

SUMMARY FOR HEALTH STAFF

Surveillance of head injuries in Eeyou Istchee

Purpose

This study compares rates of traumatic brain injury in Eeyou Istchee to other regions, and looks at the main causes of these injuries and the outcomes for patients. The final portion offers some suggestions for prevention.

Background

In 2012, Quebec’s health institute (INSPQ) did a study of all the head injuries serious enough to require hospitalization. The study concluded that to reduce the number of serious head injuries, we should focus on preventing falls.

However, the INSPQ study did not include the three northern regions—Eeyou Istchee, Nunavik, and Nord-du-Québec—where conditions are very different. So it’s not clear if the INSPQ conclusions apply to Eeyou Istchee. This study took a closer look, using a combination of

- Hospitalization data for the years 2000-2012; and
- Chart reviews for the adult patients.

Higher rates of head injury in Eeyou Istchee

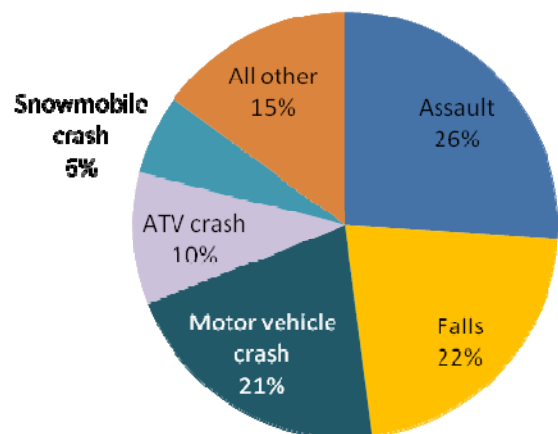
Between 2000 and 2012, 172 Eeyouch were hospitalized for head injuries. This translates to a rate that is 1.8 times the average for the rest of Quebec.¹ And while Quebec-wide rates have fallen since the 1990s, there’s no sign the rates in Eeyou Istchee are dropping. The province-wide data obscure these regional differences.

In fact, even within Eeyou Istchee, the rates vary: Whapmagoostui has the highest rate, followed by the other Coastal communities, then the Inland ones. The leading cause of head injury also differs between Whapmagoostui, the remaining Coastal communities, and the Inland ones.

Different causes of head injury

The main causes of serious head injury in Eeyou Istchee are assaults, falls, road crashes, and crashes with ATVs and snowmobiles (Figure 1). This is a very different picture from the rest of Quebec, where falls account for nearly half the head injuries.

Fig 1: Causes of serious head injury Eeyou Istchee 2000-2012



¹ This comparison is adjusted for differences in the age/sex structure of these two regions.

Factors associated with head injuries (age 15+)

A detailed analysis of the adult head injuries showed that most (84%) were at the mild end of the scale. Over half the patients were reported to have been drunk at the time of the incident, and only a quarter of those who could have been wearing helmets or seat belts were doing so. The people using protective equipment had slightly less severe injuries, and better outcomes.

Differences in who gets rehab (age 15+)

Younger people and those with milder injuries were less likely to receive rehab, although some of them might have benefitted from it. Curiously, people involved in a motor vehicle crash were more likely to receive rehab than those injured in a fall or an assault—even holding other factors like severity of injury constant. Policies are needed to ensure that patients receive rehab based on need, not just the type of incident they were involved in.

Conclusions

The authors conclude that province-wide data doesn't properly capture the causes of injury for rural areas and groups such as Eeyouch. In these cases, we need local studies to inform prevention efforts.

Preventing head injuries

What can communities do to prevent some of these injuries? Many agencies have a part to play, including health services, police, and schools.

The groups at greatest risk are youth and adults under 65—an age at which most of the head injuries result from either violence or vehicle crashes. The pages that follow describe some of the strategies that have been tried elsewhere. Strategies that have been shown to work are listed in black font. Strategies that seem promising but are unproven are shown in *gray italics*.



Preventing head injuries from violence: some options

Schools and school boards can...

Offer programs that address violence, such as bullying-prevention programs

Encourage youth to stay in school and give them positive ways to occupy their time:

- Offer a variety of programs to meet the needs of different groups of students
- Offer mentoring programs
- Provide incentives for youth to complete high school
- Offer extracurricular activities

The Social Services department can...

Offer programs to strengthen ties to family/job and reduce violent behaviour

The Band Council can...

Reduce availability of alcohol

Offer recreation programs for youth and adults

Job creation

Provide shelters for victims of violence

Encourage members of the public to report violence

Create safe routes for walking at night (e.g., well lit)

The NNADAP program can...

Address substance abuse in victims and perpetrators of violence

Health services and health workers can....

Encourage people to seek care for milder head injuries

Provide psychological support for victims of violence

Improve access to rehab,

and make sure it is offered based on need

Collaborate with specialized trauma centres

Mental Health services can....

Address abuse of alcohol and drugs

Offer bullying-prevention programs (in collaboration with schools)

Collaborate with schools to encourage students to complete school

Offer programs to strengthen ties to family/job and reduce violent behaviour

Collaborate to provide recreational activities

The Justice system and police can...

Encourage members of the public to report episodes of violence (at the time, or after the fact)

Develop programs to identify victims of violence

Many of the school-based strategies for preventing violence are known to be effective!

Preventing head injuries from vehicle crashes: some options

Health services and health care workers can...

Encourage patients to use helmets on snowmobiles and ATVs, and seatbelts in cars

Discourage driving while impaired and while tired

Develop a support program for crash victims

Ensure rehab is available in the community

Provide rehab based on need (it should not be offered only to car crash victims whose care is covered by the SAAQ)

Develop partnerships with specialized trauma centres

The Road Maintenance department can...

Develop designated trails for snowmobiles and ATVs and encourage people to use them

Install guardrails near ditches and ravines

Recreation departments and event organizers can...

Promote use of safety equipment at their events (e.g., insist that all riders wear helmets during snowmobile races)

The police can...

Enforce the laws on:

- Speeding
- Driving while impaired
- Use of seatbelts
- Snowmobile helmets
- Helmets and age limits for ATVs

The ambulance/First Responders can...

Make sure the community has equipment to extract crash victims from vehicles, and that staff know how to use it

Considering a strategy not shown here? You can ask Oliver Lasry to check if anyone has tried it before, and if it gave good results. Email oliver.lasry@mail.mcgill.ca

This is a summary of a more technical paper by Oliver Lasry, Roy Dudley, Rebecca Fuhrer, Jill Torrie, Robert Carlin, and Judith Marcoux, entitled “Traumatic brain injury in a rural indigenous population in Quebec, Canada: a community-based approach to surveillance.” (Version of August 3, 2015.) The suggestions for prevention are drawn from a larger report by Oliver Lasry, entitled *The epidemiology of traumatic brain injury in the Cree Communities of Eeyou Istchee* (February 2, 2015).