An Overview of Some Definitional Issues for Sports Injury Surveillance

Caroline F. Finch
Monash University Accident Research Centre, Clayton, Victoria, Australia

Summary

Injury surveillance is the ongoing collection of data describing the occurrence of, and factors associated with, injury. The success of any sports injury surveillance system and its wide scale applicability is dependent upon valid and reliable definitions of sports injury, injury severity and sports participation.

Published sports injury reports are often difficult to interpret and compare with other published data because of different data collection and/or analysis methods. Standardised data collection methodologies including definitions are crucial for improving the comparability and interpretation of published data. Attention needs to be directed towards the definition of both risk and exposure factors since the validity and usefulness of the outcomes of research activities, data collection and surveillance systems rely on these. International consensus on appropriate definitions would greatly assist the collection of comparable and reliable sports injury data.

Standardised definitions are also needed to answer questions such as: 'what is a sport? When should an activity be considered to be recreational rather than sport? Who is a sports participant? How should sports participation be measured? What is a meaningful measure of exposure to injury risk? What is a sports injury? How should sports injury severity be measured? How severe must an injury be before it should be considered to be a sports injury for surveillance purposes?'. Agreed definitions and answers to these questions are essential before injury surveillance is established.

Sports injury data is needed to guide injury prevention activities, to set and monitor sports safety policies and interventions, and as the basis of sports injury prevention research. All sports injury surveillance systems should therefore collect information about the epidemiology of sports injuries and their outcomes in a form that is of relevance across a broad range of potential users of the data.

Participation in sports and exercise activities is promoted for a number of reasons.[1-3] However, increased participation in sports and recreational activities increases the exposure to the hazards and risk factors associated with the occurrence of sports injuries. As more people participate in such activities, it can be expected that the number of injuries associated with them also has the potential to increase. A sports injury surveillance system is needed to allow the monitoring of sport-related injury trends over time to demonstrate whether an increased participation in sports and other activities is accompanied by a change in the patterns of injury.[3-5]

In their review of 40 years' experience of monitoring fatalities in tackle football, Mueller and
Blyth[6] argue that the annual surveys of football fatalities conducted by the American Football Coaches Association have been the basis for football rule changes and equipment improvement over the years in which this game has been played. These authors concluded that, ‘data collection plays an important role in the prevention of injuries .... There is no question that the beneficial changes are the result of reliable data collection and the publication of the results in the athletic and medical literature. Persistent surveillance of sports injury data is mandatory if progress is to continue in the prevention of fatalities. Continuous data are needed in order to observe the development of specific trends, to implement in-depth investigation into areas of concern and to carry out preventive measures. If continued progress in sports injury prevention is to be made, reliable data are a must’.[6] The lessons learnt from the experience of tackle football in the US are valuable ones that should be translated to other sports and other countries.

Data collection activities are also needed to identify the incidence and prevalence of injury within specific sports and across a range of sports.[2,3,7] Unfortunately, published sports injury reports are often difficult to interpret and compare with other published data because of differences in the collection and/or analysis of the epidemiological data.[3-5,7,8] Standardised data collection methodologies, including definitions, would do much to improve the comparability and interpretation of published data.

Standardised definitions are needed to answer questions such as:[3,7-9] ‘what is a sport? What is a sports participant? How should sports participation be measured? How should the population at risk of injury be defined? What is a meaningful measure of exposure to injury risk? How should exposure time be measured? What is a sports injury? How should sports injury severity be measured? How severe must an injury be before it should be considered to be a sports injury for surveillance purposes? Should sports injuries that occur during informal sports or recreational activities be treated differently from those that occur during formal or organised sports activities in surveillance activities?'

Agreed definitions and answers to these questions are essential before standardised injury surveillance and other sports injury data collection systems can be established.

In February 1995, a round table session entitled ‘Definitional Issues for Sports Injury Surveillance’, chaired by the author of this paper, was held during the Third International Conference on Injury Prevention and Control in Melbourne. An international expert panel was brought together to discuss and implement the issues raised in this paper. The expert panel included a total of 15 representatives from Australia, Canada, New Zealand, the Netherlands, Sweden and the US. This paper formed the background document to the round table session and the following set of 5 papers were amongst those presented and discussed. The following papers address the specific issues of:

- whether one type of injury surveillance system would cover all data needs[10]
- the key role that sports data play in sports medicine[11]
- measures of injury exposure[12]
- measures of injury severity[13]
- the type of data needed to inform protective equipment development[14]

Other topics discussed during the round table session included:

- progress towards developing a national minimum data set for sports injuries in New Zealand
- existing government and routine data collection of participation data
- classification of mechanisms of injury.

1. The Importance of Sports Injury Data

Data on the incidence of sports injuries are important for a number of reasons.[3,5,7,8] The most important requirement is to provide a guide for sports injury prevention activities and research into improving sports safety. Sports injury data assist in the identification of priority areas for injury prevention activities and research in terms of particular sports, activities and levels of participa-