February 2006. Like most other communities in the North, this one is accessible only by plane. The CPHA and Inuit researchers were welcomed by community leaders and met with the principal and staff of the local high school to discuss arrangements for the youth discussion groups. An Inuktitut interpreter from the community was hired to assist the CPHA researcher in the Inuktitut discussion. Over the four-day visit, two discussion groups were held with high school students 14 to 18 years of age along with a discussion group with adult residents of the community. An FM radio call-in show gave residents the opportunity to express their views on the issue of pot and driving as well as the more general subject of how drugs and alcohol are affecting the community.

## Youth Discussion Groups

The “pot smoking pilots” poster that was used in the national campaign was a useful tool for getting the discussion going with high school students for it encouraged laughter, jokes and stories. Participants responded to the poster with comments that were similar to those made by southern youth who participated in discussion groups for the 2005 national campaign. For example, some participants said they would not want to get in the plane with the pilots because they might crash. Several participants thought the poster was good at communicating the campaign message that driving high can have real consequences for drivers and passengers, although all participants said they did not think pot was a real danger for drivers or their passengers. This view was also expressed in the discussion groups held in the South.

After discussing the campaign poster, participants were asked to give feedback on the ‘10 Questions’ designed for the 2005 campaign to facilitate thinking and discussion on pot and driving.<sup>22</sup> Although some participants made comments on the ‘10 Questions’, particularly in reference to the second question (‘play’), they were more interested in talking about their life experiences and asking about the researchers’ habits and experiences with drugs and alcohol than in evaluating the ‘10 Questions’. When participants were asked if anyone could describe what it was like to be high on pot, most laughed at the question, as if there was no reason to describe the effect of something that everyone had already experienced.

One youth, comparing pot to alcohol, said, “Why worry about pot when it doesn’t make people crazy?” Several participants said that gas sniffing is a much more serious problem in the community than pot smoking. One commented that pot can’t be that harmful “because you can’t overdose on pot”, an understandable comment since a number of youth living in northern, Inuit communities have died in recent years as a result of “Sudden Sniffing Death Syndrome” caused by gas sniffing.<sup>23</sup>

Participants agreed that while they tried to avoid drinking and driving or being a passenger with a driver who had been drinking, the general sense that pot is relatively harmless extends to driving high. This opinion is similar to that expressed by youth in focus groups conducted in the South.

## Adult Discussion Group

On the second full day of the community visit, researchers met with a group of adults, including the hamlet mayor, other community leaders, a youth worker and parents. Participants in the group generally agreed that there is a need to educate youth about drugs, although some also said that it is not easy to convince everyone in the community that talking openly about drug use is the right approach. One participant emphasized the importance of “looking at the whole picture”, of taking the history of each community into consideration, particularly in terms of the arrival of different substances and commodities from the South since the 1920s. Alcohol has a history in the community and people are

very conscious of its negative effects. On the other hand, pot use is much more recent and its effects on the community appear to be less drastic.

The group discussed the campaign poster and '10 Questions' handout. A member of the adult discussion group commented that the 10 Questions were "valid but oriented toward the South." Others commented that the poster was creative and that it could apply to the North because flying is the only way to get in and out of the community for most of the year. As in the youth discussion groups, pot was seen by the adult group as a relatively harmless drug compared to alcohol in terms of its effects on individuals and the community. When pot use was talked about as a problem, it was in relation to its potential to cause respiratory and financial problems.

### **FM Radio Call-in Show**

During planning of the community visit, the project team decided to conduct an FM radio call-in show as a way of informing the community about the project and giving residents an opportunity to discuss pot and driving and related issues. This decision was based on NAHO's experience with communications in the North and recommendations of key informants. The call-in show was held during the popular lunch-hour time slot at the local community FM station. Callers showed a general tolerance for pot use, but not for dealing.<sup>24</sup> Dealing is seen in a very negative light because money flows out of communities to producers and dealers in urban centers such as Montreal and Vancouver. Callers said police seem helpless in stopping drugs from being brought into the community, especially pot.

One Nunavik elder was particularly concerned about youth and other people driving high out on the land. He said that many people in the community go out camping when they are high on pot and sometimes get lost. He pointed to the lack of communication between people who use and don't use drugs in the community, saying "People don't talk about a relative who takes drugs and gets lost. You don't want to say it could have been prevented when people have lost a relative." Several callers said they find it very hard to speak out about problems in a tight-knit community where everyone knows everyone else and family networks can be very large. Some asked to speak privately with the researchers about their concerns with drug use and especially alcohol abuse.

### **The Northern Campaign**

The northern campaign was finalized once the research activities were completed. There were limitations in terms of time and resources for developing and implementing the northern campaign. The start-point was the Pot and Driving website ([www.potanddriving.cpha.ca](http://www.potanddriving.cpha.ca)) and resource materials that were developed primarily with a southern audience in mind. The website was translated into Inuktitut, which was a challenge because of the idiosyncrasies of the Nunacom font (for example, the text did not always display properly in various software applications).



The research that was undertaken informed the development of new materials including a public service announcement for use on community and regional radio, which is one of the most effective means of communication in the North.

### **Pot and Driving PSA Text**

*“Some drugs affect your ability to drive. Marijuana (or pot) is one of them. Marijuana can make a driver focus too much on some things and ignore others, like a person walking across the road or a snowmobile appearing fast out of nowhere. If you smoke grass and take control of a snowmobile, a Honda, or maybe a car or a truck, you have a greater chance of being injured or injuring someone in your community.”*

*“Getting high and using a snowmobile or a Honda outside of town or out on the land is also risky. When you’re driving high, you might not notice thin ice under your snowmobile or a rock or mound of snow that could flip your Honda. When you’re in your community or out on the land, it doesn’t make sense to drink alcohol and drive. Driving when you’re high doesn’t make sense either. To find out more about driving high visit [www.potanddriving.cpha.ca](http://www.potanddriving.cpha.ca).”*

The community that informed the campaign asked that a plain language Fact Sheet be developed that would include some information on the health impacts of pot. A Learning Activity Unit (for use with youth) was developed to enhance the ‘10 Questions’ promoted in the national campaign. This information package was developed by a school teacher (in conjunction with CPHA and NAHO) who had taught in Inuit communities. It was based on the information provided on the pot and driving website ([www.potanddriving.cpha.ca](http://www.potanddriving.cpha.ca)), on findings from research on pot and driving in the North and on the teacher’s professional experience teaching in the North.

Campaign materials were produced in English and Inuktitut (except the Learning Activity Unit which was produced in English only) and sent to high schools and youth centres in 52 Inuit communities. Schools and youth centres in Labrador and the Inuvialuit region of the Northwest Territories and the community of Kugluktuk, Nunavut received English packages as residents in these regions do not read syllabics.

The package included:

- a cover letter by the CPHA and NAHO partners that said, “Whether your community views pot and driving as a priority problem or not, the materials enclosed are sure to promote some good discussion and learning about marijuana and other related issues”;
- a Pot and Driving Fact Sheet;
- a Pot and Driving Learning Activity Unit for high school teachers and youth coordinators;
- four “pot smoking pilots” campaign posters in English;
- four campaign posters with space for inserting Inuktitut dialects;
- a Pot and Driving Public Service Announcement for use on community and regional radio.

In addition to the mailing of resources to schools and youth centres, a press release on the campaign was sent to the *Nunatsiaq News*, *Inuvik Drum*, *The Labradorian* and *News North*, as well as the Northern Radio Service of the CBC.

## **Conclusion and Lessons Learned**

While recent research has confirmed that driving high on pot increases the risk of being involved in a vehicle collision, researchers have also found that Canadians 14 to 18 years of age believe that driving a vehicle while under the influence of pot is a risk-free activity. Both these findings provided the motive for the 2005 Pot and Driving Campaign as well as for this project. Additional circumstances in the North such as the low rate of helmet use and other challenges facing bylaw enforcement also suggested the need for a northern campaign.

Although the specific goal of the project was to research and raise awareness about pot and driving in the North, the collaborative team learned a great deal that may be applied to future public health and safety projects involving northern communities.

### **Consulting northern communities**

While there is evidence that the impact of pot on vehicle safety, individual and community finances and human health is a concern for northern residents, alcohol is viewed as a much more serious problem because of its destructive effect on individuals and families, with vehicle collisions being only one of several problems linked to alcohol. This suggests the need to consult communities when developing initiatives for a northern audience so that local priorities and local needs may be addressed at the outset. Momentum gained from initiatives that focus on community priorities can provide an excellent basis for projects that introduce new public health and safety issues and concerns.

Learnings should be shared over the course of the project allowing for two-way feedback between communities and researchers. When research is completed, relevant information should be provided to communities so that they are informed and ultimately benefit from the project undertaken. For this reason, the project team produced a number of materials that were not initially planned in response to recommendations by northern key informants and members of the community consulted for this project.

### **Adequate time and resources**

This was a very ambitious undertaking. Without the knowledge, networks, and commitment of the NAHO staff it would not have been possible to accomplish the project within three months. NAHO was also able to inform CPHA on protocols and procedures for working in the North. The ability of the team to complete the project also depended heavily on many individuals living and working in the North who were willing to assist the project team on short notice.

Project time lines must be in tune with northern realities, such as planning for severe weather conditions and communication difficulties that are a part of northern life. For this project, additional time and resources would have been preferred to establish relationships, pilot the new resources, implement the campaign, and evaluate its impact on the intended northern audience.

### **Assisting communities**

On the one hand, there is a need to build on and strengthen existing social, cultural and educational supports already available to youth in the North. On the other hand, residents in the small community visited by the research team indicated that it is difficult to talk openly about issues relating to drugs and alcohol. There is strong evidence to suggest that northern communities such as the one that participated in this project are looking for assistance from outside organizations that carefully consider local realities, local norms and local points of view—including those of youth, women and elders—when developing programs in response to issues of concern to residents of the North.

### **Building communication and relationships**

The principal of the Nunavik high school where youth discussion groups were held noted that regardless of the specific content of the discussions, participants benefited from the opportunity to speak with adults visiting the community who showed a genuine interest in their points of view and real life experiences. This illustrates the importance of direct, human contact in building lines of communication and relationships of trust with youth living in northern, Inuit communities.

There is growing concern about the safe use of snowmobiles and ATVs, especially among children and youth. Given the widespread use of these vehicles in the North, it may be possible to engage youth living in northern, Inuit communities in the development of a national public awareness campaign on off-road vehicle safety for the rest of Canada. This would provide an opportunity to build on the knowledge acquired and to further develop relationships established as a result of this project.

One elder in the community visited by members of the project team was very anxious to talk about how alcohol and drug use affected his community. At the end of the interview he asked: “Are you going to come here and leave and never come back, or are you going to come back to help our community?” This elder’s words present a challenge and an opportunity. As Ontario Métis, family physician and community health consultant, Dr. Janet Smylie, wrote in a 2005 article entitled ‘The ethics of research involving Canada’s Aboriginal populations’: “I suggest that researchers start by building relationships with one or more First Nations, Métis or Inuit communities. They may be pleasantly surprised by how quickly this approach will provide new insights and perspectives regarding Aboriginal health and medicine more generally.”<sup>25</sup>

## Endnotes

<sup>1</sup> The 2005 Pot and Driving Campaign makes the distinction between cannabis use outside the context of driving and the effects of cannabis use while driving or within a certain period of time before driving. Researchers generally adopt the standard of use “within an hour of driving” when referring to cannabis impairment. See for example ASBRIDGE, M, C Poulin, A Donato. (2005) Motor vehicle collision risk and driving under the influence of cannabis: Evidence from adolescents in Atlantic Canada. *Accident Analysis and Prevention*. November 2005, Vol. 37 Issue 6, 1025-1034.

<sup>2</sup> The 2002 NWT Alcohol and Drug Survey found that 44.7% of 15-24 year olds used marijuana at least once in the last 12 months. The survey found a higher rate among the general population outside regional centers (35.3 %). 2002 NWT Alcohol & Drug Survey (2003): Table 1.4. Profile of Marijuana Use (14). Results from the recently completed Nunavik Health Survey or *Qanuippitaa* will be available sometime in 2006. See [www.qanuippitaa.com/en/who.aspx](http://www.qanuippitaa.com/en/who.aspx).

<sup>3</sup> Inuit communities have the highest proportion of children and youth in Canada. See Statistics Canada Community Profiles: [http://www12.statcan.ca/english/Profil01/CP01/Search/SearchForm\\_Results.cfm?Lang=E](http://www12.statcan.ca/english/Profil01/CP01/Search/SearchForm_Results.cfm?Lang=E). Compared to the general Canadian population, a higher proportion (50%) of First Nations, Métis and Inuit were under the age of 25 according to the 2001 Statistics Canada Census. The same 2001 census found that approximately 18% of Inuit in Canada were between the ages of 15 and 24 and that 39% were under age 15. See the Service Canada Website [www.youth.gc.ca/yoaux.jsp?lang=en&flash=1&ta=1&auxpageid=857#note](http://www.youth.gc.ca/yoaux.jsp?lang=en&flash=1&ta=1&auxpageid=857#note).

<sup>4</sup> The 2001 Health Canada report entitled *Unintentional and Intentional Injury Profile for Aboriginal People in Canada: 1990-1999* identified “frequent use of risky vehicles such as ATVs and snowmobiles” is one of the factors to blame for the high unintentional injury and fatality rates experienced by First Nations, Métis and Inuit people in Canada, with Inuit living in northern communities experiencing the highest rate. (2001:16)

The report is available at [www.hc-sc.gc.ca/fnih-spni/alt\\_formats/fnihb-dgspni/pdf/pubs/injury-bless/2001\\_trauma\\_e.pdf](http://www.hc-sc.gc.ca/fnih-spni/alt_formats/fnihb-dgspni/pdf/pubs/injury-bless/2001_trauma_e.pdf). More recently, a 2004 Northwest Territories Health and Social Services report entitled *Injury in the Northwest Territories: A Summary Report* on injury in the Northwest Territories stated that “Inuit had the highest mortality rate due to injuries sustained in crashes of off-road vehicles such as snowmobiles, ATVs and aircraft,” as well as “the highest injury related hospitalization rate due to these types of incidents.” Report available at [www.hlthss.gov.nt.ca/content/publications/Reports/injury\\_report/InjuryReportsummDec2004.pdf](http://www.hlthss.gov.nt.ca/content/publications/Reports/injury_report/InjuryReportsummDec2004.pdf). See Alex Glancy. Injury deaths high in NWT. *Northern News Services*. Yellowknife. Dec 24/04.

<sup>5</sup> For example, R.A. Shults et al write in a study of all-terrain vehicle-related nonfatal injuries among young riders in the United States between 2001-2003 that because children often lack the physical strength, cognitive abilities, and fine motor skills to operate ATVs properly, their risk for injury is greater. SHULTS, RA, SD Wiles, Vajani, JC Helmkamp. All-terrain vehicle-related nonfatal injuries among young riders: United States, 2001-2003. *Pediatrics*. 2005 Nov;116(5): 608-12.

<sup>6</sup> A 2002 Nova Scotia study found that alcohol was a factor in over half the collisions under review and that many injuries would have been prevented with proper helmet use. See SIBLEY, Aaron K and John M. Tallon. The Sibley article was published in the Canadian Journal of Emergency Medicine. Major injury associated with all-terrain vehicle use in Nova Scotia: a 5-year review. July 2002 4 (4), 263-267. Similar results relating to alcohol impairment were found in a 10-year retrospective review of injury and death in all-terrain vehicle crashes in West Virginia. See CARR, AM, JE Bailes, JC Helmkamp, CL Rosen, VJ Miele. (2004) Neurological injury and death in all-terrain vehicle crashes in West Virginia: a 10-year retrospective review. *Neurosurgery*. 2004 Apr;54(4):861-7. See also HAMDY, CR, Dhir A, Cameron B, Jones H, Fitzgerald GW. Snowmobile injuries in northern Newfoundland and Labrador: an 18-year review. *J Trauma*. 1988 Aug;28(8):1232-7. A November 2005 article reported on the results of a five-year study (1997 to 2002) of a snowmobile injuries prevention program undertaken in Svalbard, Norway, an area with a very high rate of snowmobile injuries. The study found that the program “had limited effect” and concluded that any future efforts should seek to reduce the level of alcohol impairment among snowmobile drivers. See YTTERSTAD, Dahlberg T. A five-year study of snowmobile injuries in Svalbard: does prevention work? *Tidsskr Nor Laegeforen*. 2005 Dec 1;125(23):3252-5. See also BJOPRNSTIG, U. Accidents in the north. Some aspects on snowmobile accidents and moose-car collisions. *Arctic Med Res*. 1992;51 Suppl 7:56-8. PIERZ, Joseph J. Snowmobile Injuries in North America. *Orthopaedics and Related Research*. April 2003, Vol. 1 Issue 409, 29-36.

<sup>7</sup> GRINDLAY, M and P. Sutcliffe. (2000). *Injuries in the NWT: Predictable and Preventable*. Health Promotion & Protection Office, Stanton Regional Health Board. Yellowknife.

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<sup>8</sup> Overview of Safety in the Use of Off-Road Vehicles (OFVs) in Nord-du-Québec. *Transportation Plan of Nord-du-Québec*. Working Paper, Transports Québec, August 2005.

<sup>9</sup> A 5-year review of major injury associated with all-terrain vehicle use in Nova Scotia found that the majority of accidents involved males, and that only a small fraction were wearing helmets. SIBLEY, Aaron K., John M. Tallon. Major injury associated with all-terrain vehicle use in Nova Scotia: a 5-year review. July 2002 4 (4), 263-267.

<sup>10</sup> See [www.atv-youth.org/uploadedFiles/IntroductionPlanningGuide.pdf](http://www.atv-youth.org/uploadedFiles/IntroductionPlanningGuide.pdf)

<sup>11</sup> Grindlay and Sutcliffe (2000) noted specific risks associated with off-road vehicles, stating: "ATVs tend to roll over easily due to their high center of gravity while snowmobiles present risks due to their use over unsafe ice conditions and their lower maneuverability, particularly for young children." GRINDLAY, M. and P. Sutcliffe. (2000). *Injuries in the NWT: Predictable and Preventable*. Health Promotion & Protection Office, Stanton Regional Health Board. Yellowknife.

<sup>12</sup> FALAH, Boumédiène. Comportement dynamique de véhicules tout-terrain (quad) en présence d'un second passager. Université du Québec à Rimouski, Département de Mathématiques, d'informatique et de génie. Ministère des Transports du Québec, Direction de la sécurité en transport. Septembre 2003. Accessed January 12, 2006. <http://www.mtq.gouv.qc.ca/fr/publications/securite/vhr/vtt.pdf>

<sup>13</sup> Manitoba Off-road Vehicle Injury Prevention Program: A Pilot Project to Develop and Implement a Regional Model. Final Report to the Manitoba Neurotrauma Initiative. Submitted by IMPACT, the injury prevention centre of Children's Hospital. Winnipeg, Manitoba. May 2001. Available at [www.hsc.mb.ca/impact/orv\\_report.htm](http://www.hsc.mb.ca/impact/orv_report.htm).

<sup>14</sup> The *Nunatsiaq News* serves the Nunavut and Nunavik regions; the *Northern News* serves the Northwest Territories; *CBC News North* covers all of the North; and *The Labradorian* serves Newfoundland and Labrador.

<sup>15</sup> Top 10 Nunavik stories in 2005: ATV accidents raise concern over off-road vehicle safety. *Nunatsiaq News*. January 6, 2006. Available at [www.nunatsiaqnews.com/news/nunavik/60106\\_02.html](http://www.nunatsiaqnews.com/news/nunavik/60106_02.html).

<sup>16</sup> See for example the following reports by *CBC News North*: Despite fatal accident, no lesson learned. October 30, 2000; Alcohol cited in snowmobile fatality. April 18 2001.

<sup>17</sup> Andrew Raven. Family sues over snowmobiler death. *Northern News Services*. Yellowknife. Aug 03/05.

<sup>18</sup> Chris Hunsley. Yukon teens cool to new rules for snowmobiles. *Northern News Services*. Yellowknife. Nov 29, 2004.

<sup>19</sup> Snowmobile use under scrutiny in Iqaluit. May 17, 2005. *CBC News North*.

<sup>20</sup> According to a report by the Canadian Paediatric Society's Injury Prevention Committee, young ATV drivers (under 16) and their passengers "lack the knowledge, physical size and strength, and cognitive and motor skills to operate [ATVs] safely." Injury Prevention Committee. Preventing injuries from all-terrain vehicles. Canadian Paediatric Society. *Paediatrics & Child Health* 2004; 9(5): 337-340. See [www.cps.ca/english/statements/IP/IP04-01.htm](http://www.cps.ca/english/statements/IP/IP04-01.htm). Accessed January 13, 2005.

<sup>21</sup> Compensation for key informant interviews was not included in the project budget and was not discussed when arranging interviews in Inuit regions. One key informant insisted that it was proper to compensate Inuit for sharing their knowledge. For future telephone interviews with Inuit key informants it is recommended that the policy regarding compensation be stated when potential informants are initially contacted so that prior to consenting to participate it is clear whether funds will be provided.

<sup>22</sup> Researchers offered copies in English, French and Inuktitut.

<sup>23</sup> See the Canadian Centre on Substance Abuse's Youth Volatile Solvent Abuse (VSA) on the CCSA website. Available at [www.ccsa.ca/NR/rdonlyres/B7B01B16-838F-437B-82C5-63760FE577EE/0/ccsa0113262006.pdf](http://www.ccsa.ca/NR/rdonlyres/B7B01B16-838F-437B-82C5-63760FE577EE/0/ccsa0113262006.pdf).

<sup>24</sup> Derek Neary. Marijuana crackdown. *Northern News Services*. Fort Simpson. November 18, 2005.

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<sup>25</sup> Dr. Smylie has worked with the Anishnawbe Health Clinic in Toronto and is on the Aboriginal health clinic planning committee in Ottawa. She is a member of the Native Physicians' Association in Canada and the Committee on Aboriginal Women's Health Issues of the Society of Obstetricians and Gynaecologists of Canada. *Canadian Medical Association Journal*. April 12, 2005; 172. Available at [www.cmaj.ca/cgi/content/full/172/8/977](http://www.cmaj.ca/cgi/content/full/172/8/977).