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Is Legislation the Answer for Safety in Sport?...
The Québec Experience

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1. Introduction

It is well documented that regular physical activity can improve health and quality of life.¹ The corollary is that a sedentary lifestyle is considered an important risk factor for coronary heart disease, as are addiction to smoking and high blood pressure.¹ The benefits of physical activity are not limited to prevention of adverse health outcomes. For example, it is recognised that physical activity can contribute to the treatment of light arterial hypertension and non-insulin dependent diabetes. Moreover, in combination with a proper diet and a healthy lifestyle, physical activity is an influential factor in the control of body weight. From a public health perspective, the benefits of physical activity are clear.

There is however, a cost of physical activity-namely the burden of injuries. Injuries resulting from sports and recreational activities are a significant health problem in many countries,^{2,3} including Canada.⁴ In Québec, *Santé Québec*'s 1998 Social and Health Survey revealed that injuries which occurred in a sport and leisure venue represented 20% of all injuries resulting in limitation of normal activities or medical consultation, compared with 35% of injuries at home, 21% in the workplace, and 7% on the road.⁵ Moreover, sport and recreational activity injuries (SRAI) were second only to falls accounting for 24% of all injuries.⁵ Of course, SRAI are not all severe: there are more deaths on Québec roads than on sports fields, and generally, road injuries are more severe than SRAI. However, the public health burden of SRAI is manifest in their morbidity. A population survey done for the *Secrétariat au loisir et au sport* (Secretariat for leisure and sport or SLS) estimates that during the year 2000, 291,000 Québec residents aged six years or more consulted a health professional to treat a SRAI (4,249/100,000).⁶ The direct and indirect economic cost associated with these injuries is estimated at more than \$250,000,000 annually.⁷ These data clearly show the scale of the SRAI problem and the importance of establishing safe environments.

In 1979, to significantly contribute to the establishment of safe environments, the government of Québec adopted the *Act Respecting Safety in Sports* which created the Régie de la sécurité dans les sports du Québec (Québec Sports Safety Board or QSSB).⁸ From September 1979 to March 1998, the QSSB was responsible for applying the *Act Respecting Safety in Sports*. Since then, through its mission which is to “foster the development of recreation and sport in a safe and healthy environment and promote an active lifestyle for all Quebecers”, the SLS now supervises the execution of the *Act Respecting Safety in Sports*. In accordance with this act, one of the SLS's orientations is to “ensure that the safety and physical security and well-being of participants are provided for during sports and recreation activities”.

The next section of this paper describes the events leading to the adoption of the *Act Respecting Safety in Sports*, and some of its legislative and regulatory powers. Section three focuses on five key elements to consider in the development and implementation of safety measures. Some indicators are presented in section four. In conclusion, an answer to the question “Is legislation the answer for safety in sport?” is proposed.

2. The Act Respecting Safety in Sports

Until the 1960s, most of the debate about the role of government in the safety of sports participants focused on professional boxing. However, in 1964, a report from a government sponsored Task Force on Recreation, Physical Education, and Sports recommended that the government, in the name of common good, ensure that sports and recreation organisations, public or private, meet minimum safety standards for facilities, equipment, programs, and personnel. To that end, the task force advised that government develop relevant legislation pertaining to the issue of operating permits and the certification of programs.⁹ The recommendations were not acted upon at that time, but the report raised important issues that were discussed frequently in the media over the following decade.

In 1972, and again in 1974, the government proposed the creation of a provincial boxing commission with no success. In 1976, a bill proposing the creation of a sports and recreation commission also failed to pass. From 1974 to 1979, coroner inquests into the death of participants in recreational activities such as scuba diving, sky diving, ice hockey, and canoeing repeatedly noted the lack of legislation to ensure the safety of participants and called for governmental intervention. During the same years, violent events on and off the ice during junior ice hockey league games prompted the government to call for an inquiry into violence in ice hockey. The final report, published in 1977, recommended the creation of an agency with quasi-judiciary powers to enhance the safety of sports participants, namely a “sports board”.¹⁰

Exhaustive consultation of all the groups involved were held until 1979. Included were representatives from the 64 sports federations, the five universities offering physical education programs, and a sample of school boards and municipalities. In all, 89 meetings were held resulting in the following consensus:

- Representatives from amateur sport were anxious to have a regulatory body that would enforce safety regulations;
- Efforts should be directed at informing all participants about the safety measures they can adopt to prevent sports injuries;
- Efforts should also be directed at improving the training of coaches and officials;
- Standards on sports facilities should be developed and enforced;
- The sports and recreation equipment consumer should be protected by the adoption of standards directed at manufacturers.

Following these consultations, the government adopted the *Act Respecting Safety in Sports* (1979) which created the QSSB.

The functions

In order to supervise the execution of the *Act Respecting Safety in Sports* and its regulations, the SLS is empowered to:

1. Gather, analyse, and disseminate information on sports safety;
2. Conduct, or cause others to conduct, research on sports safety;
3. Educate the public on safety in relation to the practice of sports;
4. Prepare safety training methods for persons who work in the sports field;
5. Give technical assistance to sports federations or unaffiliated sports bodies in preparing safety regulations;
6. Assist any person requesting advice on means to ensure sports safety.

Evolution of powers

From 1979 to 1988, the efforts were concentrated on developing safety regulations for organised sports in collaboration with amateur sports federations. From 1988 to 1991, the QSSB was limited to working almost exclusively with organised sports federations, about 8% of all sports and recreation participants. For instance, while the Québec Alpine Skiing Federation (QASF) had 1,000 members involved in competitive skiing, about 800,000 Quebecers ski on a recreational basis and are, therefore, out of reach of QASF's safety regulations. Using one of the powers invested by the act, the QSSB moved in with regulations of its own in 1988 to improve the safety of all recreational skiers. These new regulations were directed at ski centre operators and included requirements for signs, lighting for night skiing, qualifications for ski patrollers and monitors, first aid equipment, and the enforcement of a skier's code of conduct. The same situation was seen in ice hockey, where thousands of adult recreational players, outside the ranks of the Québec Ice Hockey Federation (QIHF) in so-called "old-timers leagues", were not subject to safety regulations. Again, the QSSB stepped in and introduced regulations requiring the use of a helmet, a full face protector, and a neck protector for those players.

3. Key elements to consider in the development and implementation of safety measures

Drawing mainly from our 20-year experience and from published literature in the fields of SRAI prevention, we have produced a list of five key elements to consider in the development and implementation of safety measures.

Approach the injury problem at hand with a multi-dimensional view

The QSSB adopted a strategic plan in 1991 with the goal "to contribute to the social and economic balance sheet of sport and recreational activities in the province by reducing mortality, hospitalisation and medical consultation rates by 15% before the year 2000".¹¹ In 1992, this objective was incorporated into the health and welfare policy adopted by the province.

The plan brought together many of the latest conceptual advances made in the field of injury prevention¹²⁻¹⁴ and are included in the following four guiding principles:

1. Consider the cost/benefit ratio when selecting an intervention strategy;
2. Consider the impact an intervention might have on the nature of the sport;
3. Choose interventions adapted to the problem at hand: either inform, convince, or contrive;
4. Encourage partnership.

Four general strategic intervention areas were also identified: (1) training of coaches, teachers, first aid personnel, etc; (2) standards for facilities; (3) standards for personal equipment; and (4) attitudes and behaviours of participants.

Ten years later, we refer regularly to these guiding principles and strategic intervention areas. In fact, whatever the model selected for analysis or intervention, injury problems and solutions must be considered in terms of human factors, environmental factors, mechanical factors and sociological factors.

Beliefs confuse the issue; get the facts

Sport is an area where changes occur slowly because of deep-rooted beliefs. You need well-documented facts on the injury problem you are dealing with as well as the effects of the measures you are proposing to even begin trying to convince the targeted group – whether it be elite athletes, recreational participants or owners of sport facilities.

In ice hockey, for example, the QIHF changed its regulation in 1984 to ban body-checking in all pee-wee divisions (12-13 years old). This decision followed a study sponsored by the QSSB, showing that the risk of players in that age group suffering a fracture was 12 times greater in leagues that allowed players to body check.¹⁵ Other provinces followed the QIHF's decision, but 17 years later, the Canadian Hockey Association has still not changed its rule.

Another example can be found in the work done in Québec in the area of alpine skiing safety. In the mid-80s, ski centre operators believed that stricter safety regulations would drive their clients away. But a survey done on a large sample of Québec skiers revealed, on the contrary, that 94% of the regular skiers thought that more safety measures were needed.¹⁶ Moreover, eight skiers out of ten expected, for their money, to be able to ski in a safe environment.¹⁶ These results greatly contributed to a change in attitude by ski centre operators toward governmental regulations. It has also made it easier for us to adopt and enforce ski safety regulations since 1988.

Work towards a consensus; develop coalitions

Even if you are in a position to impose mandatory safety measures, make sure you develop strong grass-roots support for your intervention. Identify the key stakeholders and work with them on solutions that they are willing to apply. Be prepared to support these partners with information and training.

The QSSB sponsored the first summit on sport and recreation safety in 1993 realising the necessity of approaching injury problems from an intersectorial point of view. The summit brought together over 80 associations and governmental agencies from education, health, and sports and recreation, both from the private and public sectors. The result was 13, three-year action plans intended to improve sport and recreation safety in areas identified as priorities by a survey preceding the summit. One hundred and ten specific actions were identified, ranging from regulation modifications to social marketing campaigns. Most participating agencies were committed to carrying out the tasks falling under their responsibility. A flexible, easy to use follow up system has been established to track progress and maintain the momentum of each group toward honouring their commitment.

The summit was a good occasion to strengthen ties with other governmental entities who share some SLS responsibilities for providing safe environments for sports participants. The SLS acts with those partners as a lobbyist, to put sports safety on their agenda. A good example is the safety seminars for physical education teachers developed in collaboration with the Education Department and delivered by school board personnel. The SLS also works with influential departments to raise the visibility of sports safety. In 1992, the SLS convinced the Health and Social Services Department to include specific sports injury reduction objectives in the health and welfare policy they adopted. The SRAI prevention issue is also considered as one of the 1997–2002 public health national priorities of the Health and Social Services Department. Moreover, it will be included in the 2002–2010 national public health programme.

Recognise the limits of information campaigns; develop back-up technological systems

Public awareness campaigns are important, but they are not enough. Well-informed people are still human beings, which means that knowledge does not necessarily result in behaviour change. One of the most efficient ways to improve sports safety is through the modification of the environment.¹⁷ In line with this passive protection approach, a series of voluntary facilities standards were developed. Such standards have been adopted for ice rink arenas, cross-country skiing trails, for European football, baseball, and softball fields, and rafting. In all cases the standards cover the design and maintenance of the facilities, and in some, they also cover the conditions for their safe operation.

These four sets of voluntary standards have all been process evaluated, with encouraging results. Depending on the facility considered, between 75% and 90% of the owners/operators have consulted the standards; over 95% consider them “useful” or “very useful”; and between 36% and 58% have reportedly made changes to their facility within a year after receiving a copy of the standards. The impact of those changes on the rate of injuries is not yet known.

Still, we must be aware of the possible negative effects of reliance on passive safety technology alone – possibly more carelessness.^{18,19} This is why it is so important to have in place a mechanism to evaluate any safety intervention – no matter how benign it may seem.

Try to change the perception that more safety brings less fun

Safety is often perceived as something that will take fun away from sport and recreational activities. In fact, safety measures can allow participants more enjoyment from their activity by giving them “peace of mind”. In general, outdoor specialists understand this positive side of safety. Safety is often what makes their activity possible. We can all learn from their attitude toward safety.

A.W. Whitney, an adventurous, yet very wise, mountain climber once said: “...Safety is essential if I want to pursue better and greater adventures”. He was probably referring to this positive side of safety.

4. Some indicators

In 1990, Québec was the province with the lowest rate of sport and recreational injuries in Canada: 67/1,000 participants compared with 100/1,000 for the rest of the country. The province of British Columbia showed the highest rate (176/1,000)^{4,20,21} (unfortunately, comparable statistics are not available for the period before the adoption of the *Act Respecting Safety in sports*). Other data based on three identical surveys done in the provinces of Ontario²² and Alberta²³ in 1995, and in Québec in 1993,²⁴ indicate that Québec has a lower rate of injuries, at 70 per 1000 participants, than Ontario with a rate of 96/1,000, and Alberta at 102 per 1000.

From 1991 to 1999, the rate of hospitalisation for sport and recreational injuries dropped by 22%,²⁵ while hospitalisations for injuries from other causes (motor vehicle, burns, poisoning, etc) rose by 5%. The denominator used for these rates was the total population, not only “participants”. However, three province wide surveys, in 1988,²⁶ 1993²⁴ and in 2000,⁶ showed that the rate of participation in sport and recreational activities did not change significantly over that period. From 1990 to 1998, the death rate decreased by 29%, from 3.04/100,000 persons to 2.15/100,000.²⁷

As mentioned earlier, in 1988 regulations requiring the use of a helmet, a full face protector, and a neck protector were introduced for adult recreational hockey players. One year later, the use of full face protectors rose from 25% to 88% (it was 65% in 2000) with a corresponding reduction in eye injuries.^{28,29} An evaluation of the economic impact of this regulation from 1988 to 2000 showed a cost/savings ratio of 1/13.7.²⁹ That is, every dollar invested by the government in the development, promotion, and enforcement of the regulation generated \$13.70 of savings in health care costs.

Another indicator is provided by a study of spinal cord injuries in Canadian ice hockey. Québec is the province where the rate of such severe injuries is the lowest. For instance, from 1966 to 1996, Tator *et al* reported 126 cases in Ontario compared with only 22 in Québec.³⁰ The difference in the number of players in these provinces is too small to account for this variation. It has been suggested that the safety initiatives arising from the QSSB and the SLS may explain the sharp differences in injury rates between Québec and Ontario.³¹

Although it is impossible to directly link these observations to the interventions of the QSSB and the SLS, they strongly suggest trends in the right direction. Our biased evaluation is that, at the very least, the work of the QSSB, SLS and their partners over the last 20 years has contributed to the creation of a much safer climate for sports in the province.

5. Conclusion

In 1979, the Québec government adopted the *Act Respecting Safety in Sports*, and therefore created the QSSB, to address the many safety problems surrounding sports and recreational activities in the province. It is still the only act of this kind in Canada. Over its 20 years of operation, the board and the secretariat have gradually incorporated the conceptual advances made in the field of injury control into its strategies of operation. The presence of a governmental entity clearly and solely responsible for the safety of sports and recreational participants carries two strong messages: (1) injuries resulting from sports and recreational activities are a significant public health problem, and (2) something can be done to prevent them from happening.

Paradoxically, 20 years after the adoption of the act, we still frequently meet some obstacles along the way. First, the scope of SRAI in terms of incidence, medical costs, and long term disability is still widely underestimated. Thus, the problem is often disregarded as insignificant and unworthy of political attention. Second, even if the scope of the problem is well known, there is a widespread belief that injuries are an inherent part of sports and recreational activities. Therefore, it is perceived that no amount of intervention will ever make a significant difference in the incidence and severity of such injuries. Third, one of the strong motivations drawing people to recreational activities, in particular to those practised outdoors such as skiing, is the sense of liberty they provide. From that perspective, attempts at codifying these activities through regulations will not be well accepted (politicians might be sensitive to such objections if voiced by a large number of voters). Fourth, sport governing bodies are often quite sensitive to outside intervention, but particularly so from government intervention.

Therefore, from our Québec experience, what is the answer to the question “Is legislation the answer for safety in sport?” I would certainly like to answer “no” if for no other reason that it is not easy to constrain. In an ideal world, every stakeholder group (participants, manufacturers of equipment, owners of facilities, coaches, instructors, teachers, and others) would adopt safe, or safer practices on their own. But our past experience shows that this is not always the case. In fact, the presence of a body such as the QSSB or the SLS is often essential to serve as a catalyst and a unifying force to channel and co-ordinate interventions. On the other hand, legislation alone is not the answer. In the Québec context, the powers defined in the *Act Respecting Safety in Sports* should be viewed as only one of a number of possible intervention strategies that range from education to coercion.

Is legislation the answer to safety in sport? From what we have learned over the past 20 years, legislation may not be THE answer, but it certainly is an important part of it.

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