WHAT'S NEW IN INJURY SURVEILLANCE

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This article highlights how non-inpatient surveillance data have been used in injury control in Australia and announces the development of a new emergency department surveillance tool, Basic Routine Injury Surveillance (BRIS), to enhance our surveillance efforts.

THE INJURY PROBLEM

Injuries have a substantial impact on the lives of the people of NSW, accounting for more deaths in those up to the age of 44 years than any other single cause. Injury mortality is exceeded only by cancer as a cause of potential years of life lost¹. The significance of injuries as a public health problem has stimulated interest in preventive activity. More recently the importance of timely and accurate information as the essential foundation for effective injury prevention has been recognised.

The National Injury Surveillance Unit (NISU) of the Australian Institute of Health and Welfare has been promoting and supporting the development of information systems to satisfy the demand for data to assist intervention planning and evaluation. In this context it is opportune to discuss what constitutes an effective surveillance system. We should consider the purpose of, the role of existing data collections in, and the relationship of local prevention and control structures to, a proposed surveillance capacity. The importance of data analysis and dissemination to the effectiveness of any surveillance program cannot be overstated.

The most effective approaches to injury prevention emphasise community involvement² and strategic planning, taking account of particular host, agent and environmental factors in context rather than focusing exclusively on isolated aetiological factors³. A locally based surveillance system is, then, a potentially valuable source of information for injury prevention. The precise form(s) of this surveillance system will depend on local priorities, resources and available data.

SURVEILLANCE AND INJURY

Injury surveillance can be used to:

- provide quantitative estimates of injury morbidity and mortality;
- detect clusters of injury events;
- identify factors in injury occurrence;
- stimulate further research to focus interventions; and
- evaluate control measures⁴.

A number of approaches to surveillance has been adopted. Routinely collected data have the advantage of a low marginal cost and allow historical comparisons to be made. An alternative is to collect information specific to injury prevention. Though having the advantage of providing information of direct relevance to intervention planning and evaluation, such stand-alone systems may have a substantial marginal cost and demands on staff may jeopardise long-term viability.

The paucity of information about injuries that do not result in hospital admission or death has prompted demands for information from, for example, hospital accident and emergency departments and population surveys. Less

severe injuries make up the bulk of the community burden of injury morbidity (the base of the so-called injury pyramid⁵). A complete picture of the injury experience, especially at a local level, will be obtainable only from a range of information sources.

WHAT IS BRIS?

The Injury Surveillance and Information System (ISIS) developed by NISU has operated in about 40 hospitals throughout Australia⁵. Information from this source, provided through Childsafe NSW, was used in the characterisation of the problem of childhood burns in NSW. (Childsafe NSW now uses BRIS in the paediatric injury surveillance system it coordinates.) Hospital inpatient data indicated the size of the problem and suggested scalds were the major issue. The ISIS system provided detail about specific issues (e.g. coffee and tea cups were a common source of scalding liquid). The availability of data from a range of sources aided development of an appropriately targeted intervention.

The Moree Agricultural Health Unit used ISIS data collected in local emergency departments to plan a prevention program for farmwork injuries⁶.

Though recognising such successes, the limitations of ISIS, and developments in emergency department information systems, have prompted NISU to promote a reduced data collection, Basic Routine Injury Surveillance (BRIS). BRIS is designed to provide basic information relevant to preventive activity by identifying important issues, facilitating comparisons (between data sources, regions and times) and enabling evaluation of interventions. It is also intended to be consistent with other priorities for data collection in emergency departments, maximising the relevance to those involved in data collection⁷.

The most recent elaboration of BRIS consists of five core injury data items, more detailed classifications for optional use with the core items, recommendations about general information that should be available on each case and an additional classification for coding free text information. (Previous versions had six core items. Geographic location of injury is now an optional, supplementary, item.)

The five core items are:

- text description of the injury event;
- the main 'external cause' of injury;
- the type of activity of the person when injured;
- the type of place where the injury event occurred; and
- the main injury sustained.

The text field has been considered one of the most useful facets of ISIS. It enables relatively specific data (including products) and additional detail, relevant to local concerns, to be included.

NISU is supporting projects in the Western Sydney Area and the New England Region which will contribute to the development of the methodology for collecting these data. In rural NSW a minimum data set including injury has been developed by the Central West Region and is being implemented across Central West, New England and Orana and Far West Regions. The system operates from a hard copy register, with data entered to computer on-site. The system is being evaluated by the Public Health Unit at Taree with a view to evolving a data set compatible with the BRIS standards.

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The Western Sydney Centre for Health Promotion has supported the collection of ISIS information in a number of local emergency departments. Building on this experience the Paediatric Injury Prevention Group based at Westmead Hospital, in consultation with the Western Sector Public Health Unit, has incorporated BRIS in a database that enables data about all presentations in the emergency departments of two local hospitals to be entered directly onto PC. The BRIS component of this database is to be evaluated according to its accuracy (sensitivity and specificity), simplicity of collection and end user satisfaction.

BEYOND DATA COLLECTION

Two general aims of these projects are to validate a set of data items of relevance to injury surveillance and then to advocate for the inclusion of these items (or a defined subset) in Area patient management information systems or as ongoing stand-alone systems in emergency departments.

We are aware that the potential of a surveillance system may be limited by the perspective of those designing and managing the system. Viewing surveillance as simply data collection and collation neglects the crucial areas of analysis and interpretation. A complete public health surveillance system requires a range of data sources to be linked to intervention programs and services. The Centers for Disease Control (CDC) have defined surveillance as:

... the ongoing systematic collection, analysis and interpretation of health data essential to the planning, implementation and evaluation of public health practice, closely integrated with the timely dissemination of these data to those who need to know. The final link in the chain is the application of these data to prevention and control. A surveillance system includes a functional capacity for data collection, analysis and dissemination linked to public health programs⁸.

Central to this definition of public health surveillance is the focus on populations, rather than selected diseases, and an insistence on a functional connection in any surveillance system between data collection, interpretation and public health policy and action.

To ensure data collected according to standards developed and promoted by NISU will contribute to reductions in injury mortality and morbidity, it will be essential to involve existing health promotional and preventive structures and to place priority on the development of networks spanning intersectoral boundaries. The system must have the expertise to analyse and interpret data in a way that will assist in directing, and evaluating, intervention and control strategies. Good quality information will be of little value if it is not interpreted, disseminated and acted on.

A corollary of this is the necessity to consider the uses to which the information will be put. If there is no intention, or

capacity, to make use of relatively detailed data collected on a daily basis then the data should not be collected. It may be better to use existing data to determine rates of injury and perhaps have a sentinel hospital(s) collecting more detailed information, with detailed investigation of specific issues as required.

PREVENTING INJURY IN NSW

Injury surveillance underlies many of the recommendations in the recently published NSW Injury Strategic Plan¹. A surveillance system comprising comparable local systems and embraced by injury prevention programs and organisations is required. The BRIS data set is oriented to public health information concerns. Advocating for incorporation of data standards such as BRIS into patient information systems should be seen as part of a necessary change in emphasis in development of such systems. We can add value to these information systems by insisting on the relevance of public health concerns in their development.

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