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Information sources for injury prevention among Indigenous Australians

Status and prospects for improvement

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Tarun Weeramanthri, John Wakerman, Tony Barnes

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The Australian Institute of Health and Welfare is Australia’s national health and welfare statistics and information agency. The Institute’s mission is to improve the health and well-being of Australians by informing community discussion and decision making though national leadership in developing and providing health and welfare statistics and information.

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Contents

1 Purpose and scope of this report

Rates of injury mortality and hospital admission due to injury are substantially higher for Indigenous Australians than for the Australian population as a whole. A similar pattern is seen for mortality generally and for many diseases (ABS and AIHW 1999). In this report, the term ‘Indigenous’ is used when referring to persons identifying as of Aboriginal or Torres Strait Islander descent.

While mortality and morbidity may be declining, at least for some conditions, improvement may be less than for the general population, resulting in widening of health differentials. In contrast, the health status of Indigenous people in New Zealand and the USA is tending to approach that of non-Indigenous majority populations (Ring and Elston 1999, Ring and Firman 1998).

This report is intended to provide a guide to information sources which are being used to inform or support prevention of injury in the Indigenous population, and to sources which could be used for this purpose.

The report was commissioned to assist the development by the Commonwealth Department of Health and Aged Care of an implementation plan for Aboriginal and Torres Strait Islander injury prevention. The National Aboriginal and Torres Strait Islander Health Policy and the National Injury Prevention Action Plan provide the wider policy context for this development.

The implementation plan will be developed in consultation with Indigenous representative organisations, as were many of the initiatives described in this report. Some other initiatives described here are community controlled. This description and assessment of activities and programs was not itself based on formal consultation with Indigenous organisations. It is important to recognise that this report is a paper-based and expert-informed review of existing data to be developed prior to any further action, such as consultation with appropriate Indigenous organisations.

The aim for this report, as stated in the project brief, is:

> To provide advice to the Commonwealth Department of Health and Aged Care on the range of issues affecting the collection and interpretation of statistics concerning injury of Indigenous people.
>
> This will include advice concerning existing data and data sources, their deficiencies and suggested improvements.

The Department’s scope of interest includes:

- Large scale administrative by-product collections (i.e. mortality and hospital morbidity collections)
- Local or regional collections which exemplify information collection methods serving local purposes and/or have potential for replication or expansion.

The report is structured as follows:

Chapter 2 provides background to the later parts of the report. It includes a brief review of the historical context to contemporary Indigenous health, an overview of previous findings concerning Indigenous injury experience and an assessment of ways in which information can contribute to Indigenous injury prevention. The discussion draws on recent work concerning information for public health generally, and information for Indigenous health and for injury prevention. The chapter presents a framework for considering information sources and their role in achieving prevention.

Chapter 3 is a survey of information sources which are being used for Indigenous injury prevention or which have potential for this purpose. Where possible, assessment of data quality and other attributes is included with the assessment of data sources. Population data must be used with case data from various sources to calculate rates, and population data are considered in a separate section.

Chapter 4 considers information in relation to particular Indigenous injury prevention issues. We have selected topics that account for substantial fractions of Indigenous burden of injury, emerging issues and issues which are prominent for other reasons. There is overlap between this chapter and the previous one, as the examples cited depend on sources described in Chapter 3. However, the structure of this chapter enables closer attention to the nature of particular injury issues and consequent information requirements.

The final chapter includes a summary and discussion of findings.

We have sought to identify data sources and information resources relevant to Indigenous injury prevention but we are unlikely to have identified all of them. In part this is because we may not be aware of some sources. Another reason relates to the fact that Indigenous injury prevention is, on the one hand, a special case of injury prevention and, on the other hand, an instance of efforts to improve Indigenous health.

Apart from the national administrative data collections (deaths, hospital admissions) we have tended to focus on sources that are specific to Indigenous populations. However, injury in the Indigenous population is in many respects similar to injury in the wider community. Consequently, many injury prevention initiatives which do not have a particular focus on Indigenous people may nevertheless be beneficial in this segment of the population. We have mentioned some information sources related to injury prevention generally, but we have not attempted to do so exhaustively.

Similarly, initiatives directed to the improvement of Indigenous health status generally may well have a beneficial effect on injury occurrence. In the main, we have limited our attention to initiatives which are fairly directly and specifically related to Indigenous injury prevention.

We refer to research studies as well as routine data sources. The research literature is the principal information source concerning risk factors and the effectiveness of interventions. However, just as it is beyond the scope of this report to analyse data from routine sources, it is also beyond the scope of the report to conduct comprehensive literature reviews on the wide range of topics considered.

Australia's Indigenous population is diverse. It includes people living in urban, rural and remote areas, throughout the continent, a range of socio-economic and educational levels, and a spectrum of views. The pattern of injury varies with age and gender as it does within the non-Indigenous population. Injury experience, attitudes to injury and its prevention and other matters related to the subject of this report can also be expected to vary as much within the Indigenous population as any other topic. Where possible we acknowledge differences within the Indigenous population, but available information restricts capacity to do this.

2 Information and injury prevention

Background

The health and well-being of Indigenous Australians and injury are both subjects which became widely recognised as distinct issues for public health in Australia in the latter part of the twentieth century (Reid and Trompf 1991, Rivara and Grossman 1997a, Rivara and Grossman 1997b). Theory and practice continue to develop in both areas, with increasing understanding of the contribution of poverty, disruption and social policy to the burden of morbidity in Indigenous populations.

Overall, Indigenous Australians have extremely poor health status, and the gap between the health status of Indigenous and non-Indigenous people in Australia is larger than for comparable countries (Miller and Torzillo 1996, Reid and Lupton 1991). Indigenous Australians have lower life expectancy, greater morbidity and mortality, and higher unemployment and imprisonment rates than non-Indigenous Australians (ABS and AIHW 1999).

A full discussion of the recent history for Indigenous Australians is beyond the scope of this paper. However, it is necessary to consider Indigenous health issues in their historical and political context because the contemporary health status of Indigenous people is largely a consequence of colonisation and a history of policies which reflected the paternalistic attitudes prevailing at and beyond the period of early settlement. The following paragraphs provide a brief overview.

The ‘Protectorate’ system of the 19th and early 20th Century—which was imposed against a background of the frequently brutal expansion of European settlement—resulted in the wide-spread displacement of Indigenous people (National Inquiry into the Separation of Aboriginal and Torres Strait Islander Children from their Families 1996, Reid and Trompf 1991). ‘Protectionism’ was replaced with the policy of ‘Assimilation’ by the 1930s (Franklin and White 1991) which essentially consisted of the segregation of Indigenous persons of full descent and the acculturation of Indigenous persons of mixed descent.

With the 1967 referendum, the Commonwealth Government obtained power to legislate for Indigenous people (formerly this power only rested with the States), and the Office of Aboriginal Affairs was set up, which (among other things) funded the States to establish Aboriginal health units (Franklin and White 1991). With the government of the day backing a policy of Aboriginal ‘Self-Determination’, the practice of removing Indigenous children from their families rapidly declined due to the legal challenges of Aboriginal legal services. The Self-Determination policy, together with the activism of a growing number of Indigenous organisations, helped to bring Assimilation to an end (National Inquiry into the Separation of Aboriginal and Torres Strait Islander Children from their Families 1996).

By the time of the referendum, Indigenous people (as a direct result of policies such as were briefly described) were clearly the most disadvantaged group in Australia on every known health indicator—life expectancy, infant mortality and morbidity, perinatal mortality and morbidity, adult mortality and morbidity, and others (Franklin and White 1991). While morbidity was mainly due to extremely high rates of parasitic and infectious diseases (Miller and Torzillo 1996), Indigenous people also had a growing incidence of so-called 'lifestyle' diseases caused in part by inadequate diets - firstly imposed in the missions and reservations and later maintained by lack of resources - which had replaced their traditional diets (Franklin and White 1991).

In the thirty years since the referendum and, despite a number of policy initiatives, Indigenous health statistics remain grim. Miller and Torzillo (1996) catalogue the changes in morbidity and mortality in Indigenous people since the 1970's. As discussed by the authors, while mortality from infectious diseases, infant mortality and perinatal mortality have declined (although the rates are still very much higher than in the non-Indigenous population), mortality due to chronic non-communicable diseases and to accident and injury have increased substantially. In addition, substance abuse presents a major problem for many Indigenous communities and imprisonment rates are extremely high compared to the rates experienced in the non-Indigenous population (ABS 1999b). Citing Whimp (*Aboriginal Deaths in Custody Summary*), Miller and Torzillo (1996) report that Indigenous people are twenty-seven times more likely to be taken into police custody than non-Indigenous people. This is accompanied by high rates of poverty, unemployment, homelessness or inadequate housing and low levels of community infrastructure, as well as overt discrimination (Miller and Torzillo 1996).

While much remains unknown concerning injury (specifically) in Australia's Indigenous populations, enough is known to indicate that this issue intersects with other health and social issues. Injury is one of a range of health issues that have been found to burden Indigenous Australians more heavily than the non-Indigenous community. Drug use, particularly the use of alcohol, intersects closely with Indigenous injury. In varying degrees, factors such as socio-economic status and residence in remote areas account for part of the excess Indigenous burden of injury.

Overview of injury burden

As shall be discussed in the following chapters, national statistics of mortality and morbidity in Indigenous people tend to be unreliable and of inconsistent quality between jurisdictions and over time. However, available data are adequate to describe the general patterns of injury burden. While it is not the purpose of this document to report on the data, the following section cites publications in which such information can be found and presents an overview of findings.

An analysis of the available data for the period 1995–1997 shows that the mortality experience for Indigenous Australians differs substantially from that of the non-Indigenous population (Cunningham and Paradies 2000). For instance while 73% of all male deaths and 84% of all female deaths occur in non-Indigenous Australians aged 65 years and older, in Indigenous Australians 76% of males and 67% of females die before this age. As discussed in ABS and AIHW (1999), in terms of Person-Years of Life Lost (PYLL—a measure combining the absolute number of deaths with the number of years lost to premature death), there were over 50,000 PYLL in Indigenous persons in Western Australia, South Australia and the Northern Territory (1995–1997). This represents a rate of approximately 168 PYLL per 1,000 Indigenous males and 97 PYLL per 1,000 Indigenous females. In the non-Indigenous population, the rates were 38 and 19 per 1,000 males and females respectively.

Considering injury specifically, ABS and AIHW (1999) identifies injury as the second leading cause of death in Indigenous people. Standardised mortality ratios (SMR—calculated by dividing observed deaths by expected deaths as based on non-Indigenous population age- and cause-specific rates) indicated that injury-related mortality occurred at over three times the rate that would have been expected if the rates of the non-Indigenous population were applied to the Indigenous population.

Harrison and Moller (Harrison and Moller 1994) describe the major categories of injury-related death in Indigenous persons for 1990–1992. The major categories for non-intentional injury deaths were transport deaths, drowning and poisoning—nearly three times the rates experienced in the non-Indigenous population in the same period with far greater occurrence in the middle age groups. In terms of non-accidental injury deaths, rates of suicide were slightly lower in Indigenous people—although there is evidence that rates are increasing and this may be driven by social and historical factors (Hunter 1990, Hunter 1991d). As pointed out by Harrison and Moller (1994), the distribution of suicide among age groups was markedly different between Indigenous and non-Indigenous people. Rates for young adults are much higher and rates in later life were very much lower in Indigenous people. Rates of death attributable to interpersonal violence in the Indigenous population were 10 times the rate for non-Indigenous people. Rates were particularly high in young adults, but were very high for all age groups. Death from suicide and interpersonal violence occurring at young ages contribute greatly to the excess mortality burden of this community.

Hospitalisation data also suggest a large excess of injury-related morbidity in Indigenous people. Moller et al. (Moller, Dolinis et al. 1996) found the overall rate of injury-related hospitalisations identified as Indigenous in 1991–1992 to be about three times the rate for the non-Indigenous population, and to be higher for every major cause of injury except drowning. Rates of hospitalisation due to interpersonal violence in Indigenous males and (especially) females were found to be many times higher than in the non-Indigenous population.

A recent report examining episodes in hospital that ended in 1997–1998 for Indigenous people includes a section on injury (Cunningham and Beneforti 2000). Patterns are generally similar to those reported by Moller et al. (1996). Cunningham and Beneforti (2000) also note the need for improvements in identification of Indigenous patients admitted to Australian hospitals, with data from eastern jurisdictions tending to under-count Aboriginal and Torres Strait Islander people.

Ways in which information can contribute to injury prevention

Ways of thinking about information and using information for prevention are not universal. They vary depending on the perspective of the user, the stage of development of evidence and theory concerning a problem, the purpose at hand and other factors.

The prevention of injury among Indigenous people in Australia is an issue that can be seen from points of view including individual Indigenous people, local organisations, various service providers, State/Territory and Commonwealth government agencies and others.

The numerous ways of approaching the topic of Indigenous injury prevention, and the numerous other issues with which this one overlaps, present both a risk and an opportunity for this report. The risk is that in giving attention to the breadth of the issue and its relationship with other matters, treatment of Indigenous injury prevention will lack focus. The opportunity is that much that is done in related areas and under other titles may in fact contribute to Indigenous injury prevention.

In this report we have dealt mainly with material that refers directly to Indigenous injury and its prevention while including some material relevant to information for prevention in public health generally, and prevention in the two specific areas of Indigenous health and injury prevention. We have looked chiefly to recent Australian work on information for public health, with special reference to information for Indigenous health and information for injury prevention.

Further steps in towards considering how information can and should contribute to injury prevention in Indigenous communities require community involvement. For example, an aim of a National Indigenous Injury Action Plan might be to initiate discussion in Indigenous communities and within Indigenous organisations about the relative importance of injury prevention amongst other priorities, about whether the techniques and perspective characteristic of injury prevention appear to be applicable in this context, and related issues. Without such a process, an injury strategy might be irrelevant, or always remain on the back burner.

Though this report will deal with information sources, we would like to emphasise that focused attention also needs to be given as to how information should be presented so as to facilitate such a discussion.

For instance, based on extensive experience communicating health information in Aboriginal communities in the Northern Territory, Weeramanthri (Weeramanthri 1996) concludes that there is need to ensure that information is presented in a fashion which allows an open dialogue about its meaning. Health information which focuses on underlying causes for mortality (such as poverty or substance abuse) may be more meaningful, for instance, than information about direct causes (such as head injury incurred during a road crash).

In earlier work by the same author, a new system for the classification of cause-of-death which emphasised the underlying rather than direct causes of death is described (Weeramanthri and Plummer 1994). Re-categorising ICD-9 classifications into categories of: Land (diseases of the physical environment), Body (so-called lifestyle diseases), Spirit (diseases of poverty and cultural dislocation, including injury deaths) and Smoking-related, the authors calculated 'proportional mortality ratios' and fed back the results of a mortality analysis via pie charts based on these ratios at feedback sessions and a workshop. While no formal evaluation of this process was conducted, informal feedback suggested that health information presented in this way was relevant and useful to the participating communities, and more closely resonated with the participants' world view. These papers are also summarised in an AHMAC report on health information communication (Aboriginal and Torres Strait Islander Health and Welfare Information Unit 1997b).

Information for prevention in public health

It has long been acknowledged that information is an essential foundation for effective public health practice. In recent years, attention has been given to characterising ways in which information can contribute to public health, to assessing what information is available and what could be made available, and to developing tools to enable better use of information. We have taken this body of work as the main basis for a conceptual framework for considering information and the prevention of injury among Indigenous people.

The National Public Health Information Development Plan provides a framework for considering the types of information that may be required for public health practice (AIHW and NPHIWG 1999). The framework distinguishes four broad 'dimensions' of information required for public health practice:

Population health status

Determinants of health

Public health interventions

Infrastructure and inputs (expenditure, labour force, training)

These dimensions are related to the purposes for which information is required for public health, though they are not purposes themselves. The same report includes a list of purposes for public health information, but does not consider which particular types of information are needed to serve particular purposes.

This report focuses on a particular purpose: prevention of injury among the Indigenous people of Australia. Accordingly, we need to consider the ways in which information can contribute to achieving this. The report's purpose implies that useful information will be 'action-focused' and of benefit to the Indigenous community. That said, information can contribute to action for injury prevention in several ways.

From a public health perspective, information can be seen as serving four broad types of purpose for injury prevention:

1. **Identifying and describing injury problems**, as a basis for priority setting and for monitoring population injury burden.
2. Establishing how and why particular injury problems occur (i.e. determining **risk factors and mechanisms**), to guide the design of preventive interventions.

3. Determining the **performance of proposed preventive interventions**. This includes their efficacy (i.e. Do they work under ideal conditions?), field effectiveness, acceptability, cost, and other properties. The information provides a basis for deciding whether and how the interventions should be applied, and with what likely consequences. Decisions based on the information may be 'top down' (e.g. State or nation-wide prohibition of the sale of a hazardous product), collective (e.g. a community decision to restrict the local availability of alcohol), or individual (e.g. taking account of safety data when choosing a motor vehicle).
4. **Monitoring the implementation of preventive interventions** to assess the extent and quality of implementation in relation to planned, expected, or maximum possible implementation. There may be parallel monitoring of the occurrence of the health outcome of interest. (Variation in such indicators of health burden is a meaningful measure of the effectiveness of an intervention program only under some circumstances.)

Each of these purposes places particular demands on information sources, and the purposes generally cannot all be served by the same information source.

Injury description and monitoring

Problem identification and priority setting requires information on the extent and other characteristics of the condition of interest in the population of interest. The information is usually descriptive. This purpose is closely related to the 'population health status' information dimension listed above. Attributes of information sources that are particularly important for this purpose are capacity to identify case types of interest, richness of case information and representativeness. Meaningful monitoring of changes in injury rates can only be done if the data source can provide sufficiently reliable and precise estimates. Typical of sources that may be able to serve this purpose are mortality data, hospital separations data and clinic records. These are combined with relevant population data to calculate rates.

Risk factors and mechanisms

Selection or design of preventive interventions that are likely to be effective and without unacceptable side effects depends on reliable information on how and why injury problems occur. Obtaining necessary information often requires formal investigation. Methods include epidemiological studies to identify and quantify risk factors or protective factors for injury, laboratory tests (e.g. crash tests, tests of whether children can defeat a child resistant closure), and surveys (e.g. of community knowledge and attitudes concerning injury and its prevention). Descriptive information on the extent and characteristics of injury often provides clues concerning risk factors and mechanisms, but typically cannot go beyond this. Qualitative enquiry can be very helpful in exploring the context and underlying factors that led to a particular adverse event. Coronial enquiries are one form of qualitative enquiry used routinely following a sudden unexpected death, and have resulted in preventive interventions to avoid in future such deaths.

Performance of interventions

Some interventions intended to prevent injury are based on formal evidence of mechanisms and risk factors, and others are based on informal assessment of what seems likely to work. Whatever the origin of an intervention, a key issue is its performance in use. The basic question is whether the intervention is able to prevent occurrence, or reduce the severity, of the injury of interest (‘efficacy’). Other aspects of performance are the cost and acceptability of the intervention.

As with the identification of risk factors, establishing whether an intervention works generally requires formal investigation. The type of investigation depends on the nature of the intervention and other factors. While there is widespread agreement that it is desirable to evaluate the effectiveness of public health interventions, obtaining good evidence is often difficult or impracticable due to cost, ethics or the time required. Approaches to this dilemma are discussed below. We note here that only in unusual circumstances is simple monitoring of rates of injuries likely to provide sufficient evidence of the effectiveness of an intervention.

Implementation of preventive interventions

When interventions have been accepted as effective, and implementation commences, the fourth information purpose comes to the fore. This is to monitor the extent of implementation in relation to the maximum potential, and the quality of implementation. For example, after bicycle helmet use had been accepted as an effective intervention against head injury (legislative requirement to use them reflected and followed this acceptance), key issues were the proportion of cyclists who were using them, and whether they were being used in a manner that would be protective (e.g. correct size and adjustment of straps). Another example is immunisation: much attention is given to the proportion of a target population that has been immunised.

Monitoring occurrence of an injury of interest in the population also typically occurs during the implementation of preventive interventions. While such monitoring can provide useful information concerning the overall extent of control, monitoring alone usually cannot provide adequate information on the performance of a particular intervention or on the extent and quality of its implementation.

The extent of infrastructure and other inputs that are available can determine whether or not it is feasible to obtain information on a public health issue. Good quality information on health burden due to a particular problem may be expensive to obtain unless appropriate information systems happen to be available. The studies that are necessary to establish risk factors and determine the effectiveness of interventions are frequently expensive.

Evaluating evidence on public health interventions

Formal evidence of effectiveness, safety, and other characteristics have, in recent decades, come to be regarded as prerequisites for acceptance and implementation of clinical treatments, especially new ones.

The view that selection and use of interventions should be guided by evidence has extended to public health practice. While the principle is acknowledged widely, adherence to it is complicated by the difficulty of designing studies that can provide good quality evidence on many matters of interest while being technically, ethically and financially feasible.

Well-conducted randomised trials are generally regarded as providing a firm basis for deciding questions of cause and effect. This type of investigation is, for good reason, regarded as the preferred approach, when it can be used. However, this method may not be feasible or ethical for certain questions, and its use remains relatively uncommon in public health research, including public health injury prevention.

For example, in a review of randomised controlled trials examining the effectiveness of home visiting programs in the prevention of child injury and child abuse, Roberts et al. included 11 trials (Roberts, Kramer et al, 1996). A review of the effectiveness of interventions to prevent back injury in the workplace—a major cause of concern and cost—identified only seven randomised controlled trials (Karas and Conrad 1996).

Trials have been particularly uncommon concerning Indigenous health in Australia. Morris (Morris 1999), investigating the extent of use of randomised trials for studying Australian Aboriginal health needs, found only nine randomised controlled trials and five non-randomised controlled studies. All but one considered child health issues. Morris found no indication that use of randomised trials was increasing.

Even if trials concerning a particular question can be envisaged, or are under way, evidence may not become available for a considerable time. Often decisions and action cannot be deferred until optimal evidence becomes available.

Ethical issues and acceptability to prospective study subjects place further constraints on use of the approach, even when it is technically and financially feasible. For example, current evidence may be weak concerning the effectiveness of any intervention against a particular problem. In this situation, a trial comparing one or more interventions with no intervention might seem appropriate to investigators, but prospective subjects might be unwilling to participate unless assured that they will be offered an intervention.

Glasziou and Longbottom (Glasziou and Longbottom 1999) quote Muir Gray on the tension between action and evidence: ‘The absence of excellent evidence does not make evidence-based decision making impossible; what is required is the best evidence available, not the best evidence possible’. They go on to illustrate how this perspective can be applied in public health practice.

It has been argued that criteria and methods for assessing evidence concerning clinical interventions are not always appropriate for assessing public health interventions. Rychetnik and Frommer (Rychetnik and Frommer 2000) prepared a discussion paper on a schema for evaluating evidence on public health interventions as part of a process supported by the National Public Health Partnership (NPHP). The schema includes critical appraisal (using a method appropriate to the research type) as one of ten steps. The schema is intended to be general enough to be applicable to all types of public health interventions, including complex programs and specific actions. It encompasses evaluations of effectiveness, qualitative evaluation, process and economic evaluations. The next stage of the NPHP project will be case studies based on the schema.

A recent series of handbooks on preparing clinical practice guidelines from reviews of the evidence was recently published by the NHMRC. One of these handbooks describes a method of evaluating clinical evidence and applying this evidence to the development of clinical guidelines (NHMRC 2000). A three-step process is presented in which assessing, applying and presenting the evidence is described. While randomised controlled trials are advocated as the highest possible level of evidence, the authors do briefly discuss the problems specific to evaluating public health interventions where randomised controlled trial designs are often not feasible. The authors cite a method developed by the Canadian Advisory Committee on Community

Health in 1994, which advocated an adapted quality assessment process which enabled comparative studies to be included in reviews of the evidence for community health interventions. In addition, the authors argue that different aspects of the intervention's effect may be more appropriately assessed by different study designs. For instance, cohort studies may be preferable when studying the long-term effects of community alcohol-related harm reduction interventions. The process described in the handbook may also be applicable to public health problems.

Community interventions can be complex, typically including social processes as well as environmental, regulatory or informational components. Furthermore, they are sometimes applied in settings where populations and case numbers are small (e.g. remote Indigenous communities). Evaluation which combines quantitative and qualitative methods is particularly valuable in these circumstances.

Information for health of Indigenous people

Injury is a complex and multi-sectoral problem, situated within particular social contexts. Consequently, an approach to Indigenous injury prevention is appropriately considered from the perspective of a comprehensive public health framework.

Some underlying issues have an impact on Indigenous injury but may tend to be seen as lying outside the scope of 'injury prevention' within the health sector. These include:

> Factors such as poverty, social disruption, poor education attainment and issues relating to control in the domestic and professional setting are underlying factors which contribute to injury and a range of other morbidities. Many of these are documented in seminal publications such as the National Aboriginal Health Strategy and the Report of the Royal Commission into Aboriginal Deaths in Custody (Royal Commission into Aboriginal Deaths in Custody 1991).
>
> Higher morbidity and mortality in remote areas (AIHW 1998) is probably related to increasing proportions of Indigenous people in remote areas together with limited overall access to health and other services.
>
> The lack of infrastructure necessary for injury prevention across a number of sectors, particularly in remote communities. For example, health service infrastructure and expenditure has been noted to decline with increasing remoteness (Wakerman, Bennett et al. 1997). The 1999 Community Housing and Infrastructure Needs Survey (CHINS) identified that 69% of Indigenous communities are located 100 kilometres or more from the nearest hospital (ABS 2000b). Also, the general lack of social infrastructure in remote communities (including sporting and social activities) may limit the implementation of interventions such as the prevention of petrol sniffing among young Aboriginal people.

The most recent extensive review of information requirements concerning Indigenous health in Australia is the 1997 report *The Aboriginal and Torres Strait Islander Health Information Plan …This time, let's make it happen* (Aboriginal and Torres Strait Islander Health and Welfare Information Unit 1997a).

That report deals with a number of issues which apply to information for Indigenous injury prevention as well as to the more general context of Indigenous health. These issues are not revisited extensively in the present report but are taken as guiding principles. Particular attention is given to:

Rules concerning the proper use of Indigenous information.

Responsibilities to disseminate information in a suitable manner, including information to facilitate community action.

The main themes of the findings of the Plan are:

The need to achieve more complete and reliable identification of Indigenous status in information sources relevant to Indigenous health (e.g. mortality and hospital inpatient data collections).

Inadequacies in comparability and quality of data due to factors including inconsistent classification and collection, lack of quality control and lack of information management skills.

Inadequate protocols and practice concerning information ownership, use (including identifying and meeting community needs) and confidentiality.

The Plan specifies strategies, allocates responsibilities and sets mechanisms for monitoring progress in relation to three goals:

Develop a supportive base and infrastructure for improving Indigenous health information.

Improve the technical aspects required to facilitate quality Indigenous health information.

National commitment to implement recommendations to improve Indigenous information.

The Plan has a broad scope and does not deal in detail with information requirements for particular purposes (such as primary prevention) or conditions (such as injury). In the main it focuses on information concerning health status and health service utilisation.

The Plan is currently under review and while substantial work remains, progress continues to be made (J Shaw, personal communication):

> The National Public Health Information Development Plan recommends implementation of the aspects of the Aboriginal and Torres Strait Islander Health Information Plan that have to do with public health. It also recommends development of data collections that reveal the environmental and social causes of ill health in Indigenous communities (AIHW and NPHIWG 1999).

The recently released report of the House of Representatives Standing Committee on Family and Community Affairs inquiry into Indigenous Health (House of Representatives Standing Committee on Family and Community Affairs 2000) has a broad scope, and includes a chapter on research and data collection. In addition to restating the importance of resolving data problems that impede monitoring of trends in Indigenous health status, the report points to the need for information on matters beyond health burden. These include information on community involvement, and disadvantage, and a much increased level of applied research, tightly focused on achieving better health outcomes. The report also calls for more information from population surveys and a repeat of the National Aboriginal and Torres Strait Islander Survey (described in a later section).

National performance indicators for Aboriginal and Torres Strait Islander health were commissioned by the Australian Health Ministers' Advisory Council (AHMAC) in order to standardise Indigenous health status information across jurisdictions and develop a national database. The indicators are intended to monitor trends for various agreed upon components of health status, in categories ranging from life expectancy and mortality to categories dealing with utilisation of health services and resources. The first report against these criteria was recently released (National Health Information Management Group 2000), and has underscored some of the difficulties of differential reporting across jurisdictions and over time. For instance, injury-related mortality data was not provided due to 'poor data quality' for New South Wales, Victoria and Tasmania (although these States are reported to be undertaking steps to improve data quality). The authors reported that the ABS regarded the mortality and hospitalisation data from these jurisdictions available when the report was prepared, as well as data from Queensland, to be under reported. Indicators from the 'risk factor' category (including alcohol misuse) were also not able to be utilised in this first report due to lack of appropriate data.

The AIHW recently commissioned the Cooperative Research Centre for Aboriginal and Tropical Health (Darwin) to undertake a refinement process of the National Performance Indicators. While not available for citation at time of writing, this report has been considered by AHMAC and was endorsed in October 2000.

Information for injury prevention

Injury prevention and control is a National Health Priority Area (NHPA). A status report was published in 1998 (AIHW and DHFS 1998). This built on work during the period since the mid-1980s, when injury was formally recognised as a public health issue warranting national priority (Commonwealth Department of Human Services and Health 1994).

A set of national indicators for injury prevention and control has been adopted under the NHPA program (AIHW and DHFS 1998). The indicators deal mainly with burden of injury (mortality, hospitalisation). A few were intended to monitor protective factors (e.g. prevalence of smoke detectors in homes; completion of a water safety course by persons aged 10–16 years) or access to acute care and rehabilitation services.

Health sector activities concerning injury prevention generally take account of the activities in other sectors. In particular, road safety is the subject of substantial programs managed by the transport sector. Hence, although road injury (despite improved road safety) continues to be a major cause of serious injury, leadership concerning this aspect of safety rests with the transport sector. A similar situation prevails concerning certain other types of injury (e.g. occupational injury).

Injury prevention and control initiatives are diverse. A recent status report provides an overview of health sector involvement in each jurisdiction (National Public Health Partnership 2000).

A National Injury Prevention Action Plan has been developed by the Commonwealth Department of Health and Aged Care in conjunction with the Strategic Injury Prevention Partnership (SIPP) and a previous body, the National Injury Prevention Advisory Council. The Action Plan focuses attention on four topics for immediate action: falls by older persons, falls by children, child poisoning and drowning and immersion. It was endorsed by the National Public Health Partnership Group in November 2000.

The SIPP is an inter-governmental group convened under the auspices of the National Public Health Partnership. The group met for the first time in October 2000. The SIPP provides a mechanism at national level to oversee the implementation of the Action Plan and, more broadly, "a forum for national leadership in injury prevention in Australia" (SIPP terms of reference).

The current set of NHPA injury indicators includes two that are specific to Indigenous Australians. These indicators were designed to monitor the ratio of injury rates for Indigenous Australians in comparison to rates for the remainder of the population. One indicator considers injury mortality and the other considers injury hospitalisation.

Characteristics of injury that affect information requirements and availability include:

> The apparent 'obviousness' of cause-effect relationships. Consequently, case-based surveillance can provide descriptive information of injury mechanisms and circumstances of occurrence, as well as information on trauma. (Only some causal factors for injury are directly discernible in this way. Others require formal epidemiological investigation.)
>
> Injury occurs in a range of settings (roads, workplaces, homes, settings for sport and recreation, etc.) and prevention depends largely on actions taken by people in and responsible for these settings. Information about risk factors and on interventions and their effectiveness often involves collection in settings of occurrence.
>
> Relatively severe injury tends to come to the attention of clinical services, including general practitioners and emergency departments. A minority of cases, typically more serious, result in admission to a hospital. Deaths due to injury result from 'violent and unnatural causes'. As such, laws concerning death registration require that they are referred to a coroner, rather than being certified by a medical practitioner (limited exceptions apply to some deaths following a fall at home, and deaths due to late effects of injury). Hence, hospital data and deaths data are useful sources for information on the occurrence of serious injury.

3 Information sources

This chapter describes information sources that are or could be useful for Indigenous injury prevention, grouped according to the type of data provided and the level or scope of its operation. In the next chapter, by contrast, information sources are grouped according to particular subject areas within the scope of Indigenous injury prevention.

This approach results in some overlap between the two chapters. Duplication is minimised by providing the main coverage of each major source once and referring to this material in the other chapter, when necessary.

The purpose of this report is to describe and assess information sources, rather than to report the information presently available from them. Nevertheless, some information content is described, mainly for illustrative purposes.

National and large-area sources

The main routine, national sources of information that are used, or could be used, for Indigenous injury prevention cover the whole population, not only the Indigenous population. These are the main sources of routine national information available for injury prevention generally.

The fundamental point that distinguishes their use for Indigenous injury prevention (and for other Indigenous health matters) from other uses, is the identification of individuals within the collections as Indigenous. No matter what other virtues a data source has, if Indigenous status is not identified, or if identification is incomplete or unreliable, then the source is essentially useless for the purpose of preventing injury in the Indigenous population.

Recent years have seen much increased recognition of and response to the problem of poor identification of Indigenous people in major national data sources. The following sections on mortality, hospitalisation and population reflect this. As mentioned previously, some jurisdictions (notably Western Australia, South Australia and the Northern Territory) are generally regarded as having more satisfactory data on Indigenous population, mortality and hospitalisation, than do other jurisdictions (National Health Information Management Group 2000).

An even more basic issue is scope of collection. A collection that systematically omitted Indigenous cases would clearly be inadequate, whatever its capacity to identify whether included cases are Indigenous. For instance, while Indigenous status is identified in death registrations, it is not clear if deaths by Indigenous persons are registered as completely as is the case for the non-Indigenous population (e.g. due to remoteness, or for cultural reasons). This issue has had less attention than identification.

The main relevant sources are deaths data and data on admissions to hospitals. As many injury prevention purposes require the calculation of population-based rates, population data are a third source warranting attention. A new source of information is the survey of general practice activity, known as BEACH (Britt, Sayer et al. 1999).

As noted above, the quality of Indigenous identification in these sources has been the subject of much work in recent years. We have not sought to review this work in detail here. Rather, the following sections summarise the state of knowledge, with a focus on implications for use of these sources to prevent Indigenous injury.

Mortality and hospital morbidity data contribute mainly to the first of the four information purposes presented in Chapter 2: identifying and describing injury problems. Description can include monitoring of rates over time (but as noted in Chapter 2, this should not be confused with the more challenging task of evaluating whether an intervention has worked). Data from these sources can also be used in some analytic epidemiological studies (particularly using case-control designs).

The final type of information source considered in this section are sample-based population surveys. Unlike mortality and hospital morbidity collections, useful sample surveys tend to be specific to the Indigenous population. This is because only about two per cent of Australians identify as being Indigenous. Consequently, even large general sample surveys include small numbers of Indigenous people. The important consequence is that the resulting data concerning Indigenous people often have too much statistical uncertainty to be useful. Special measures can be taken to avoid this—i.e. constructing samples to include a larger proportion of Indigenous people than other people (‘over-sampling’). An essentially separate survey may be made of the Indigenous population, though this may have similarities to a survey of general population. On other occasions, an entirely separate survey is conducted, restricted to the Indigenous population.

The section of this chapter on population surveys considers major surveys whose scope includes Indigenous people throughout Australia, or in large parts of the nation, which are or could be useful for injury prevention.

Mortality data

Mortality data, including causes of death, have been available for Australia since before Federation. However, provision to identify Indigenous status has much more recent origin. The first year of inclusion of relevant items on death notification forms ranged from 1980 (in NSW) to 1996 (in Queensland) (ABS and AIHW 1999).

The Australian Bureau of Statistics has included an item concerning Indigenous status in the national mortality data file since 1988. As this file depends on source data from the States and Territories, only since 1996 has a complete national count of Indigenous deaths been a technical possibility. Despite this technical possibility, reliable counts are not yet available. Inadequate Indigenous identification in source records is the factor that has received most attention, and this is considered below. Other factors have been: incomplete use of the new version of the Queensland death information form (which allows for Indigenous identification) in 1996 and 1997; a technical problem during processing which led to under-identification of Indigenous deaths in New South Wales in 1997, and fluctuation in annual numbers of deaths registered in the Northern Territory due to build-up then clearance of a backlog (ABS and AIHW 1999).

The report *The Health and Welfare of Australia's Aboriginal and Torres Strait Islander Peoples* (ABS and AIHW 1999) is aimed at presenting health-related statistics obtained from a variety of sources in order to describe current health status on National and (where possible) State or Territory levels. The second edition in a planned series, this publication is also aimed at providing information for ongoing monitoring of trends. As discussed by its authors, however, problems with data quality continue to present problems for the monitoring of trends in the health and welfare of Indigenous peoples.

Nonetheless, the ABS and AIHW report is a very useful collection of information on Indigenous health statistics. In order to allow the known underestimation of deaths in Indigenous people (due mainly to the failure to correctly identify Indigenous status on death notification forms), a method of calculating a ratio of registered to expected deaths was used to generate values presented in this report. The ratio provides an estimate of under-reporting by comparing the number of registered Indigenous deaths with the number expected based on ABS experimental projections of mortality rates. As pointed out by the authors, however, the projections and, therefore, the ratios are extremely sensitive to the quality of the data used to calculate them. Nonetheless, they may still be useful in estimating the potential extent of incorrect identification of Indigenous status in death registrations. (See also Cunningham and Paradies 2000, and discussion below.)

Data on mortality by cause of death is regularly published by the Australian Bureau of Statistics (ABS 1999a). The annual report publishes statistics and indicators for registered deaths across Australia. The publication provides information on underlying cause of death and more recent issues also present data on multiple causes of death. Underlying cause of death for Indigenous people in Australia is also presented separately for South Australia, Western Australia and the Northern Territory and (in the latest issue) Queensland. In a recent validation study of Aboriginal mortality statistics in the Northern Territory (Weeramanthri 1997), it was concluded that these data were of relatively good quality and of sufficient standard to use in the development of public health policy. As mentioned previously, the quality of data collected on Indigenous mortality in several jurisdictions was not yet considered by the ABS to be of publishable standard. Given that this information is regularly updated, collections of these publications form a very valuable source of information. However, the potential remains limited by the deficiencies discussed elsewhere in this section.

In addition to these regular reports, an 'Occasional Paper' published jointly by the ABS and the Australian Institute of Health and Welfare focuses on the mortality of Indigenous Australians (Anderson, Bhatia et al. 1996). The paper provides age-standardised information on trends in death rates for all and specific causes as well as providing Standardised Mortality Ratios (SMRs) in relation to the non-Indigenous population. Described as the first paper to be produced by the Aboriginal and Torres Strait Islander Health and Welfare Information Unit, the preface indicates that this report will be updated on an ongoing basis.

An updated version of this 'Occasional Paper' was published in 2000 by the Australian Bureau of Statistics (Cunningham and Paradies 2000). This paper reports on deaths in the three year period 1995–997, and describes ABS methods for assessing the completeness of mortality data (this is the method used in ABS and AIHW 1999). As noted above, the method is based on comparing observed numbers of deaths identified as being Indigenous in a particular place and period to an expected number for the same place and period. The expected value is derived from information about the size of the population being considered, its composition (in terms of age- and sex-specific groups), and mortality rates for those groups. The process is greatly complicated by uncertainties concerning mortality rates and the size and composition of the Indigenous population. Cunningham and Paradies describe the method in considerable detail, describe and comment on its limitations, and suggest projects that could improve estimates.

Cunningham and Paradies conclude that 'data quality remains a critical issue in the assessment of Indigenous mortality'. As in most previous publications, the data that they used was largely restricted to that concerning deaths in the Northern Territory, Western Australia and South Australia, reflecting the assessed differences in estimated coverage in the period of interest. Under-identification continued to occur in all jurisdictions. Though observing that their findings concerning Indigenous mortality in the three reported jurisdictions were similar to previous findings, doubts about data quality led the authors to opt not to present trend data.

Variation in the quality of mortality data collected across jurisdictions and over time continues to be the key important barrier to meaningful assessment of trends in Indigenous injury mortality. However, available data are able to provide a general picture of patterns of Indigenous injury mortality, and approximate differences from injury mortality in the general population (e.g. Table 4.19 in Cunningham and Paradies 2000). It is noteworthy that the pattern of mortality is broadly similar whether assessed on the basis of data for the mid-1990s and restricted to the three jurisdictions assessed to have the best data, or on the basis of early 1990s data for all available jurisdictions (Harrison and Moller 1994).

Routine mortality data provides little detail on the mechanism and circumstances of occurrence of injuries. If it is to serve injury prevention, data collection should be aimed at enabling action and this planning requires discussion with Indigenous organisations. Greater depth of information (especially for underlying cause-of-death) may be required in order for these data to more helpfully inform these discussions.

The mortality data provided by the Australian Bureau of Statistics depend on the source data provided to that agency by State and Territory Registrars of Births Deaths and Marriages. This, in turn, depends on the information provided by coroners (see below), medical practitioners (who certify the causes of most deaths) and relatives or friends of deceased people. In general, the attributes (such as completeness, reliability, extent of case information, timeliness, etc.) of later stages in this process are constrained by those of the earlier stages. Hence, initiatives designed to increase the scope, reliability or timeliness of mortality data typically have to change processes and behaviour at several levels, in eight jurisdictions. This tends to be complex and time-consuming.

The mortality data system serves a range of legal and administrative purposes. As such it differs considerably from registers designed to serve specific purposes of health research and monitoring (e.g. cancer registries).

The mortality data system dealt with the registration of over 127,000 deaths in Australia in 1998. Of this total, 2,114 deaths (1.7% of all deaths) were recorded as being of Indigenous people. About one-sixth of these (n=358; 0.3% of all deaths) were recorded as being due to an 'External Cause of Injury and Poisoning' (injury deaths). The proportion of all deaths that were recorded as Indigenous and due to an injury was lower than the national average of 0.3% in New South Wales, Victoria, Tasmania and the Australian Capital Territory. Only in the Northern Territory (8.5%) did this category make up more than 0.5% of deaths registered. Deaths from all causes where the person was recorded as being Indigenous ranged from 1 per cent or less in New South Wales, Victoria, Tasmania and the Australian Capital Territory to 3.4% in Western Australia and 47.6% in the Northern Territory.

Even allowing for erroneous non-identification of some people who died as being Indigenous, it is clear that only the one-in-five Indigenous deaths that occur in the Northern Territory are registered by a system for which Indigenous cases are common. Elsewhere, Indigenous cases are relatively rare in proportion to total registered deaths, presenting a problem akin to identification of needles in a haystack.

The low prevalence of this class of case in most death registration systems is one of the factors complicating resolution of the problem of under-identification.

All reports that we found concerning the measurement of Indigenous mortality focused on evaluation and improvement of identification by the routine mortality data system. Other approaches are conceivable, but we found no mention of them. For example, registration of deaths of Indigenous people could, in principle, be made the subject of a special purpose register, akin to registers of particular diseases, such as cancer.

Mortality data: coronial information

Nearly all deaths recorded as being an Indigenous person and attributed to an ‘external cause of injury or poisoning’ are certified by a coroner (97% in 1998—NISU, unpublished mortality data). Consequently, information from coroners’ records is potentially a valuable source of information concerning injury mortality in the Indigenous population.

Furthermore, a coroner certifies over one in three of all deaths that are recorded are Indigenous people, compared with fewer than one in seven of other deaths, suggesting the potential importance of coroners’ records for information on Indigenous mortality more generally. (Weeramanthri (Weeramanthri 1997), reported that 34 per cent of adult Aboriginal deaths were reported to a coroner.)

Studies based on coroners’ records have confirmed that they are a rich source of information that is useful for investigations of injury mortality, but access to this information has been impeded by limited indexing, the lack of electronic means of access and differences between jurisdictions (NOHSC 1998).

During the 1990s, coroners, researchers and others cooperated to plan and initiate development of what has become known as the National Coronial Information System—NCIS (Moller, Dolinis et al. 1996). Implementation began after the endorsement by the Australian Coroners’ Society in 1997 of a proposal by the Monash University National Centre for Coronial Information (MUNCCI) and accelerated with the establishment in 1998 of a Coordinating Committee of senior representatives of Commonwealth, State and Territory agencies. The NCIS is expected to commence providing data during 2000/2001. Further information about the NCIS can be obtained from the NCIS web site: **www.vifp.monash.edu.au/ncis/**

The NCIS data set includes an item to record Indigenous status (Lightfoot 2000). The completeness and reliability of the information obtained will depend on the prior processes undertaken by police, coroners and their staff to seek evidence as to whether a deceased person identified as Indigenous. Given the importance of this item for the purposes discussed in this report, assessment of these underlying processes and their effectiveness warrants high priority. NCIS has commenced a project to work with police agencies to improve identification during police investigation of deaths (J Lightfoot, personal communication).

Hospital in-patient morbidity data

Summary data concerning cases resulting in admission to a hospital have been available for various periods in the Australian States and Territories. Items to enable identification of Indigenous status were included at different years in different jurisdictions, ranging from 1976 (in the Northern Territory) to 1997 (in Tasmania) (ABS and AIHW 1999).

Lack of comparability and variable quality severely hampered meaningful national compilation of State and Territory hospital data until the 1990s. There have been recent and promising efforts to improve the data. In 1989, the first version of the *National Health Data Dictionary* was published and has been subsequently revised, generally annually. The ninth version is the latest at the time of writing (AIHW 2000c). The *National Health Data Dictionary* describes National Minimum Data Sets (NMDSs) which are aimed at promoting consistency and completeness of data collection within health institutions across Australia, and the ready availability of these data for use as health information. Essentially, an NMDS is an agreed set of data of general relevance (e.g. demographic data, including Indigenous status) and of relevance for particular purposes (e.g. injury due to external causes). The *National Minimum Data Set — Admitted patient care* is the NMDS specifying data about episodes of care in a hospital that all jurisdictions have agreed to provide to the AIHW annually, for compilation into a national collection. Summary data from this collection are published by the AIHW and are used for other purposes.

Information about the data (i.e. data standards, the *National Health Data Dictionary*, etc.) are accessible via the Internet, through the AIHW 'Knowledgebase'*. Provision of access to some aggregated data through the AIHW Web site was scheduled to commence in January 2001 (AIHW 2000c).

The most recent edition of the AIHW report on nationally aggregated hospital morbidity data (AIHW 2000a) covers episodes which ended during 1998–1999, the period during which Version 7 of the *National Health Data Dictionary* was current.

This report describes the hospital-level and patient-level activity of Australia's hospitals according to data supplied by State and Territory health authorities to the National Public Hospital Establishments Database and by the National Hospital Morbidity Database. The report presents information on diagnoses, procedure and external cause using the International Statistical Classification of Diseases and Related Health Problems, 10th Revision, Australian Modification (ICD-10-AM), a system which has been adopted by all States and Territories from July 1999 (NCCH

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* For information about the Knowledgebase see: www.aihw.gov.au/knowledgebase/index.html

1998). During 1998–1999 ICD-9-CM continued to be used in four States. For the purposes of the report, these data were translated to ICD-10-AM.

The report on hospitalisation in 1998–1999 contains a section on the demographic profile of patients separating from hospital. Once again, the quality of data is reported to be variable across jurisdictions—although improved in recent years—and caution is recommended in interpreting data on Indigenous status as presented in the report. The document includes brief summaries of reports from States and Territories on efforts to improve ascertainment of Indigenous status, some of which refer to efforts to comply with the *National Health Data Dictionary* standards for Indigenous status identification.

Hospital Statistics for Indigenous Australians in the previous year, 1997–1998, are the subject of a detailed ABS Occasional Paper (Cunningham and Beneforti 2000). This paper demonstrates the present value of hospital separations data as a source of information about the health of this part of the Australian population, and carefully describes its limitations. As for mortality data, the chief limitations concern data quality, especially the quality of Indigenous identification. For most jurisdictions, very limited information is available on the completeness of identification in hospitals. The exception is the Northern Territiory, for which there is evidence that ascertainment was over 90% at all 5 public hospitals in 1997 (Condon et al. 1998 cited in Cunningham and Beneforti, 2000). A recent pilot study provides the best evidence for the rest of Australia (Gray 1999; see below).

The use in all jurisdictions of the NMDS and the ICD-10-AM provide a good basis for the quality and comparability of hospital morbidity data across jurisdictions into the future, provided Indigenous identification is adequate. It is also important that improvements in identification of Indigenous status in hospital data coincide with improvements in quality of other Indigenous data, especially population estimates. Hospital separation data of the highest quality would have greatly diminished value if information about the Indigenous population is not of similar quality. Pending achievement of uniformly high quality Indigenous ascertainment, regional or hospital-specific quality estimates would allow better use to be made of available information.

A recent publication reports on the development, piloting and evaluation of a methodology for assessing the completeness of the identification of Aboriginal and Torres Strait Islander people in hospital separation data (Gray 1999). The pilot project involved comparing data on Indigenous status as recorded by selected hospitals in South Australia, Northern Territory, the Australian Capital Territory , Victoria and Queensland (11 institutions were included in the study) with data obtained from patient interviews. The pilot study found large institutional-based variations in the accuracy of hospital records—especially for correct recording of Indigenous status, but also for other demographic variables. In general, the accuracy of reporting appeared to be positively correlated with the population proportions of Indigenous persons in the catchment area of the hospitals. However, instances were observed in hospitals whose catchments had a low proportion of Indigenous people, yet achieved accurate reporting.

Based on the methodology of the pilot study, the report also provides guidelines to assess the quality of identification of Aboriginal and Torres Strait Islander people as an ongoing process. The report suggests a method for applying a correction factor to hospital data in order to adjust them to account for under reporting. While this process may potentially improve the accuracy of hospital recording of Indigenous status in the future (while requiring a great deal of commitment and effort on the part of each institution), the limited and variable quality of current information will constrain the applicability of this data source for national health policy purposes, particularly those requiring monitoring of trends. Nonetheless, on the basis of the recommendations of this report, all jurisdictions are to be asked to make assessments of the recording of Indigenous status in their hospital records by the end of 2001 (ABS and AIHW 1999).

The completeness of Indigenous identification within the BEACH sample is unknown.

Other morbidity data

Mortality and in-patient morbidity data collections can provide information on the more severe part of injury morbidity. Many cases of injury that do not result in death or admission to a hospital nevertheless attend a general practitioner or other provider of primary health care services. Sources of information about these cases are less well developed than sources covering deaths and admitted patients. This limitation is general, not restricted only to Indigenous people.

A recent development is the survey of general practice activity known as 'BEACH'. A sample of about 1,000 practitioners per year each provide information about 100 consecutive patient encounters. Questions for each sampled encounter include 'Aboriginal? Y/N' and 'Torres Strait Islander? Y/N'. Findings of the first full year of operation of BEACH have been published, and this report is the basis for the following summary of relevant findings (Britt, Sayer 1999).

In 1.2% of encounters (n=1,162) there was a positive response to one or both of the questions concerning Indigenous status. These cases were found to differ from overall patterns in several respects. The Indigenous cases tended to be younger than others, the most marked differences being the large proportion of cases at ages 25–54 years and the small proportion in older age groups. Compared with non-Indigenous cases, Indigenous people recorded by BEACH were:

- less likely to live in a capital city and more likely to live in a rural or remote area;
- more likely to live in Queensland, Western Australia, South Australia or the Northern Territory;
- more likely to hold a health care card; and
- more likely to be new to the general practice at which they were seen.

Information collected routinely by BEACH includes the nature of the diagnoses or problems dealt with during an encounter. Acute trauma was among the most frequent new conditions seen overall (at least 4%), but the report does not provide information on reason for encounter for Indigenous cases. The standard BEACH data set includes very little information on the external causes of injury.

About one-third of participating general practitioners reported seeing at least one Indigenous person among their 100 sampled episodes, including five who saw 20 or more. The authors considered that the latter five practitioners might have included services provided in their capacity as practitioners at Aboriginal Medical Services (AMSs). Allowing for this, they estimated that about 1 million non-AMS general practice consultations with Indigenous people occurred in 1998–1999.

BEACH has shown that general practice is an important setting for the provision of primary health care services to Indigenous Australians, and has potential to provide some information on the nature of conditions seen. However, other sources of primary health care, notably AMSs, may be relatively more important for Indigenous Australians than for the general community (Cunningham and Beneforti 2000).

Population estimates

Improved assessment of rates of injury and levels of service requirement depend on the availability of accurate population data—current and projected. In 1998, the ABS published projections to 2006 for the Aboriginal and Torres Strait Islander population, based on estimated 1996 population data (ABS 1998). This report is the second of its type and provides projections for the size, structure and distribution of future Indigenous populations. The authors refer to these projections as ‘experimental’ due to the uncertain quality of data related to Indigenous births, deaths, internal migration and changes in the propensity of individuals to identify as Indigenous on a census form. Error in estimates may not be uniform. For example, underestimation might be relatively severe for young males and increase in propensity to identify as Indigenous might have been relatively large for urban-dwellers. The projections are based on assumptions about the accuracy of these data and about rates of change for each parameter. This report provides projections for differing assumptions of propensity to identify as Indigenous—not mentioned in the earlier report (ABS 1996) but which appear to have greatly affected its projections of population size. The sensitivity of the projections to other components of population growth (fertility, mortality and migration) is discussed in the later report, but projections taking account of changes in these assumptions are not presented.

Despite these uncertainties, population projections are clearly valuable for planning of interventions into the future. Regularly updated projections are also likely to lead to further refinements. As described in an earlier section, these data may also be useful in estimating the level of under-identification of Indigenous status in death registrations (ABS and AIHW 1999).

A high level of mobility is a well-noted feature of Indigenous communities and forms a major complicating factor in interpreting currently available population estimates, especially for studies at local or regional level. In a recent longitudinal study of inter- and intra-community mobility in one remote community in Central Australia, Warchivker et al. (Warchivker, Tjapangati et al. 2000), found that when ‘potential service population’ is considered (a figure which includes absentees, but not visitors at the time of the survey), the resulting number is consistently greater than ABS census figures. Up to 35% of this community could be considered ‘highly mobile’. As discussed by the authors, this high level of mobility has serious implications for service delivery. This would clearly also have implications for both the implementation and evaluation of community-based injury prevention interventions, and suggests a need to distinguish ‘health service population’ (i.e. estimations based on movements of people geographically and over time) from ‘resident population’ (based on the static ‘snap-shot’ provided by the population censuses).

Population surveys

Unlike general mortality and hospital data collections, population survey techniques offer a method for collecting information specific to the Indigenous population. Two large national surveys are considered in this section. We also describe a survey of living conditions.

In 1995, the ABS published the initial results of the first nation-wide survey of Aboriginal and Torres Strait Islander people (NATSIS) (ABS 1995). Over 15,700 Indigenous persons from remote, rural and urban areas across Australia were surveyed in 1994, and this publication presents the first results. Information is presented according to the categories of family and culture, health, housing, education and training, employment and income, and law and justice. The scope of the information in each category includes current and past experiences, and attitudes and beliefs. The range of information obtained from the survey is comprehensive, with the content determined through a consultative process that included strong representation from Aboriginal and Torres Strait Islander organisations. The majority of the information relevant to this report is on health and welfare. However, information about attitudes to family violence and about perceptions of the way police deal with family violence is also presented. The initial report is a useful data source in itself, and indicates that future publications would be forthcoming. The ABS has recently announced, however, that the NATSIS is to be replaced by the National Health Survey (containing an Indigenous Supplement) and the Indigenous Social Surveys as described below. According to the ABS (ABS 2000a) these surveys are aimed at satisfying a broad range of information requirements and are expected to have the capacity to respond to emerging information needs.

The supplementary Urban Aboriginal and Torres Strait Islander 1994 household survey (National Drug Strategy 1995) used methods and questions similar to those used for the 1993 National Drug Strategy household survey, although only Indigenous people living in urban areas were surveyed. The content focussed on drug-related issues, topics including perceptions of drugs in the community, awareness of the health risks associated with alcohol and tobacco, personal use of licit and illicit drugs, acceptance of drug use, exposure to (and participation in) alcohol-related crime, impact of drug use (e.g. services used and days missed), information available, policy support and campaign awareness. This report is described in more detail in the next chapter.

The background to the supplementary survey, as described in the report, implies that it will be repeated. It was conducted in response to a call of the Royal Commission into Aboriginal Deaths in Custody for an ‘ongoing program of data collection’ and its purposes included provision of ‘reliable baseline data’. Although the National Drug Strategy household survey was repeated in 1998, the supplementary survey of Indigenous people has not been repeated to date. However (as described below), the Indigenous General Social Survey is scheduled to be conducted by the ABS in 2002 and may produce some data on these issues.

The ABS conducted the National Health Survey (NHS) during 1995–1996. Around 54,000 people from all age groups were interviewed about their health and related topics. The NHS is important because of its large sample size and, since it is likely to be repeated, it provides potentially useful baseline data for the analysis of trends in the health status of Australians in general, health service utilisation and risk behaviours. Recently, selected comparative data about the health of Indigenous and non-Indigenous respondents of the NHS were published (ABS 1999c). As reported by the authors, the NHS Indigenous sample was boosted by a supplementary sample of approximately 1,000 (bringing the total sample to 2,000) in order to increase the power of the survey for this relatively small segment of the Australian population.

The range of information presented in this report is relatively extensive, covering health service utilisation, lifestyle factors (such as smoking and alcohol use and sun protection measures) and health status (including conditions reported to be the result of an accident, incident or exposure to a harmful factor). Due to concerns about the quality of data for Indigenous persons living in remote areas, information from all remote area respondents were excluded from the analysis (461 Indigenous respondents and 78 non-Indigenous respondents). Therefore, only data collected for non-institutionalised Australians living in population-dense rural and urban areas are presented in this report. According to the 1996 Census (ABS 1999d), around 30% of all Indigenous people reside in ‘major urban’ areas—defined as areas with populations of 100,000 or more. Around 42% of Indigenous people are thought to reside in ‘smaller urban’ areas (with total populations of between 1,000 and 99,999 people) and around 28% in rural and remote areas. Depending on the strictness of adherence to these definitions of area category, exclusion of data for Indigenous persons living in remote areas may impact on the generalisability of the NHS analysis.

The Community Housing and Infrastructure Needs Survey (CHINS), first conducted in 1999, has a scope that extends to some risk factors for injury (ABS 2000b). Examples are experience of flooding, type of rubbish disposal, and accessibility of health care services. A second survey of this type, designed to provide data comparable to the first, is scheduled to be undertaken in 2001 (J Shaw, personal communication).

As has been discussed, the ABS recently announced its commitment to a range of initiatives aimed at increasing the quality and availability of statistics about the Indigenous population (ABS 2000a). These initiatives include the introduction of a program of surveys, which will regularly collect data from Indigenous persons and communities (the ‘Indigenous Survey Strategy’). The Strategy centres on an Indigenous General Social Survey, to be conducted every 6 years, commencing in 2002. The Indigenous sample will be supplemented in the first two instances of the new triennial National Health Survey (the first will occur in 2001) and in alternate NHSs thereafter. The Indigenous sample will also be supplemented in some other household surveys, though no particular surveys have been nominated. Other components of the Strategy concern the labour force, and community housing and infrastructure.

Local and regional sources

This section reviews sources of data that are used for Indigenous injury prevention, or could be used for this purpose, and have local or regional scope. We have focused attention on sources which are fairly specific to injury in Indigenous populations.

Indigenous communities are diverse in terms of social and environmental circumstances, patterns of injury and responses to these. Many local information sources are not documented or published, complicating assessment of their number and type (they appear to be uncommon). The task of systematically tracking down unpublished local sources was beyond the scope of this report. However, the following examples are indicative of the types of information generated in local and regional projects.

These sources should not be overlooked as potentially valuable sources of information about patterns of injury, about preventative responses, and about the processes whereby communities respond to injury.

Intervention program records

A project aimed at developing a low-cost computerised database of 'Night Patrol' and 'Warden' schemes is currently being conducted jointly by the National Drug Research Institute at Curtin University of Technology, Tangentyere Council, Julalikari Council and the Kununurra-Waringarri Aboriginal Corporation (Chief Investigator, Dennis Gray). By providing a system with which to monitor and evaluate programs, the stated objectives of the database are to:

> Enable patrols and Warden projects to meet their objectives;
>
> Assist organisations to improve the quality of services provided;
>
> Meet accountability requirements of both the communities involved and of funding agencies; and
>
> Facilitate comparability of outcomes between organisations.

'Night Patrols'—patrols of the community aimed chiefly at reducing the incidence of police intervention by minimising alcohol-related conflicts and the injuries often associated with such conflicts—are becoming increasingly utilised in Indigenous communities across Australia, but formal evaluations of their effectiveness have not yet been published. The database project is intended to be a 'stand-alone' package which could then be accessed by all other Night Patrols. It is envisioned that the database will store standardised information collected from the Patrols, with the content to be determined following negotiation with the various stakeholders.

Hospital records

In another as yet unpublished project, assault-related admissions to the Alice Springs Hospital were investigated (by Ged Williams) in response to the growing perception that the incidence of hospitalisations due to assault was rising as was the degree of injury of young Indigenous females due to assault. Williams extracted data on injury admissions with documentation of assault. Data on assault-related presentations to the Emergency Department were also collected, but these data (based on subjective assessments by staff) were found to be less reliable than admission data based on DRGs. Williams was able to demonstrate that the incidence of assault-related hospitalisations was 15 times the national rate in Alice Springs, 22 times the national rate for Indigenous persons in Alice Springs, but 41 times the national rate for female Indigenous persons in Alice Springs.

The process for extracting hospitalisation data was fairly laborious, as it involved extracting information from the inpatient system one report at a time (on over night runs) before collation and analysis. While the data collected through this process is valuable in its own right, the investigator hopes to streamline the process of data collection in order to develop a more sophisticated system of reporting in the future.

Records of attendance to hospital emergency departments are another source that has not yet been used widely to study injury among Indigenous people. Emergency department information systems vary between regions and hospitals and only for some hospitals is information collected about the circumstances of occurrence of injury events. Little is known about the reliability with which records concerning Indigenous people are identified among other records in these systems. A validation study at one hospital in New South Wales (Shoalhaven) found ascertainment to be less than fifty per cent. The same investigation found indications of complex factors determining whether an individual was recorded as being Indigenous, including perceptions that to do so might lead to different management (J. Moller, personal communication).

Clinic records

Clinic records within community-controlled medical services may be another source of health information, presently at local level (Aboriginal and Torres Strait Islander Health and Welfare Information Unit 1997b). Data obtained in the course of studies in particular clinical settings are a related type of source. However, the potential value of this information for injury purposes is largely unknown and the 1997 ATSIHWIU report suggests that summary reports generated by some of the medical services contacted at that time were not useful to the services for population health purposes. The report indicated that information collected by other community controlled medical services was accessible and potentially valuable for the planning of public health campaigns. However, as with other clinical records, access is restricted. In addition, there are particular sensitivities concerning the use of these records in ways that are not seen to be of direct benefit to the source communities.

Nevertheless, such work can be done where good relationships are developed and maintained.

A study of injury in small remote Indigenous communities on Cape York (Gladman, Hunter 1997), utilised detailed clinic record audits in one of the communities studied. The method used allowed for analysis of principal injury and external cause as well as alcohol as a potential contributory factor. Findings prompted subsequent responses in that region, and the study method has influenced the planning of projects in other communities (e.g. Bourke and Shoalhaven in NSW).

The Indigenous Health Program at the University of Queensland has developed collaborative research and education links with a number of Indigenous communities (refer to the Program's web site at www.acithn.uq.edu.au /ihp/index.html). One ongoing project of the Indigenous Health Program is the Woorabinda Pub Injury Intervention which was initiated in collaboration with the Woorabinda Community Council (C Canuto, personal communication). Briefly, the intervention involved reducing the opening hours of the local hotel which was originally opened seven days a week between 10am and 10pm. From August 1998, the daily opening hours were reduced and the pub was closed all day on Sundays. In January 1999, the hours were reduced even further to the extent that the pub operated more as a 'takeaway', rather than a 'sit-down' establishment.

Medical records from the Woorabinda Clinic have been continuously reviewed for self-reported cases of assault to monitor the impact of the Pub Injury Intervention. This process is relatively laborious, since it relies on manual data extraction on a record-by-record basis, but has been ongoing for three years to date and is expected to continue into the future. This Project and its evaluation is the subject of several forthcoming papers. These results, and the ongoing data collection associated with the project, provide a good example of the way in which information from clinic records can be directly relevant to efforts to prevent injury in the communities from which they are sourced. As well, the Project serves to underscore the value of building and maintaining collaborative partnerships between health service providers and community groups and organisations.

In addition to the potential of clinic based records, retrieval and ambulance records may provide additional client-based sources of information. For instance, in an evaluation of an alcohol restriction intervention in a small Indigenous community in Western Australia, Douglas (Douglas 1998) utilised emergency Royal Flying Doctor Service evacuations as one outcome measure of changes in alcohol-related injury.

Special studies and collections

Department- and institution-based collections and special studies potentially provide another source of information, although institutional variations in data content, format and quality may present problems for comparisons between agencies. A report by the Aboriginal and Torres Strait Islander Health and Welfare Information Unit described some of the collections which identify Indigenous status and may therefore be useful in investigating Indigenous health issues (Aboriginal and Torres Strait Islander Health and Welfare Information Unit 1997a). However there is little indication of the quality and utility of the particular sources mentioned.

The report also describes the development of the Community Health Information System (CHIS), for the collection of data on community health service utilisation. The system was reported to be in development with the partnership of health departments in New South Wales, South Australia, Queensland and the Australian Capital Territory.

In the same vein, a sophisticated Primary Care Information System (PCIS) is being introduced in the Northern Territory. This includes unit record numbers that are common for health services throughout the Territory, making possible better studies of health service utilisation. Developed from earlier prototypes and utilised primarily in remote Indigenous communities, the PCIS has also been designed to store data potentially useful for monitoring the impact of community-based programs for prevention.[†]

Computer Assisted Telephone Interview (CATI) surveys on health matters are now being conducted in all jurisdictions and these surveys include questions designed to identify Indigenous respondents. The adequacy of Indigenous identification through such surveys has been uncertain. Consultations about CATI surveys undertaken as part of refinement of national performance indicators for Aboriginal and Torres Strait

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[†] Source: Primary Care Information System brochure supplied by the Territory Health Services (Northern Territory Government); November 2000.

Islander health status, led to a conclusion that these surveys are achieving levels of Indigenous identification higher than had been anticipated (T Barnes, unpublished).

Queensland's annual Regional Population Health Status Surveys are briefly described in the 1997 ATSIHWIU report. Also identifying Indigenous respondents, the surveys interview approximately 800 randomly sampled people in rural and remote areas. While injury-specific data is not collected in the survey, the collection is potentially a valuable source of information for analysis of trends in health status.

Secondary sources

The preceding sections of this chapter deal with primary sources of information and reports based on them. For some purposes to do with Indigenous injury prevention, secondary sources of one form or another will be as useful or more useful than primary sources. In addition to broad reports and reviews—which have been included throughout the body of this report—important secondary sources of information are indexes to, or repositories of, relevant information.

In keeping with the scope of this report, we have restricted attention to indexes that are fairly specific to Indigenous injury prevention. We have not considered general purpose and widely known sources that may contain some relevant material (e.g. Medline, *Australia's Health*).

The most comprehensive secondary source of material relevant to Indigenous health, is available at the Internet site of the 'Australian Indigenous HealthInfoNet' (www.healthinfonet.ecu.edu.au/). This site is a readily accessible resource of published, unpublished and specially prepared material about Indigenous health issues collated from a wide variety of government and non-government sources. Initially established as the National Aboriginal and Torres Strait Islander Health Clearinghouse, the HealthInfoNet is maintained by a team based at Perth's Edith Cowan University and receives funding from various sources including the Commonwealth Department of Health and Aged Care's Office for Aboriginal and Torres Strait Islander Health. In addition to fulfilling a clearinghouse role, the site posts an electronic bulletin 'The Aboriginal and Torres Strait Islander Health Bulletin' (ISSN 1329-3362). The Bulletin includes a uniquely comprehensive annotated bibliography of publications related to Indigenous health, as well as current information about new reports and conference abstracts.

The 'Australian Injury Prevention Database' (www.sph.uq.edu.au/ipg/aipd) is a database of injury-related health promotion programs implemented throughout Australia from 1988–1999. The site, which was developed by workers at the University of Queensland, provides descriptions and evaluations (including assessments of quality) of injury prevention programs and can be searched according to keywords in order to focus specifically on programs targeting Indigenous populations. Active maintenance of the database ceased in late 1999.

The internet site of the 'Australian Indigenous Health Promotion Network' (www.health.usyd.edu.au/achp/aihpn.html) describes the health promotion activities of an independent group of Indigenous health workers who meet regularly by teleconference and at conferences and workshops. The Network is aimed at educating and training Indigenous health promotion officers and providing a forum for those engaged in health promotion to regularly communicate about their work.

Internet sites providing searchable databases on specific Indigenous health issues are also accessible. The National Drug Research Institute’s ‘Indigenous Australian Alcohol and Other Drug Databases’ (www.db.ndri.curtin.edu.au/) is maintained by Curtin University of Technology as part of the Indigenous Australian Research Program. There are two searchable databases accessible from this site—the Bibliographical database and the Projects database. The Bibliographic database contains references to over 600 books and articles on Indigenous substance abuse. All of the references are briefly annotated and can be printed or saved as HTML files. The Projects database contains descriptions of over 300 recent and current Indigenous projects on substance abuse across Australia. Each project is summarised (objectives, strategies, target groups, evaluation etc) and keyworded and can be printed out in various report styles or saved as an HTML file.

4 Information and particular Indigenous injury prevention issues

This chapter describes information relevant to Indigenous injury prevention grouped according to particular topics within the general subject area. The topics were chosen mainly on the basis of known patterns of injury mortality and morbidity. We considered including a section in this chapter concerning the crucial issues of poverty, social disruption and their relationship to injury. We did not do so because the breadth and fundamental nature of these issues is such that they do not fit well with the approach used in this chapter. These issues arise at several points on this chapter and are outlined in Chapter 2.

The following framework, introduced in Chapter 2, is used in this chapter to provide a standard way of describing information sources on each topic. An advantage of this approach is that it highlights gaps in information.

Injury description and monitoring

Information suitable for describing and/or monitoring the occurrence of injury.

Risk factors and mechanisms

Information identifying and quantifying risk factors for injury, protective factors against injury, and mechanisms of injury occurrence.

Performance of interventions

Information on the efficacy, effectiveness, cost-effectiveness, and other properties of injury prevention interventions.

Implementation of interventions

Information on the extent and quality of implementation of injury prevention interventions.

In addition, other relevant characteristics of information sources are described, if they are known. These include the utility of the information for a range of users, special strengths or limitations of sources, and planned or likely future development of sources.

Alcohol and injury

Alcohol is widely accepted to be a risk factor for many types of injury, including injury in Indigenous communities. Survey data indicates that a lower proportion of Indigenous than non-Indigenous people consume alcohol. However, among persons who do consume alcohol, consumption at hazardous levels is relatively common in the Indigenous population (ABS and AIHW 1999). In a forthcoming report on alcohol-related injury in young males, (Steenkamp, Harrison et al. in press) reviewed the scant literature on drug and alcohol use in Indigenous adolescents. The authors conclude that the pattern of hazardous drinking in young Indigenous males is similar to that reported in older age groups, and that alcohol contributes to high rates of injury in Indigenous adolescents.

In order to focus on sources that may be useful for prevention, it is important to acknowledge that alcohol is widely considered to be the key underlying risk factor for a broad range of injury types (Elkington 1999, English, Holman et al. 1995).

Injury description and monitoring

Routine national mortality and hospital morbidity data collections can, in principal, record information on the likely involvement of alcohol in cases of injury resulting in death or admission to a hospital.

The 10th revision of the International Classification of Diseases (ICD) is now applied in Australia to deaths and (in the somewhat more extensive ‘Australian Modification’) to cases admitted to a hospital. This classification provides numerous categories that refer to alcohol. These include a category for ‘toxic effects of ethanol’ (T51.0), several concerning alcohol as an ‘external cause of injury and poisoning’ (X45, X65, Y15), categories to record assessment of the extent of alcohol involvement in terms of blood alcohol level (Y90) and intoxication (Y91), and others concerning alcohol rehabilitation (Z50.2), ‘counselling and surveillance for alcohol use disorder’ (Z71.4), and alcohol use as a ‘problem related to lifestyle’ (Z72.1). A category for ‘mental and behavioural disorders due to alcohol’ (F10) has sub-categories including ‘acute intoxication’, ‘harmful use’, ‘dependence syndrome’ and ‘withdrawal state’. Other categories concern alcoholic liver disease (K70) and *in utero* effects of alcohol (O35.4, P04.3) (NCCH 1998).

The completeness and reliability of information from these sources on alcohol involvement is uncertain. In addition to the issues affecting description and monitoring of Indigenous injury in general, alcohol involvement is complicated by these factors:

> Alcohol contributes to the occurrence of many injuries. Only in some of these is it meaningful and feasible to record the case as being due to alcohol, at the level of individual cases. However, evidence concerning the contribution of alcohol to injury in populations can be combined with data on injury deaths or hospitalisations to estimate numbers or rates of cases attributable to alcohol (Carman and Bordeaux in press).
>
> If admission to a hospital occurs more than a few hours after the time of injury occurrence, alcohol may have been metabolised, reducing the chance that this factor will be noted in hospital records. Such delays are particularly likely in remote areas. Similarly, if death due to injury occurs some time after injury, or if post mortem

examination occurs long after death, then alcohol present at the time of injury may not be detectable, and alcohol produced in the course of decomposition may complicate assessment.

The person injured due to the effects of alcohol is not always the person who consumed the alcohol.

The data dictionary for the National Coroner Information System (NCIS; see ‘Mortality data: coroner data’ in Chapter 3) is expected to include categories similar in scope to those provided in the ICD. In addition, the NCIS is designed to include textual information, such as coronial findings, which might refer to alcohol. A supplementary data module of NCIS is being developed to provide more detail about drugs, including alcohol.

Some clinic records include information on alcohol involvement. For example Gladman used data from certain clinics in the Cape York region to estimate the occurrence of injury cases with and without obvious involvement of alcohol (Gladman, Hunter et al. 1997). However, even services that specialise in providing alcohol and other drug treatment services have lacked comparable data. The need for better and more standard data has prompted the recent development of a national minimum data set for this subject (AIHW 2000b). ‘Indigenous status’ is an item in the minimum data set.

Risk factors and mechanisms

The 1994 household survey of substance use in Indigenous people living in urban areas (National Drug Strategy 1995) provides fairly extensive data on the knowledge level and attitudes of those surveyed to drug-related risk factors. For instance, the proportion of Aboriginal and Torres Strait Islander peoples living in urban areas who were reported to drink alcohol was lower than the equivalent proportion in the non-Indigenous urban population (62% and 72% respectively). However, those drinking at ‘harmful’ levels (defined as more than six standard drinks per day for males and more than four drinks for women) made up a far greater proportion of Indigenous persons who were current drinkers than those in the non-Indigenous population (68% compared to 11%). The report identifies alcohol as the principle issue for concern for those surveyed, with 95% regarding it as a serious problem and 63% regarding it or its association with violent behaviours as the *most* serious problem for Indigenous communities overall.

In addition, those surveyed reported having been the victim of alcohol-related crime (e.g. theft, property damage, physical or verbal abuse) at almost twice the proportion of the non-Indigenous population. Personal involvement in alcohol-related crime was reported twice as frequently proportionally by the respondents than by those in the non-Indigenous urban population.

The survey does not address drug-related issues for Indigenous Australians in remote areas. As discussed by the authors, the cost of interviewing individuals in non-urban communities was the main consideration that led to the survey being restricted to urban areas. Methodological issues related to survey design included the potential for the introduction of bias due to an interviewer effect (i.e. the use of interviewers from Indigenous and non-Indigenous backgrounds, and the risk of eliciting ‘socially desirable’ responses) and due to selection bias due to refusals or non-selection (of particular concern for populations in which high levels of mobility and/or homelessness may exist). The final sample size of just under 3,000 interviewees included a small under-representation of persons in the 14–24 year age group. In the main, the methodological concerns identified by the investigators were addressed using strategies to minimise their influence or to measure their impact. One strategy, for instance was the validation of some data using estimates of alcohol consumption and patterns of smoking and drinking from the larger National Aboriginal and Torres Strait Islander Interview Survey (ABS 1995).

A strength of the Household survey, was its focus on perceptions among those surveyed, thus providing good data on the drug-related concerns and beliefs of Indigenous persons living in urban areas. The methodology was similar to that used in the earlier National Drug Strategy Household Survey, 1993. Both focused on the specific areas of: drug use and exposure; knowledge, attitudes and policy preferences; law enforcement indicators; and campaign awareness and impact. Thus the 1994 survey both provides data allowing some comparisons with the 1993 survey, as well as potentially providing base line data for future household surveys of the Indigenous population. As noted in the previous chapter, however, the Indigenous survey has not yet been repeated.

While some Indigenous communities in the Northern Territory have imposed total bans or restrictions on alcohol, alcohol-related problems in towns and cities remain a recurring complaint. It has been argued that Indigenous community-controlled licensed clubs could help to promote moderate drinking in a controlled environment. d’Abbs (d’Abbs 1998) examined patterns of alcohol consumption in seven remote Northern Territory Indigenous communities with licensed clubs, as well as the social, economic and political factors associated with the clubs themselves. Using quarterly ‘purchase-in-store’ figures obtained from the Northern Territory Liquor Commission, d’Abbs calculated equivalent litreage of absolute alcohol intake (based on conversion factors applied to volumes sold of low alcohol and full strength beer) for each community. Male and female alcohol consumption was estimated, based on previous survey data which suggested that 80% of Indigenous males and 25% of Indigenous females aged 18 years and over drank alcohol and that males consumed 1.6 times more alcohol than females. In this way, d’Abbs was able to demonstrate mean alcohol consumption levels approximately 50% above the NHMRC level designated as ‘harmful’ in all but one of the seven communities studied.

d’Abbs compared levels of consumption calculated for the remote Indigenous communities to those in the Northern Territory overall and to the total Australian population. In the general Australian population, the proportion of male and female drinkers is reported to be 89.5% and 78.7% respectively. In the Northern Territory, d’Abbs estimates the corresponding proportions to be 92% and 84.4%. Males in the general Australian population are reported to consume 2.4 times more alcohol than females, and in the Northern Territory, d’Abbs assumes a figure of 2.6. Thus, d’Abbs estimates that apparent consumption in male and females in the Northern Territory was (respectively) 32% and 42% above the national level and that apparent consumption among males and females in the Indigenous communities with licensed clubs studied by d’Abbs was (respectively) 76% and 183% above corresponding proportions in the total population of the Northern Territory.

The methodology used by d’Abbs to estimate consumption in the seven remote Indigenous communities would appear to be a sound and reproducible approach with potential for use on an ongoing basis. However, the method does rely on access to current and accurate data on gender-specific drinking patterns in order to apply these data to 'purchase-in-store' figures. In addition, use of this methodology is likely to be limited to more remote communities where the influence of the respective contributions to overall alcohol consumption made by specific ethnic groups within the area served by the licensed premises may be more easily controlled.

Performance of interventions

Douglas evaluated the impact of a project of the Alcohol Action Advisory Committee in Halls Creek, Western Australia (Douglas 1998). The Committee was initially formed to manage the 'Sobering up Shelter' as identified following the Royal Commission into Aboriginal Deaths in Custody (Royal Commission into Aboriginal Deaths in Custody 1991). Aimed at reducing the negative impact of alcohol on the health and welfare of this small Indigenous community in the Kimberly region, various interventions were instituted which were developed in collaboration with the community. Chief among these was restrictions on alcohol trading, but other interventions included a school education program, a 'Community Development Employment Program', expansion to TAFE services and the establishment of an Arts Centre.

The outcome measures used in the evaluation included pure alcohol consumption data, rates of criminal charges at the local police station (not necessarily alcohol-related), hospital data (alcohol-related and domestic violence-related hospital presentations as perceived by nursing staff) and Royal Flying Doctor Service emergency evacuation rates. Douglas reported a reduction in pure alcohol consumption of 7.5% over 2 years, reductions in criminal charges of 18% in the second year, modest declines in alcohol-related hospital presentations, but domestic-violence hospitalisation appeared unaffected. Flying Doctor evacuations consistently declined throughout the intervention, however no attempt was made to identify evacuations which were specifically alcohol-related.

Gray et al. (Gray, Saggers et al. 2000) reviewed a number of interventions aimed at addressing alcohol misuse in Indigneous Australians. The interventions were grouped according to the categories of 'treatment', 'health promotion education', 'acute intervention' and 'supply reduction'. This review was primarily focused on evaluation studies, but did not present specific assessment of performance in any great depth. Nonetheless, this review is a valuable summary of relevant studies. With the exception of one of the supply reduction strategies, the reviewed evaluations tended to use qualitative approaches (either by design or by limitation). The evaluations considered in the review were as follows:

- Three evaluations of a number of treatment centres which tended to be aimed, where goals were defined, at achieving abstinence. In all cases the results were either equivocal or modest at best, and in most cases there were administrative problems and funding inadequacies.
- Five evaluations of health promotion interventions with various target populations (adult, adolescent and school children in differing regions). While the response to the programs were generally positive, evaluations were plagued by methodological difficulties.
- One evaluation of acute care strategies (e.g. sobering-up shelters) and a number of references to reports of their cost effectiveness. The evaluation used

qualitative methodology to demonstrate the acceptance of the shelters to clients and police. The reports on cost-effectiveness were equivocal.

- Four evaluations of supply reduction strategies ('dry zones' and sales restrictions) three of which appeared to have only modest effects on both alcohol consumption and the incidence of violent behaviours. A trial in Tenant Creek (with the cooperation of the Northern Territory Liquor Commission) involved alcohol restrictions over 6 months and is reported to have resulted in reduced alcohol related police incidents and presentations to hospital and women's refuges and a 2.7% reduction in overall alcohol consumption. The trial was extended to 2 years and is reported to have contributed to a 19.4% consumption decrease and further declining trends for all other observed health outcomes.

The Living with Alcohol program of the Northern Territory was established in 1991 and steadily grew to involve a range of interventions. These included alcohol trading and licensing restrictions, increased enforcement of laws and fees pertaining to underage drinking and service of intoxicated persons, public education campaigns, expanded treatment services, worksite programs, child and youth community activities, sobering-up shelters and establishment of 'Night Patrol' in some areas. This program of activities was recently evaluated (National Drug Research Institute 1999)—a process which involved the identification of appropriate harm indicators for assessment of both the tangible and intangible costs of alcohol-related harm.

The evaluation utilised household surveys to estimate changes in drinking pattern according to the risk levels as determined by the NHMRC. Change in per capita consumption was evaluated by calculating licensee purchases of pure alcohol (based on typical percentage by volume) and dividing by ABS estimates of the size of the Northern Territory population. As pointed out by the authors, blood alcohol content testing is not mandatory following motor vehicle crashes in the Northern Territory, with the result that only 45% of involved drivers were tested. The authors, therefore, used surrogate measures to estimate the role of alcohol in accidents involving Indigenous persons. Taking into account patterns of drinking, the authors used reductions in night-time crashes (resulting in police-recorded incidents of fatalities or hospitalisations) occurring between Thursdays and Saturdays as an indicator for reductions in alcohol-related harm.

National population etiologic fractions (English, Holman et al. 1995) were recalculated for the Northern Territory using annual sales of alcohol data to estimate the prevalence of harmful drinking and national data on the relative risks of alcohol-associated chronic and acute illnesses. The methods used to calculate these Northern Territory-specific etiologic fractions are relatively complicated and may limit their application in routine use.

Implementation of interventions

Direct survey is the most appropriate method for collecting information on the extent of the implementation of certain interventions. The household survey of drug use amongst Aboriginal and Torres Strait Islander people (National Drug Strategy 1995) was described in a previous section and utilised face-to-face interviews with persons aged 14 years and above. While the survey did not include Indigenous persons from remote areas, the sampling design was aimed at reflecting population distributions from the metropolitan urban and non-metropolitan urban areas around Australia. All interviews were carried out by skilled interviewers who provided self-completion forms and sealed envelopes for participants to respond to questions which were more sensitive—such as those related to involvement in alcohol-related crime, or personal drug use experience.

Using these methods, the survey was able to identify the extent of awareness amongst participants of general campaign initiatives. For instance, 85% of respondents were aware of advertising against drug and alcohol abuse; 70% were aware of posters, pamphlets or videos on legal and illegal drugs; 55% were aware of school drug programs; and 39% were aware of telephone drug information services. Only 10% of respondents claimed to have had no exposure to any of these media. In terms of specific initiatives, the survey identified that 56% of respondents had seen television advertisements about the ‘Alcohol and Violence’ campaign on at least one occasion. Over 62% of those in metropolitan urban areas and 61% of those aged under 25 years were aware of the campaign—with non-metropolitan dwellers and those in older age groups demonstrating lower awareness levels.

While there are a number of limitations associated with direct survey methods (including the potential influence of interviewer effect on responses to sensitive questions), it may be possible to account for some of these at analysis. For instance, and as was used in the National Drug Strategy survey, the impact of others in the household being present during the interview may be measured against responses to potentially sensitive questions such as the proportion reporting higher risk drinking.

The National Minimum Data Set for Alcohol and Other Drug Treatment Services provides a basis for the collection of more comparable data on the extent of implementation of those interventions that are delivered in clinics and similar settings (AIHW 2000b).

Volatile substance abuse

An overview concerning the issue of volatile substance abuse is provided in a recent review of interventions aimed at reducing petrol sniffing in Indigenous communities (d’Abbs and MacLean 2000). Sniffing the vapours arising from petrol is the chief form of volatile substance abuse prevalent in some Indigenous communities in Australia. d’Abbs and MacLean’s report is important as it synthesises much of the published and unpublished work in this area. As discussed by the authors, inhalation of volatile substances is not a problem specific to Indigenous populations. Inhalation of glues, liquid solvents, petrol, aerosols and fire extinguisher propellants for mind-altering effects is quite common among some groups of young persons, especially those from lower socioeconomic backgrounds—perhaps due to its relative cost. d’Abbs and Maclean cite Houghton et al’s 1998 study which found that approximately 25% of secondary students in New South Wales and Victoria had at some time inhaled solvents and 8% had done so in the previous month. However, petrol sniffing in particular does appear to present more problems for Indigenous communities in Australia and elsewhere in the world. An important difference in patterns of volatile substance abuse between Indigenous and non-Indigenous users (noted by d’Abbs and MacLean) is that while chronic use is rare in non-Indigenous sniffers, it is relatively common amongst Indigenous sniffers.

According to the authors, petrol sniffing is more prevalent in males than females, although there is some evidence that the proportion of female sniffers is rising from its current levels of around 25% of all sniffers. The population of sniffers is also thought to be 'aging', with sniffers older than 30 years reported. Nonetheless, young persons aged 15–19 years of age appear to make up the largest group of users within an overall group that encompasses ages ranging from 8 to 30 years.

The short- and long-term injury of petrol sniffing may be profound and are not always restricted to the sniffer. As summarised by d'Abbs and MacLean, some of the acute health effects include irrationality, aggression, confusion, headaches, poor memory, slurred speech, burns, pneumonia and (sometimes) sudden death. Chronic use may result in several forms of encephalopathy, psychosis, chronic disability (including mental impairment) and death. Psychosocial impacts may include poor school attendance and performance, social isolation, family alienation and increased contact with the criminal justice system. Families of sniffers may experience loss of control, fear of violence from sniffers and the grief and hardship associated with caring for a disabled loved one. The community may suffer injury in the form of ongoing vandalism, social disruption due to impaired control by authorities, decreased morale and loss of part of the community population of young people.

Injury description and monitoring

In describing the various trends for petrol sniffing in Indigenous communities, d'Abbs and MacLean (2000) discuss the difficulties in determining precise estimates of use due to the 'semi-clandestine' nature of the activity and the fluctuating nature of patterns of use. In addition, petrol sniffing is differentially distributed among Indigenous communities. This, combined with the fluctuating pattern of use within communities also makes it difficult to determine trends with respect to whether petrol sniffing is increasing or decreasing overall. This has serious implications for evaluating interventions aimed at addressing this problem.

Mortality and morbidity statistics may also be difficult to interpret in relation to petrol sniffing. As d'Abbs and MacLean state (2000, page 27);

> This is in part because there is no specific code for volatile substance misuse (or petrol sniffing) in the International Classification of Diseases. Sniffers commonly present to clinic and hospitals with illness such as pneumonia or injury such as burns which have petrol inhalation as an underlying cause.

This assessment is true of the 9th revision of the International Classification of Diseases. However, the 10th revision (ICD-10) and the 'Australian Modification' of ICD-10 used to code hospital cases (ICD-10-AM) represent an improvement in this regard (NCCH 1998). This revision provides a category for 'Mental and behavioural disorders due to volatile solvents' (F18). This has sub-categories including 'acute intoxication', 'harmful use', 'dependence syndrome' and 'withdrawal state.' Categories are also provided for 'Toxic effects of organic solvents, petroleum products' (T52.0) and for 'exposure to organic solvents and halogenated hydrocarbons and their vapours' (X46, X66 and Y16). Despite the availability of these categories, d'Abbs and MacLean's concern that an underlying cause of volatile substance inhalation may be overlooked when coding an episode with another presenting condition, still stands. A validation study would be required to test the completeness of ascertainment of relevant cases in routine mortality and hospital morbidity data collections.

Estimates of prevalence and patterns of petrol sniffing currently rely on community survey methods and interviews with community members. For instance, d'Abbs and MacLean (2000) cite Freeman's 1986 study in Central Australia with sniffers defined as 'chronic' according to the consensus of four individuals from different family groups in the community. In their 1988 study, Hayward and Kickett (also cited in d'Abbs and MacLean 2000) define 'chronic' users as those who admitted having sniffed in the past week or the past month. As reported by d'Abbs and MacLean, in 1996 Hooper and Shaw found strong intra-community agreement on who might be categorised as 'occasional' and 'chronic' sniffers. Mosey (Mosey 2000) obtained information on sniffer numbers from community Wardens, staff and students of community schools—these estimates were validated, where possible, by close relatives and former sniffers.

Risk factors and mechanisms

Decisions about the information required for planning interventions to minimise injury due to petrol sniffing will be based on assumptions about the cause of injury. In their recent review, d'Abbs and MacLean (2000) chiefly discuss the social aetiology of petrol sniffing. Risk factors discussed include boredom, social isolation, family role dysfunction (sometimes associated with alcohol abuse by a parent), social and/or cultural breakdown and peer pressure. The authors also discuss the possibility that petrol sniffing is chosen due to its relatively low cost, with poverty leading to few other (perhaps, less harmful) alternatives. Interventions based on assumptions of social aetiology might require information about service provision and community access to recreational activities. Mosey (2000), for instance, notes the increase in sniffing prevalence in Wirrimanu (a community in the Kutjungka region, northern Western Australia) following the discontinuation of an extended range of diversionary interventions which included disco and video nights, arts and crafts activities, educative programs and employment and training opportunities.

Assumptions about more direct causes of injury associated with petrol sniffing may also form the basis for intervention. For instance, d'Abbs and MacLean (2000) also discuss the cumulative effects of lead (a component of some petrols), as it is absorbed into the body where it can have permanent encephalopathic effects. The authors cite Maruff et al. (1998) in stating that the years spent sniffing and the duration of exposure to leaded petrol have been found to have a dose–response relationship with the degree of cognitive and neurological impairment suffered by survivors of this activity. This report presents some evidence that neurological damage is less prevalent among those sniffing unleaded types of petrol. However, there remain a number of other harmful substances in unleaded petrol which can lead to coma or death in the short term and the long term effects of sniffing unleaded petrol are yet to be determined.

While there appears to be little consensus about the precise aetiology of volatile substance abuse, there does seem to be general agreement that the problem is multi-factorial. For this reason, interventions which are narrowly focused tend to have the least impact on sniffing prevalence (d'Abbs and MacLean 2000, Mosey 2000).

Performance of interventions

There have been a number of interventions aimed at reducing the uptake of the practice of petrol sniffing or minimising the individual and community harm associated with the practice. Many of these interventions are yet to be formally evaluated and most form part of a program of activities, which complicates assessments of efficacy for any given strategy. d'Abbs and MacLean (2000) report on these interventions comprehensively, including some of the more widely utilised strategies, such as supply restriction—particularly in the form of substitution of petrol with Avgas. Avgas (or 'Comgas' as it is also widely known) is associated with very little euphoric effect and can cause severe headaches in sniffers. The relative success of petrol sniffing interventions may be measured using such indicators as sniffing-related hospitalisations and emergency evacuations, as well as community surveys on sniffing patterns. While cyclical fluctuations in the patterns of petrol sniffing in communities tend to influence estimates of prevalence, community estimates and perceptions of impact are most commonly used to evaluate the performance of interventions.

Substitution has been used in a number of Indigenous communities, with various effect. For instance, d'Abbs and MacLean report very encouraging results from communities at Maningrida, and mixed levels of success in a number of A<u>n</u>angu Pitjantjatjara Land communities. The authors point out that substitution appears to be more successful in communities which are more remote, with far less improvement experienced in communities with greater access to petrol sources from other locations.

d'Abbs and MacLean (2000) summarised a number of unpublished evaluations of specific substitution programs in Indigenous Communities. For instance, the work of Roper in A<u>n</u>angu Pitjantjatjara Lands who reported various levels of improvements in sniffing prevalence in the 22 communities where Avgas was introduced depending on access to main roads and level of remoteness. Stojanovski noted that sniffers in Yuendumu tended to siphon mixtures of Avgas and petrol from cars. This is of concern since Avgas actually contains relatively high levels of lead. Mosey (2000) suggested that while the success of substitution relies on the complete support of the community involved, there is frequently resistance due to the perception that using Avgas may damage cars and is more flammable than ordinary petrol.

The previously discussed tendency for the pattern of sniffing within communities to fluctuate has serious implications for the evaluation of strategies aimed at reducing the practice. For instance, d'Abbs and MacLean (2000) cited Shaw who reported dramatic reductions in sniffing following the introduction of Avgas in one Central Desert community, followed by alarming increases in the practice in subsequent years. Nonetheless, sniffing-related fits did not increase in parallel with the rise in use, an observation thought to be due to the increased use of unleaded petrol. Shaw (cited in d'Abbs and MacLean 2000) suggests that the social activity of sniffing petrol is difficult to influence with substitution strategies alone, particularly when outside sources of petrol remain available. Other supply restriction strategies were described by d'Abbs and MacLean (2000) and included exclusive community use of unleaded petrol, locking up petrol supplies, petrol additives (deterrent effect of unpleasant side effects), and by-laws prohibiting the practice and the sale of petrol for this purpose.

As discussed by the authors, the more successful campaigns reviewed by d'Abbs and MacLean were those which enjoyed widespread community support and participation and involved a range of strategies. For a comprehensive description of individual programs, the reader is directed to their report. Other primary intervention strategies include providing recreational, sporting and counselling opportunities for at-risk young peoples—for instance the Western Line Project of the Intjartnama Aboriginal Corporation and the Yuendumu recreational program. There are also programs aimed at increasing opportunities for secondary education, training and, such as the Alice Springs Detour Project and the Indulkana program in South Australia.

One of the better known intervention models—also described in d'Abbs and MacLean (2000)—was the work of the Health Aboriginal Life Team (HALT). This program assumed a socio-political aetiology for sniffing (particularly, patterns of interaction between Indigenous people and non-Indigenous institutions), and concentrated its efforts on empowering Indigenous individuals and their communities to regain the capacity to solve their own problems. Strategies aimed at the problem of sniffing in particular, sought to promote reintegration of sniffers with their families and the strengthening of the family unit's capacity for control and nurturing. Individual and family counselling in combination with community development techniques were the key strategies utilised in the program. Prevalence of sniffing declined dramatically (if not completely) in Yuendumu and Kintore during the implementation of HALT's program in the 1980's to early 1990's. However, the two communities were also engaged in a number of activities, independent of and, sometimes, in conflict with HALT's philosophy of the nurturing family, which the communities also credited with some success at the time. In addition, the HALT model has not been successful in other communities, such as in the A<u>n</u>angu Pitjantjatjara Lands.

Additional information about specific, community-based projects may be obtained from the Indigenous Australian Alcohol and Other Drug Databases website (www.db.ndri.curtin.edu.au/).

Implementation of interventions

The development of programs aimed at reducing the prevalence of, or injury caused by, volatile substance abuse has tended to be under-documented with formally instituted programs tending to be developed according to the needs of particular communities—often being implemented alongside independent community strategies. This presents problems for the evaluation of specific programs and has implications for their applicability to communities other than those from which they originate. Nonetheless, *component* strategies of overall programs have been tried in various communities across Australia – although much of this also remains undocumented. Two recent reports (d'Abbs and MacLean 2000, Mosey 2000) present information about the extent of implementation of these interventions, some of which are briefly described below:

- In South Australia and Western Australia, Indigenous communities are permitted to enact by-laws which make petrol-sniffing illegal, and communities in the Northern Territory have also requested this power. Selling petrol to those clearly intending to inhale the product is prohibited in the Northern Territory, but to date this charge has not been successfully proven. The impact of the recent introduction of mandatory sentencing for property offences (common sniffing-related crimes) is yet to be evaluated.
- Replacement of petrol with Avgas has now been implemented in 30 communities with various levels of success. Success appears to depend on the

completeness of fuel replacement, with the level of access to outside sources of petrol being a crucial factor.

- Wardens schemes and Night Patrols, originally aimed at minimising alcohol-related harm, are also being used to address issues related to petrol sniffing. These schemes have been operating for up to about 10 years in some communities, and in many others for shorter periods. Effects seem to have varied. For example, foot patrols have been reported to be more effective than vehicular patrols which are more easily avoided by petrol sniffers.
- Outstation respite or rehabilitation centres have been variously described as a panacea for most social problems and a temporary solution which does nothing to reduce petrol sniffing prevalence in host communities. To date, there have been no formal evaluations of any Outstation projects, although the Commonwealth and Northern Territory Governments are intending to conduct evaluations on the three programs they fund in the Northern Territory

Other drugs and injury

While alcohol abuse and petrol sniffing remain the central focus of drug strategies targeting Indigenous communities, high prevalence of illicit use of other drugs and high kava consumption in some communities also constitute issues of significant public health concern. Despite a widespread perception of increasing illicit drug use in Indigenous people and the endemic nature of kava use in certain communities, there have been few attempts to monitor the extent of the use of other drugs in Indigenous communities.

Injury description and monitoring

Thomson and English assessed sources for information on drug use and related problems among Indigenous Australians (Thomson and English 1991). The report highlights a number of deficiencies in information sources for all types of data (e.g. drug utilisation and morbidity), particularly for those living in urban and rural areas relative to those in remote areas. Nonetheless, this report does usefully highlight a number of potential sources of data on Indigenous drug use across Australia, including the National Forensic Case Reporting System which received reports of drug-related deaths on a quarterly basis from each jurisdiction. Once again, this is a general collection and is subject to limitations related to the identification of Indigenous status.

The 10th revision of the International Classification of Diseases provides a range of categories related to drugs other than alcohol. Over 130 categories are provided for coding ‘Poisoning by drugs, medicaments and biological substances’ (T36–50). These include categories for opium, heroin, other opioids, methadone, cocaine, cannabis and its derivatives, and various other psychotropic drugs. Other categories are provided for coding ‘Mental and behavioural disorders due to …’ opioids, cannabinoids, sedatives or hypnotics, cocaine, other stimulants including caffeine, hallucinogens, tobacco, and other psychoactive substances” (F11–17, F19). As with the similar categories for disorders due to alcohol and volatile solvents, each of these categories has sub-categories, which allow various clinical states to be distinguished. Categories for ‘Poisoning by and exposure to …’ drugs are provided in the ‘external causes’ chapter, allowing separation of cases recorded as accidental, deliberate self-harm, assault and of undetermined intent. Finally, categories are provided to code drug rehabilitation (Z50.3), 'counselling and surveillance for drug use disorder' (Z71.5), and drug use as a 'problem related to lifestyle' (Z72.2).

Kava is one quite widely used drug for which no specific categories are presently provided in ICD-10 or ICD-10-AM.

Risk factors and mechanisms

As discussed by Thompson and English (1991), information about the pattern of drug consumption is useful because the risks tend to increase with consumption. Survey techniques are often the most appropriate methods for collecting information about consumption patterns. Methods based on assessment of 'apparent consumption' can be used when information on drug supply can be obtained.

The National Drug Strategy Household Survey of Urban Aboriginal and Torres Strait Islander Peoples (1995) provides possibly the first direct picture of illicit drug use in Indigenous people. This report provides data suggesting over 50% of the population had tried illicit drugs on at least one occasion and 24% defined themselves as 'current users'. The proportion of Indigenous persons defining themselves as current marijuana users is almost twice that of non-Indigenous persons, with persons in the older age groups (26 years and over) contributing to the extra usage.

The extent and nature of injecting drug use among Indigenous people was described in a recently published report (Larson, Shannon 1999). Seventy seven Aboriginal or Torres Strait Islander people living in Brisbane who had injected illicit drugs at least once in the previous 12 months were interviewed by peer interviewers. This report describes patterns of drug use, initiation into drug use, needle disposal practices, needle sharing practices and access to clean needles, service utilisation, drug related experiences in youth detention centres and prisons and knowledge about HIV and AIDS. The results indicate that 'speed' (amphetamine) is the most commonly injected drug followed by heroin. Sharing injecting equipment and poor needle disposal practices were among the most striking findings reported. In contrast, a recent survey of the characteristics of needle exchange clients in the Northern Territory (Roberts and Crofts 2000) found that the prevalence of unsafe needle practices in the Indigenous respondents was very low and similar to the prevalence in non-Indigenous respondents. However, while the response rate for the Northern Territory survey was relatively high (considering the clandestine nature of the activity of interest), it is not unreasonable to speculate that the respondents may not have been completely representative of all the clients utilising this needle exchange agency, nor of injecting drug users generally.

Estimating kava consumption in Arnhem Land was the subject of a recently published comprehensive review (Clough, Burns et al. 2000). As discussed by the authors, estimates of kava consumption are usually based on the amount of kava delivered to the community. This tends to provide per capita consumption estimates and may mask the extreme levels of consumption which can result in more deleterious health effects. This study compares estimated kava use in one community for the years 1989–1990 with consumption in 1990–1991. Using ethnographic methodology, the researchers were able to estimate person-hours spent consuming kava and the concentrations of kava powder-based infusions. This information made it possible to assign consumers to one of five categories of level of consumption based on time spent drinking kava. Drinkers are also assigned to categories describing the social context of the drinking episode (e.g. lone drinker, card games, Elders circles, household groups etc.).

Two methods of estimating weekly consumption levels are presented. Firstly, the authors estimate per capita weekly kava consumption by using supply and population data. The second method for calculating weekly consumption is based on the participant observation method mentioned above. Having noted that people in the studied community tend to drink kava at a relatively steady tempo, the authors demonstrate how their methods may be used to evaluate previously published data on kava consumption.

Performance of interventions

As discussed by Larson et al. (1999), while Australia has been active in developing and implementing programs aimed at minimising the harm associated with illicit drug use in the general population (e.g. needle exchange and education programs), there have been relatively few interventions which have specifically targeted unsafe drug-related behaviour in Indigenous drug users. Indeed, the work of Larson et al. (1999) demonstrates the high level of risk taking and low level of access to appropriate health services among Indigenous injecting drug users in Brisbane.

About 50 current and recent projects relevant to injecting drug use are listed on the Indigenous Australian Alcohol and Other Drug Databases website (www.db.ndri.curtin.edu.au/). Many of these community-based projects are primarily aimed at addressing alcohol misuse, but some also address the problems associated with illicit drug use. Interventions utilised in the projects described at this site include education campaigns, needle exchange programs, ‘sobering up’ shelters and so on.

For community projects specifically targeting illicit drug use, needle exchange programs and providing information on blood borne disease appear to be the cornerstone strategies. As has been noted elsewhere, many of these projects are yet to be fully evaluated. Statistics on the quantity of ‘fits’ given out are frequently used to evaluate the impact of the programs, with declines in the uptake of services sometimes interpreted as indicating for reduced use of injecting drugs in the community. More information would clearly be required to be confident in such an interpretation.

Roberts and Crofts (2000) report on two consecutive surveys of the characteristics of needle exchange clients in Darwin. The ‘Health for Injectors in the Northern Territory’ (HINT) program has been operating since 1991. HINT offers peer education and support and advocacy as well as operating a needle exchange program for Indigenous and non-Indigenous injecting drug users. This report is the first to be published on two surveys which were undertaken in 1998 during the dry season and the wet season (July and October to November). The focus of the surveys was on behavioural risks for blood-borne diseases and self-reported prevalence of infections associated with the practice. 129 clients participated in the first survey and 121 in the second—a response rate of around 50%. The information presented in this report describes very few differences in consumption patterns and level of behavioural risk. Despite the fact that HINT does not specifically target Indigenous injectors, 14% of the respondents identified themselves as Indigenous. The authors contrast this figure with the finding that 8.2% of the population of Darwin identified as Indigenous in the 1996 census.

Further information on the characteristics of needle exchange clients is available from HINT, which has also posted these results and those of a subsequent survey in the form of four reports on its website (www.octa4.net.au/ntac/snapshot/). The value of this information is enhanced by the ongoing nature of the collection, allowing for some examination of time trends. While data on client satisfaction with the service and self-reported changes in behaviour as a result of contact with HINT are collected during the survey process, no other formal evaluative processes are carried out in order to assess the overall efficacy of the program.

Implementation of interventions

As mentioned, very few formal evaluation of strategies to minimise harm related to other drug use in Indigenous populations have been undertaken. It is difficult to assess the extent of the uptake of interventions specifically targeting, or inclusive of, Indigenous drug users. Survey methods are likely to afford the best information with which to measure the extent and quality of many types of intervention. The National Drug Strategy Household Survey of Urban Aboriginal and Torres Strait Islander Peoples (1995) presents some useful data on the impact of drug services. Data on the utilisation of services (e.g. ‘sobering-up’ shelters, youth centres, rehabilitation centres) are provided as are data on respondent awareness of specific campaigns.

As for alcohol, the National Minimum Data Set for Alcohol and Other Drug Treatment Services provides a basis for the collection of data on the extent of implementation of interventions that are delivered in clinics and similar settings (AIHW 2000b).

Road injury

The pattern of road injury in Indigenous people is known to differ from the pattern in the non-Indigenous population. As presented in McFadden et al. (McFadden, McKie 2000), a report which is described below, Indigenous people are over-represented in road injury mortality in all three jurisdictions which collect these data. For instance, in Western Australia and South Australia, road deaths in Indigenous people occur at over three times the rate experienced in the non-Indigenous population. In the Northern Territory, road deaths in Indigenous people occur at nearly twice the rate of the non-Indigenous population. In Western Australia, Indigenous people contributed to 7% of road injury-related hospital separations during 1988 to 1996, but only represented 3% of the population at that time (Cercarelli 1999).

Differences in crash characteristics are also a noted difference between Indigenous and non-Indigenous people. According to Cercarelli et al. (Cercarelli, Ryan et al. 2000), Indigenous people are more likely to be involved in single vehicle crashes and those involving pedestrians. Relatively high proportions of crashes involving Indigenous people have contributing factors such as alcohol, over-loaded vehicles and non-use of seat-belts.

Brice has recently completed a critical review of road safety as it pertains to Australian Indigenous people, focusing on South Australia (Brice draft). The document (to be published by Transport SA) also includes findings of an examination of South Australian coronial records. The report considers road injury of Indigenous Australians in a historical and social context, examines specific matters (especially data quality and availability) and includes recommendations. Recommendations concerning information sources include improvement of Indigenous identification, addition of particular information to case records (e.g. occupant position and use of restraints), and commissioning of community research with an ‘action’ component. Brice argues for analysis of causes that goes beyond identification of proximate factors (such as intoxication and non-use of occupant restraints) to seek an understanding of why such factors are prevalent among Indigenous people.

Injury description and monitoring

McFadden et al. (2000) compare the annual road death rate of Indigenous and non-Indigenous Australians for Western Australia, South Australia and the Northern Territory—the three jurisdictions currently considered to collect this information with adequate quality. This report utilises regularly published ABS mortality data for 1994–1997 and ABS projected Indigenous population figures for 1997. As well as presenting comparisons of Indigenous and non-Indigenous road death rates, the authors use these rates and Indigenous population projections to base estimates on national road injury mortality in Indigenous people. Two methods are used to estimate national rates from findings for the three jurisdictions reported. One method assumes that age- and sex-specific rates are the same in the Indigenous population in the three observed jurisdictions and in the remainder of the Indigenous population. The other method assumes similar National relationships between Indigenous and non-Indigenous road death rates to those observed in the three jurisdictions whose data were analysed. Using both methodologies, McFadden et al. demonstrate at least a threefold rate of road death in Indigenous people compared to non-Indigenous people. The authors present evidence that road deaths account for a substantially higher proportion of overall mortality in Indigenous people than in the non-Indigenous population. This report provides a useful synthesis and comparison of ABS data. However, as discussed by the authors, the limitations applying to identification of Indigenous status are likely to have led to underestimations of true death rates in jurisdictions collecting these data and extrapolation of these rates to the Australia-wide population does not allow for possible differences in risk factors and mortality patterns in individual jurisdictions.

Road statistics are available from the Western Australian Road Injury Database, which contains ten years of data for this jurisdiction. This database makes available for analysis information from police crash reports, road injury-related hospitalisations and death. Special arrangements in Western Australia have enabled linkage between data sources that have not been possible in most other parts of Australia.

A recent report by the Road Accident Prevention Research Unit (University of Western Australia) synthesises these data and relevant research done by the Unit with the aim of describing the road safety and injury patterns in the rural and remote regions of Western Australia (Ryan, Cercarelli et al. 1998).

By linking hospital separation data (which identify Indigenous status) with police crash reports (which do not), the authors were able to examine patterns of crash involvement by Indigenous people. Dividing the jurisdiction into five regions according to rurality and remoteness made it possible for intra-state comparisons of patterns of crash type, characteristics of drivers, road environment and self-reported attitudes and behaviour. While this report presents a great deal of information on road injury in general, information on the characteristics of crashes involving Indigenous people is presented separately. Discussed by the authors, this information tends to be limited due to the non-identification of Indigenous status in most data sources with the exception of hospital records. However, information describing the incidence of injury among road users (e.g. drivers, passengers and pedestrians) and the type and number of vehicles involved is presented in this report. In addition, mean length of stay in hospital is used to indicate for severity of injury.

A more recent report by the same Unit (Cercarelli 1999) focuses specifically on road injury hospitalisations and deaths among Indigenous and non-Indigenous people in Western Australia. This report provides information on the characteristics of crashes involving Indigenous people compared to all other road users with the aim of examining causality. Using similar methodology to the report just described, data from the Road Injury Database (containing linked records from police crash records, hospital separations, ambulance records and death registrations) and ABS population estimates are utilised to present comparative data on age and gender, location and type of crash, road user type and injury severity. Despite concluding that Indigenous people are over-represented in road crash deaths and hospitalisations in Western Australia, under-identification of Indigenous status in hospital records is a limitation noted by the author which is likely to lead to under-estimations of the true numbers of injuries in Indigenous people.

While not specific to road injury in Indigenous people, a recent report, ‘Health in Rural and Remote Australia’ (AIHW 1998) does present some data on a range of health indicators for Indigenous and non-Indigenous rural populations. The report, the first concentrating solely on rural and remote health issues, synthesises data obtained from various sources, including AIHW mortality and hospitalisation statistics, and provides some all cause injury and road injury statistics for Indigenous populations living in rural and remote areas compared to urban areas.

The International Classification of Diseases (ICD) has long provided a fairly detailed section of categories concerning injuries resulting from crashes and other events related to transport. The 10th revision provides several hundred categories concerning land-transport (NCCH 1998). These distinguish the mode of transport of the injured person (e.g. car, pick-up truck or van, bus, motorcycle, pedestrian), the transport role of that person (e.g. driver, passenger, pedestrian), the ‘counterpart’ in a collision (e.g. another vehicle, or a fixed object), and whether the event occurred on a public road. These categories are currently the same in ICD-10 and ICD-10-AM.

The categories presently provided in ICD-10 and ICD-10-AM do not permit certain distinctions to be made that literature suggests may be particularly relevant to transport injury affecting Indigenous people. Notable examples are cases in which injury is sustained by people travelling in the open load-space of utilities, trucks, etc., and cases involving overloaded vehicles.

Risk factors and mechanisms

Several factors are thought to contribute to different patterns of road injury in Indigenous and non-Indigenous populations. Some risk factors are common to all persons living in remote areas (discussed in AIHW 1998) and include greater exposure to long-distance, higher speed road travel on unsurfaced roads. Greater distance from and reduced access to emergency health services are also likely to contribute to mortality due to road injury in remote populations. Indeed, as mentioned in the report, the rate of fatal road crashes increases with increasing rurality and remoteness. As discussed by Cercarelli et al. (Cercarelli, Ryan et al. 2000), approximately 70% of the overall Indigenous population resides in rural areas – clearly resulting in greater exposure as a proportion of total population to these risks. The authors suggest that differences in lifestyle and culture in Indigenous persons may exacerbate these existing risks by reducing the appropriateness of current safety education programs. In addition, the poorer condition of many roads in remote areas may damage vehicles to a degree which reduces their roadworthiness.

Ryan et al’s 1998 report on road safety in rural and remote Western Australia (described above) identifies a number of risk factors for which information is available in the form of police crash reports (accessible from the Western Australian Road Injury Database). Quantitative data on general risk factors such as speed, alcohol and seat belt usage are presented in this report. The authors suggest that increased numbers of passengers in cars and in the open load space of utilities and trucks and the decreased use of seat belts may contribute to excess injury in Indigenous people, but point out that these observations could not be confirmed on available evidence.

As described above, Cercarelli (1999) presents comparative data on hospitalisations and deaths among Indigenous and non-Indigenous people in Western Australia. Interestingly, Cercarelli found that while the majority of road injuries in Indigenous people requiring hospitalisation occurred in rural areas, the rate of death was highest in Indigenous people living in the metropolitan area. This report highlights the gaps of information collected on crashes involving Indigenous people which might help to identify risk factors which contribute to higher rates of injury relative to the non-Indigenous population .

In their process evaluation of the ‘open load space project’, ahead of the commencement in January 2001 of new legislative restrictions on travel in open load spaces in Western Australia, the investigators summarised data provided by Regional Project Managers on twenty ‘open load space’ incidents during 1999 and early 2000, involving at least 140 vehicle occupants (Cercarelli and Cooper 2000). The reports provided information on causative factors for 18 of the 20 incidents. For example, alcohol was reported as a causative factor in 12 of the 18 incidents and speed was reported in seven incidents. None of the vehicles had been fitted with roll cages. Information describing the direct path of injury (e.g. occupant ejected from the vehicle) and degree of injury severity was also collected. The method of data collection used in the report allowed for analysis of risk factors at a level of detail not afforded by previous studies.

Performance of interventions

Little documentation was found of investigation of road safety interventions specific to Indigenous populations. While there have been numerous efforts at a community level, formal evaluation of this work appears to be uncommon. Comprehensive discovery of unpublished work in individual communities around Australia was beyond the scope of this project. The following examples concentrate on interventions where evaluation information has been published.

Legislative efforts to reduce the road injuries are usually applied throughout a jurisdiction rather than at community-level. Some whole-population interventions may have relatively great impact on the road injury experience of the Indigenous population. For example, Northern Territory legislation outlawing the practice of riding in an open load space without an approved roll frame fitted to the vehicle, while not restricted to Indigenous people, is nonetheless expected to have its greatest impact in this population due to the greater preponderance of this activity in Indigenous people (Cercarelli 2000). Similar legislation was expected to come into force in Western Australia from January 2001 (Cercarelli and Cooper 2000).

According to Garrow (Garrow 1999), in the Kimberley region of Western Australia around 30% of all passenger deaths (comprising 18% of total road fatalities) during 1990–1994 were open load space passengers in utility trucks. Riding in open load spaces has been illegal in the Northern Territory since 1994—unless the driver has a zero blood alcohol level and the vehicle is fitted with a prescribed roll frame—and Garrow presents data in support for the introduction of similar legislation for Western Australia.

Since the introduction of the legislation, open load space passenger deaths in the Northern Territory have fallen from 10.3% of all deaths during 1990–1993 to 2.1% of deaths during 1994–1997. During the same periods, serious road injury rates for open load passengers in the Northern Territory fell from 15.8%–6.3% of all serious passenger injuries. This is an example of the potential of injury statistics to provide (limited) evidence of the impact of interventions or campaigns that are applied widely across jurisdictions. Some of these data are accessible via the Internet at the Northern Territory Department of Transport and Works, Vehicle Accident Database available at www.nt.gov.au/dtw/, and the Western Australia Transport's Office of Road Safety at www.roadsafety.wa.gov.au/.

From January 2001, regulations came into force in Western Australia making it illegal to travel in open load spaces without an approved Roll Over Protection Device. From January 2006, any passenger travel in the open load spaces of vehicles will be prohibited all together. In a recent report, the process of implementation of this strategy was evaluated for the nine-month period to March 2000 (Cercarelli and Cooper 2000). The impact of the strategy was monitored by direct data collection by Regional Project Managers concerning open load space incidents, as this type of incident is not always identified in police reports in Western Australia (nor are they identifiable in routine hospital statistics or deaths data). For the same reason, details about whether the occupants of the vehicle were in the open load space at the time of the accident was also collected by the Regional Project Managers. Occupant level information was recorded for 101 of at least 140 persons known to have been involved in these incidents during the period of study. While data on age, restraint use and alcohol tended to be recorded less completely, the method used allowed for relatively good identification of Indigenous status and close examination of contributing factors. Ongoing collection of data using this methodology is a recommendation of this report.

Another source of baseline data, ahead of the commencement of the new legislation, is a recent descriptive report of crashes involving ‘utilities’ (vehicles with open load spaces) in Western Australia (Cercarelli and Kirov 1999). This report presents comparative data on patterns of crashes and injuries in passengers of cars and utilities during the period 1987–1997. Utilising the Western Australian Road Injury Database (already described), the authors present total population data on many aspects of injuries sustained, demographic information, and data concerning alcohol and speed. Linked hospital data allowed for comparisons according to Indigenous status and across regions in this report.

Implementation of interventions

Cercarelli et al. (2000) reported on a survey of 13 Chairpersons of the largest communities of the Fitzroy Valley region (Kimberly region, Western Australia). This investigation was aimed at exploring the attitudes of Indigenous people to road safety issues and covered topics such as seatbelt use, drinking and driving, speeding, travelling in the back of utilities or trucks and the use of roll cages, sleeping on the road. This study provides useful data on the extent of awareness of and attitudes to the focus of road safety campaigns. For instance, the results indicate that while inadequate safety belt use is considered to be an issue of concern, road conditions are considered to be more important. By contrast, drink driving, speeding and riding in the back of open vehicles (issues which have been identified as important risk factors) were not seen as important issues in the communities interviewed. The authors suggest that improvements to basic infrastructure (e.g. road conditions, housing, education, water supply etc.) are seen as issues of greater importance.

In their report on the process evaluation of the Open Load Space Project in Western Australia, Cercarelli and Cooper (2000) describe 11 ‘Core Performance Indicators” which were used to assess the extent of implementation and other process aspects of the project across five regions in the State. These indicators included the number of sessions conducted with key groups, the number of media articles and radio interviews regarding the Project, the number of inquiries about the Project and so on. The five Regional Project Managers reported data against these indicators on a quarterly basis. This method afforded good data about the extent of the implementation of the intervention and continued use of these indicators for ongoing monitoring is a recommendation made in this report.

Injury due to interpersonal or family violence

While a complete understanding of the extent and nature of violence in Indigenous Australians is yet to be achieved, sufficient evidence is available to show that injury due to violence is an issue of serious concern (Memmott and Stacy 1999). Recent findings indicate that violence by Indigenous people is more likely to be directed toward those well known by the perpetrator than towards strangers. This includes violence resulting in serious injury or death. For instance 35.5% of homicides and 39.5% of serious assaults by Indigenous people in Western Australia were instances of violence directed toward the spouse of the perpetrator. The corresponding figures for the non-Indigenous population are 19.8% and 7.5% respectively (Blagg 2000). It is likely that many of the issues leading to increased incidence of violence in Indigenous people overlap with those leading to other destructive behaviours (e.g. suicide, and abuse of alcohol and other drugs). While this may be true for groups in the non-Indigenous population of Australia, there are a number of factors which may serve to more firmly entrench these abusive patterns in Indigenous people. In his review of interventions addressing the issue of Indigenous family violence, Blagg (2000, page 2) states:

> The story of indigenous family violence is inextricably linked to the violence of colonialism and its legacy. The traumatic impact of this original 'founding violence' continues to send shock waves through indigenous communities.

An earlier review by the same author (cited in Blagg 2000) listed the following as causal factors for high rates of violence in Indigenous people:

- Marginalisation and dispossession
- Loss of land and traditional culture
- Breakdown of community kinship systems and Aboriginal law
- Entrenched poverty
- Racism
- Alcohol and drug abuse
- Effects of the policy of 'Assimilation'
- Disruptions to role and status in traditional societal structures

Another distinguishing feature of violence by Indigenous people directed at family members is that it tends to be more 'public' than such behaviour in non-Indigenous people (Memmott and Stacy 1999). As discussed by Blagg (2000), particularly in remote Indigenous communities, this behaviour tends to occur on the streets and in other public places. When alcohol is a contributing factor, escalation of violence from individual spousal assaults to the involvement of larger groups of people is common, ultimately leading to larger proportions of both males and females being charged with public order offences. Clearly, this has implications for the interpretation of crime statistics when comparing the prevalence of violence in Indigenous and non-Indigenous communities.

Injury description and monitoring

A recent report on Indigenous family violence synthesises the recent research on this issue in Australia (Memmott and Stacy 1999). Summarising approaches to describing and monitoring violent behaviour involving Indigenous people, the authors describe three common ways of presenting statistics: listing types of crimes (such a those committed in a particular region or jurisdiction); focusing on particular types of violence or injury (such as utilising homicide statistics); and community-specific studies. The authors note that nearly all published comparative analyses have found rates of violence in the Indigenous population to be higher than in the non-Indigenous population.

It is important to note that crime statistics only apply to those instances of violence which come to the attention of the criminal justice system. Also, there is evidence that Indigenous women have a pattern of interaction with the justice system which differs from that of non-Indigenous females. For instance, Indigenous women tend to be less likely than non-Indigenous women to seek help from government sources, and, due to differences in their response to violence against themselves or others near them, Indigenous women seldom fit the stereotype of 'helpless victim' (see Blagg 2000). Consequently, at the time of police intervention, it may not always be simple to distinguish victim from perpetrator. This may, at least in part, contribute to the over-representation of Indigenous women in crime statistics relative to non-Indigenous women.

The Office of Crime Statistics (in Adelaide) is involved in an ongoing project to monitor the extent, nature and outcomes of Indigenous involvement with the criminal justice system in South Australia. The first report of the project was published in 1995 and this was followed by an update in June 2000 (Pointer 2000). While no data are presented concerning the context of offending (e.g. family violence), the reports provide useful evidence on the occurrence of violence among Indigenous people that has come to the attention of the criminal justice system.

The recent Office of Crime Statistics report presents comparative data for finalised cases in Indigenous and non-Indigenous people for a range of variables including age and the nature of offences. While there were no significant differences between the two groups in the proportions of cases according to age group and sex, there were considerable differences in the nature of offences. For instance, overall 'offences against person' and 'offences against good order' accounted for 53% of major charges against Indigenous persons in 1998, but only 34% for non-Indigenous persons. Conversely, drug, robbery and extortion and sexual offences accounted for just over 3% of total charges in Indigenous people, but these offences accounted for nearly 7% of charges for non-Indigenous people. Major charge categories according to sex also revealed differing patterns. For example, 'offences against the person' or 'offences against good order' comprised the major charges for Indigenous males in 1998, while driving offences made up the major charges for non-Indigenous males. The same was true for Indigenous females during the same period, while non-Indigenous females were most likely to face 'larceny and receiving' and driving offences charges.

The Office of Crime Statistics report also presents comparative data on the outcomes for the most common major charges—specifically, 'offences against good order', 'offences against the person' and 'driving offences'. Proportionately more Indigenous persons were convicted for the first two of these and convictions were similar for driving offences, but in general the conviction patterns were similar overall. This report also presents data on penalties imposed following a guilty verdict. For instance, while Indigenous people were less likely than non-Indigenous people to have their licenses suspended (14% versus 30%), Indigenous people were twice as likely to be given a custodial sentence (11% versus 5%). Other information presented in this report includes variables associated with legal representation and bail status and information about previous convictions and imprisonments.

In principle, ICD-coded routine data on deaths and hospital separations can be used to identify cases involving interpersonal violence and, to some extent, family violence. The categories available in ICD-10-AM are outlined below. However, the subject of these codes is often sensitive, particularly in the case of violence within families, for social and legal reasons. The extent to which such cases are revealed or recognised, the extent to which they are coded as such, and whether patterns of identification differ between Indigenous and other people, or within the Indigenous population, are uncertain.

ICD-10-AM provides a range of ‘external cause of injury’ codes for use where injury is due to assault by another person (X85–Y09) (NCCH 1998). Most categories in this range distinguish types of way in which injury was inflicted, including a category for sexual assault. Other categories are for ‘neglect and abandonment’ and ‘other maltreatment syndromes’ (specified as including mental cruelty, physical abuse, sexual abuse and torture). These latter two categories, alone, provide sub-categories to allow the perpetrator of the harm to be specified (e.g. spouse, parent). Code T74 (Maltreatment syndromes) and its subcategories cover similar topics. The ICD chapter covering ‘Factors influencing health states and contact with health services’ (Chapter XXI) includes a number of categories that might be relevant to this topic.

Risk factors and mechanisms

Memmott and Stacy (1999) discuss causal factors for family violence among Indigenous people. The authors identify three categories of cause: precipitating causes (such as arguments, jealousy etc.); situational factors (such as financial problems, alcohol intoxication, etc.); and underlying issues (such as historical context). Some of these factors are likely to be difficult to include in routine sources of data.

The report of the Aboriginal and Torres Strait Islander Women’s Task Force on Violence was commissioned by the Queensland Government in order to advise on the development of policy and program initiatives to address the issue of Indigenous family violence in Queensland (Aboriginal and Torres Strait Islander Women’s Task Force on Violence 2000). This report reviews the published and unpublished material on political and social factors contributing to the escalation of violence in Indigenous communities, as well as synthesising the knowledge and experience of community members and workers in the field on these factors and possible strategies for improvement. The Task Force reported that their consultations suggest the level of violence in Indigenous communities may be far greater than is reported in the literature. However, while the report puts a compelling case for the social and historical aetiology of family violence, it provides little information that assists in measuring risk factors in at-risk communities.

Performance of interventions

It is beyond the scope of this report to comprehensively review all interventions that are aimed at reducing family violence, a task complicated by a lack of formal evaluation and documentation. The following paragraphs are based on some documented examples.

The National Crime Prevention research which informed the recent report by Memmott and Stacy (1999) involved the collection and description of a large number of programs and strategies addressing violence in Indigenous communities across Australia. The authors have categorised the approaches used into four groups: early reactive programs (such as Night Patrol, Women’s refuges, etc.); late reactive programs (e.g. counselling, conflict resolution, etc.); early proactive programs (e.g. diversionary activity programs, education methods, etc); and late proactive programs (such as removal of ‘at-risk’ youths; mediation, etc.). This review underscores the gaps in the focus of interventions. For instance, the authors found a lack of programs addressing particularly prevalent types of assault (e.g. spousal assaults and homicide). In addition, the analysis revealed that there was a general failure to define the specific violent behaviours targeted by programs and that formal evaluation of these interventions was rare. A general lack of violence programs in communities overall was also noted by the authors. They state (page 10):

> From the widespread lack of existing services it is obvious that in many cases, both governments and communities have not 'faced up' to violence both in terms of the implementation of local programs and the provision of adequate and appropriate support services.

Memmott and Stacy strongly emphasise the need for a continuing partnership between community groups, government and non-government service delivery agencies and government entities such as the justice system. The 'Justice Programs', which are typically aimed at dealing with perpetrators of violence in a culturally sensitive and community approved way, provide an example. These programs usually involve the formation of an advisory committee made up by respected community members. The committee then works with both the offender and the criminal justice agencies to develop appropriate penalties and rehabilitation plans. One particular example given by Memmott and Stacy is the Kowanyama Community Justice Group (northern Queensland), the members of which are Elders with an understanding of customary law and practice as applied to contemporary life styles. The Justice Group performs the role of mediators, and counsellors and its members are empowered to act as protagonists and advocates within the Criminal Justice System. One quantitative indicator of the effectiveness of this program has been a reduction in the numbers of juveniles appearing before the court—approximately one-third over 3 years.

Blagg (2000) reported on models for intervention for Indigenous individuals in crisis as a result of family violence. The report included a literature review of Australian and International crisis intervention programs of relevance to Indigenous Australians and presents a number of recommendations for future policy planning. Blagg summarises a number of initiatives either aimed specifically at family violence or which address some of the identified contributing factors, such as the misuse of alcohol and other drugs. The author provides various examples of local, jurisdiction and nationwide initiatives. While the detail provided in this report about specific interventions is insufficient for the purpose of providing information about the effectiveness of the various interventions, it does provide good summary information of recent reports for further research.

A strategy referred to by Blagg (2000) is the New South Wales Aboriginal Family Health Strategy. As described by the author, this initiative is aimed at reducing family violence and sexual assault in Aboriginal Communities. Yet to be fully implemented, the objectives of the strategy are to establish a range of community-controlled Indigenous family health projects, including safe houses (long- and short-term accommodation for men, women and children), crisis care services, assistance in reporting and prevention programmes. The New South Wales Department of Health (www.health.nsw.gov.au/policy/aboriginal-health/afhs), lists a number of potential performance indicators for evaluation of the efficacy of the project including: the level of criminal reporting; prosecution and convictions for family violence and sexual assault and community; the prevalence of alcohol and drug use in communities; and community reports of family violence and sexual abuse to others within the community. Qualitative indicators, such as satisfaction of consumers and service providers with the strategies, are also suggested. However, a formal evaluation of the Strategy against these indicators is yet to be published.

Implementation of interventions

As is the case for other topics, information sources for this category proved difficult to locate. While sources (perhaps unpublished) may exist, the search that was possible within the scope of this project turned up few.

Memmot and Stacy (1999) describe a wide-spread consensus that community-controlled, rather than government-operated, programs are more likely to be effective in reducing family violence. The authors state (page 12):

> Once community-based 'grass roots' programmes become successful and publicised, they are likely to spread, and be adapted elsewhere in Indigenous Australia.

Night patrols are proposed by the authors as an example of the propagation of programmes. They began in Tenant Creek, were taken up in Alice Springs and Katherine and then spread to remote Central Australian communities. Night Patrols are now being adapted for urban communities as well and are in use in Western Australia, Queensland, New South Wales and the Northern Territory.

Suicide and intentional self-harm

Suicide and intentional self-harm became prominent as public and government issues in the general community in Australia in the second half of the 1990s, with a particular focus on youth suicide. The 'National Youth Suicide Prevention Strategy' ran from 1995–1999.

This program has been followed by the 'National Suicide Prevention Strategy', funded in the 1999–2000 Federal Budget for four years from July 1999. A strategic framework, intended to guide suicide prevention activities across the whole community, is provided by the 'LIFE Framework', a set of documents developed by the National Advisory Council on Youth Suicide Prevention (Commonwealth Department of Health and Aged Care 2000a, Commonwealth Department of Health and Aged Care 2000b, Commonwealth Department of Health and Aged Care 2000c).

The Commonwealth Department of Health and Aged Care commissioned the Australian Institute of Family Studies to evaluate the National Youth Suicide Prevention Strategy. This project resulted in an overview report and four supplementary technical reports (Mitchell 2000a, Mitchell 2000b, Mitchell 2000c, Mitchell 2000d, Mitchell 2000e).

Much of the extensive literature on suicide occurrence, risk factors and prevention has been considered in three literature reviews commissioned under the National Youth Suicide Prevention Strategy (NHMRC 1999). Some key points from these reviews and other sources provide a context in which to consider suicide and self-harm in Indigenous populations in Australia.

> **Occurrence**: Suicide rates have risen rapidly for young men since the 1970s, especially in the third and fourth decades of life. Hanging has replaced shooting as the most common method, and has become much the most common method. Hospitalisation following attempted suicide (usually by

overdose) is at least as common among women as among men (Steenkamp and Harrison 2000).

Risk factors: Of the many factors that have been reported to be associated with suicide, a smaller number are established as important and probably independent risk factors. Several groups of these factors can be distinguished: certain mental disorders (especially clinical depression), substance abuse; social disadvantage; disrupted circumstances in childhood; personal or family history of suicidal behaviour; and stressful life events, including legal and disciplinary crises (Beautrais, in NHMRC, 1999).

Prevention: The fairly low incidence of suicide, even in most groups at relatively high risk, is one of several characteristics that complicate formal evaluation of the effectiveness of preventive interventions. Nevertheless, there is emerging evidence in favour of several types of intervention (Goldney 1998, Hawton, Townsend et al. 2001).

The scope of the issue is not sharply defined or universally agreed. Depending on the perspective adopted, deliberate self-destruction, recklessly dangerous behaviours, self-mutilation, etc. may be seen as separate or related phenomena. Similarly, connections are found between this ‘internally directed violence’ and ‘externally directed violence’ manifesting as assault, etc.

The Indigenous population of Australia has some characteristics which, considered in the light of evidence on risk factors for suicide, suggest that elevated suicide risk might be expected. These include widespread experience of social disruption during childhood (i.e. removal from parents; residence in fringe communities), poverty and high rates of incarceration (ABS and AIHW 1999, Hunter 1999, Tatz et al. 1999).

Suicide and related behaviours among Indigenous Australians began to receive attention in the late 1980s, especially in the context of investigations of deaths in custody (Royal Commission into Aboriginal Deaths in Custody 1991). Contrary to previous views that suicide was uncommon among Indigenous Australians (especially those who maintained a traditional lifestyle) it became apparent that suicide was occurring at high and increasing rates, particularly among young men (Clayer and Czechowicz 1991, Hunter 1988).

Tatz argues that ‘Aboriginal suicide is different’ in a report focusing on youth suicide in New South Wales, the Australian Capital Territory and New Zealand (Tatz 1999). Aspects of the difference are the context of crisis in many Aboriginal communities, combined with the complex of social, political and economic factors characterising the history and contemporary situation of Aboriginal peoples. Another aspect of difference is the higher rate and rapid emergence of suicide, especially among young males. Tatz argues that suicide is a component of a ‘new violence’ in Indigenous communities which has arisen, at least partly, in response to the removal of the ‘often draconian structures’ that prevailed until the 1970s and whose operation did little to allow or promote meaningful communities or autonomy.

As noted in Chapter 3, routine data sources did not identify Indigenous Australians as such until relatively recently (e.g. 1988 in the case of national deaths data for most of Australia), and ascertainment remains incomplete. Only where special studies were conducted was it possible to investigate suicide rates and trends in this part of the population. A study of suicide in South Australia in the period 1981–1988 reported a rapid rise in Indigenous suicide rates in this period, from rates similar to those in the non-Indigenous South Australian population to rates several times higher (Clayer and Czechowicz 1991).

Injury description and monitoring

A recent report on deaths and hospitalisation due to suicide and self-harm in Australia includes a chapter on suicide mortality in the Indigenous population (Steenkamp and Harrison 2000). Routine mortality data are used to describe levels and patterns of occurrence, and issues related to data quality and availability are discussed. The routine national mortality collection (from the Australian Bureau of Statistics) remains the best primary source of data on Indigenous suicide deaths, although interpretation of these data is complicated by the continuing uncertainties surrounding the identification of Indigenous status and the quality of data for Indigenous populations in general. In addition, there are uncertainties about the reliability of suicide case identification in general and it is unclear if reliability of identification differs for suicide in Indigenous people. With these cautions, the report presents statistics on suicide in the Indigenous population for the years 1988–1998. Data are presented for South Australia, Western Australia and the Northern Territory and (with further limitations and caveats) for other jurisdictions. Suicide rates appear to be higher for Indigenous Australians than others, especially for young adults.

Several authors have described Indigenous suicide and related behaviours in particular communities or regions.

As noted above, Clayer and Czechowicz (1991) examined coronial records in South Australia for the period 1981–1988 to identify and characterise suicide deaths in the Indigenous and non-Indigenous populations. They took special care to determine whether persons who had died by suicide were Indigenous. This included involvement of an Aboriginal health worker in screening names and addresses for cases likely to be Indigenous, and consulting with local Indigenous communities. Despite this the authors concluded that ascertainment was still incomplete. While small case numbers limit interpretation, the rise in suicide incidence among Indigenous South Australians was at least as great for metropolitan-dwelling people as for those living elsewhere. The authors did not comment on the possibility that their case ascertainment might have been most complete for the period closest to the time that they undertook the study. If present, such a bias could partly explain the steeply rising trend reported.

Hunter described patterns in the Kimberley in a series of papers mainly published in the late 1980s and early 1990s (Hunter 1988, Hunter 1990, Hunter 1991a, Hunter 1991b, Hunter 1991c, Hunter 1991d). This work is mentioned in the following section due to its strong focus on aetiology. However, Hunter’s work is also a careful documentation, based on a range of types of data, of the emergence of suicide in a population in which the phenomenon had been rare or absent.

More recently, Hunter and others have undertaken similarly thorough and thoughtful work concerning suicide in Indigenous communities of North Queensland (Hunter, Reser 1999). They focused on three communities—Palm Island, Mornington Island and Yarrabah, considering the latter in particular detail. Sources included a State suicide register, local records and community knowledge. The process used revealed a relatively small number of anomalies that might have resulted in misclassification, and these were corrected. However, the authors point out that the method used may not have identified Indigenous cases erroneously identified as non-Indigenous. Hunter et al. found rapid emergence of suicide in these communities, rising to high levels. The deaths were predominantly of young men by means of hanging. The timing of the epidemics differed between the three communities.

The current revision of the International Classification of Diseases, ICD-10, provides a range of categories for coding ‘Intentional self-harm’ (X60–X84). The codes in this range allow methods of self-harm to be distinguished. As noted above, the scope of ‘self-harm’ is not sharply defined or universally agreed, and this is reflected in the specification and use of categories in the ICD. For example, differences in coding practice between States have been evident in hospital separations data until recently. One approach appears to have coded nearly all opiate overdoses as ‘intentional self-harm’, while the other has regarded many such cases as ‘accidental poisoning’ (J Harrison, unpublished). Similar variation in interpretation and coding practice might well affect decisions concerning behaviours such as petrol-sniffing, which are undoubtedly ‘self-harming’, but less obviously intentionally so. As for family violence, intentional self-harm is sometimes seen as shameful (though it is no longer illegal in Australia). Consequently, doubts arise concerning the extent to which this cause for injury or poisoning is volunteered, suspected or recorded, and whether under-recognition differs between Indigenous and other parts of the population, or within the Indigenous population. These questions concerning the quality of data warrant investigation, particularly if there is a wish to use mortality and hospital morbidity data to assess trends in incidence.

Suicides in custody by Indigenous people were a prominent aspect of the investigations of the Royal Commission into Aboriginal Deaths in Custody (Royal Commission into Aboriginal Deaths in Custody 1991). Such deaths continue to occur. In 1999, for example, 3 Indigenous people died by hanging while in police custody, and three more while in prison (Dalton 2000). It should be noted that the great majority of suicide deaths by Indigenous people in recent years occurred while not in custody (Steenkamp and Harrison 2000). Suicides in custody thus do not account directly for the high and rising numbers of suicides by Indigenous people. It has been suggested, however, that the clusters of suicide in custody that were a subject of the Royal Commission, and social and media responses to them, may have contributed to subsequent rise in suicide deaths in some communities (Hunter, Reser et al. 1999).

Risk factors and mechanisms

A series of papers by Ernest Hunter did much to reveal and explain this emerging problem, at least in the Kimberley region of Western Australia (Hunter 1988, Hunter 1990, Hunter 1991a, Hunter 1991b, Hunter 1991c, Hunter 1991d). Hunter placed risk factors for suicide and self-mutilation (such as alcohol abuse, psychiatric illness and disrupted relationships) into a particular socio-historical context. A relatively stable relationship between Indigenous communities, the cattle industry and missions was disrupted after the mid-1960s by technical, legal and other changes. Consequences included increased consumption of alcohol and the rapid emergence of largely unstructured ‘town camp’ communities in which poverty, unemployment and economic dependency were usual. Increased interpersonal violence occurred in the generations that were already mature at the time of this disruption. Self-harm, including suicide, emerged in the subsequent generations of people, who grew up in the disrupted communities. In the Kimberley Region, as in similarly affected Indigenous communities elsewhere, suicide has been especially a response by young males. Reflecting on earlier work by Robillard in Micronesia, Hunter pointed to ‘the breakdown of social systems structuring the difficult transitional period of male adolescence, compounded by a loss of their avenues for social recognition and self-esteem’ (Hunter 1990).

More recent work by Hunter and others, mentioned above, takes the form of a detailed assessment of the ‘historical, cultural and symbolic landscape’ of suicides in three remote Indigenous communities in North Queensland (Hunter, Reser et al. 1999). The authors note clustering of cases in time and place, and very frequent presence of certain patterns of use of alcohol and other drugs. The deaths often followed interpersonal conflict, and occurred in families having a history of similar events. The authors explore two themes to great depth. (The second theme is summarised in the next section). The first theme is the symbolism, meaning and cultural context of suicide by hanging in these communities. Some idea of the potential impact of these events can be gained by considering the example of one quite small community in which 20 deaths by suicide occurred in 5.5 years, 18 by hanging.

Relatively few reports deal with suicide and related behaviours by Indigenous people in urban settings. A recent study of self-harm among Aboriginal and non-Aboriginal sole parents in Adelaide found a history of suicide attempt to be less common among Aboriginal than among non-Aboriginal participants. Factors associated with history of suicide attempt included alcohol abuse in the family, physical and sexual abuse, poor self esteem and discriminatory treatment. The authors concluded that class explained the differences observed and ethnicity did not (Radford, Brice et al. 1999).

Performance of interventions

Little documentary evidence was found of the performance of preventive interventions directed against suicide by Indigenous people in Australia. Exceptions are described below, followed by an overview of response to Indigenous suicide in national suicide prevention programs.

‘The Yarrabah Story,’ the second of the two in-depth themes of the report by Hunter and colleagues concerning suicide in North Queensland, is an unusually detailed account of an epidemic of suicide in one community, its context and responses to it, together with an evaluation (Hunter, Reser et al. 1999). Clusters of suicides during the early 1990s engendered a sense of crisis, which persisted for several years. A critical stage in reaction came with community acceptance of suicide as an issue demanding action. This provided the basis for a community-based response which (despite difficulties and set-backs) achieved a shift from ‘simply attempting to identify individuals at risk and dealing with crises as they developed to focusing on a condition of risk impacting the community as a whole’ (p. 80). Examples of the latter responses were the introduction and development of Family Life Promotion Officers, and the eventual closure of the community canteen (the alcohol outlet). Whereas suicide case numbers rose during the late 1990s in the Indigenous populations of Palm Island and Mornington Island, they declined in Yarrabah. While case numbers of suicide deaths were small, the finding is confirmed by a parallel steep decline in the much larger numbers of presentations of threatened or actual self-harm to the Life Promotion Officer program at Yarrabah.

‘Family WellBeing’ is a course designed by and for Indigenous Australians to promote personal empowerment. It was implemented in Alice Springs in 1998 as part of a response to increasing suicides and attempted suicides in Indigenous communities. An evaluation of the program has been published recently (Tsey and Every 2000). The evaluation focused on qualitative assessments of skills, satisfaction and attitudes of course participants. The evaluation also documented the development and implementation of the program. The evaluators concluded that the program had improved participants' capacity in life skills and problem solving. Evidence of a specific impact on suicide or related behaviour was neither sought nor anticipated, in the short term at any rate. The authors noted that few men had chosen to participate.

The lack of (documented) interventions against suicide by Indigenous people deficiency has been recognised, and young Indigenous people were declared to be a 'target group' for the National Youth Suicide Prevention Program.

The review of the program indicates that achievements in this aspect of the program were somewhat limited. The author found that 'Projects in the area of early intervention and engagement for young people did not adequately explore issues of access and engagement for … Aboriginal and Torres Strait Islander young people' (Mitchell 2000e). Deficiencies in regard to Indigenous people were noted for 'postvention' projects (p. 97), assessment of accessibility of programs (p. 111) and use of existing mechanisms for collaboration (p. 120).

Aspects of the program relevant to suicide prevention among Indigenous Australians were considered further in the four technical reports, which elaborate upon the overview report (Mitchell 2000a, Mitchell 2000b, Mitchell 2000c, Mitchell 2000d). The Yarabah project was reviewed carefully and positively in the report on 'Building Capacity' (Mitchell 2000a). The Shoalhaven Combined Services Project was cited as a positive example of professional interaction, including the hospital Aboriginal Liaison Officer. The 'Resourceful Families Project' team re-wrote pre-existing materials to produce a version appropriate for use in Indigenous communities, which was assessed favourably by the external reviewer of the project (Mitchell 2000c).

The overview volume of the review of the NYSPS includes a recommendation that 'future suicide prevention initiatives should … include a major focus on special populations who have been identified as being particularly at risk for negative outcomes, or who experience additional barriers to service access, such as … Aboriginal and Torres Strait Islander people …' (Mitchell 2000e). Other recommendations in the same report were that young Indigenous people should be a priority group for research into participation of people at risk in community-based early intervention programs, and that 'culturally appropriate intervention strategies' should be undertaken within Indigenous communities to 'reduce access to hanging as a means of suicide'.

The NYSPS concluded in 1999, and was succeeded by a new, four-year, National Suicide Prevention Strategy. The new strategy 'will continue to focus on youth suicide and will be expanded to include other age groups and those identified as being at high-risk, such as young adult men, rural residents, the elderly, people with mental illnesses, people with substance use problems, prisoners, rural communities, and Aboriginal and Torres Strait Islander communities'. (www.mentalhealth.gov.au/sp/nsps/index.htm, 16 July 2001).

As noted earlier, the 'LIFE Framework' documents are intended to guide suicide prevention activities across the whole community (Commonwealth Department of Health and Aged Care 2000a, Commonwealth Department of Health and Aged Care

2000b, Commonwealth Department of Health and Aged Care 2000c). 'Partnerships with Aboriginal and Torres Strait Islander peoples' is one of the six 'Action Areas' specified in the 'LIFE Framework'.

Initiatives in this Action Area are intended 'to provide culturally appropriate programs (universal, selective and indicated) which support community responses to high rates of suicide in Aboriginal and Torres Strait Islander communities'. The LIFE Framework documentation of this Action Area quotes the views of several authors and committees on desirable principles for the design, operation and control of programs designed to prevent suicide by Indigenous people (Commonwealth Department of Health and Aged Care 2000a).

The document notes the community-based development of prevention programs at Yarrabah and Palm Island, and the development of a prevention plan by the Western Australian government in partnership with Indigenous people. The documentation makes little reference to published documentation of interventions directed to reducing suicide and related behaviours by Indigenous people, or evidence of their effectiveness, acceptability or other characteristics. Strategies and performance indicators are stated for two 'Process Outcomes'. One of these concerns community-based and culturally appropriate prevention programs. The other is about increasing the relevance of mainstream services and prevention programs to Indigenous people.

The strategies and indicators for this Action Area are reproduced here:

Table 4.1: LIFE Framework. Strategies and indicators, Action Area 5: Partnerships with Aboriginal and Torres Strait Islander peoples.

OUTCOME 5.1

Share information about and implement life-affirming and suicide-prevention programs that are community based and grounded in the culture of Aboriginal and Torres Strait Islander peoples. (Process outcome).

Strategies	Performance Indicators
• Identify effective and culturally acceptable life promotion and suicide prevention approaches. • Develop mechanisms for inter-community dialogue and exchange about these projects. • Ensure capacity for timely linkages between communities with recognised expertise, and those in crisis. • Encourage wider implementation and local adaptation of these approaches in other urban, rural and remote settings. • Ensure recurrent funding for proven programs. • Encourage community control of these programs and related activities. • Ensure cross-sectoral support for such programs. • Enhance mainstream support for communitybased programs and communities in need. • Support programs to provide alternatives to custodial care for younger Aboriginal and Torres Strait Islander men.	• Increased resources for suicide prevention programs in Aboriginal and Torres Strait Islander communities, and feedback and evaluation of services developed by people involved in the program. • Feedback by training participants on the cultural appropriateness of training.

OUTCOME 5.2

Increase the relevance of mainstream services and suicide prevention programs and services to the culture, needs and strengths of Aboriginal and Torres Strait Islander peoples. (Process outcome).

Strategies	Performance Indicators
• Enhance information and training support to mainstream and Aboriginal and Torres Strait Islander health and community agencies on suicide and self-harming behaviours. • Increase the input of Aboriginal and Torres Strait Islander peoples into service and program development. • Develop effective mechanisms for disseminating information on services and programs to all Aboriginal and Torres Strait Islander communities. • Enhance linkages and protocols between services working with Aboriginal and Torres Strait Islander people at risk of suicide. • Ensure consideration of the needs of Aboriginal and Torres Strait Islander peoples in mainstream services and suicide prevention programs, including primary care, mental health services, drug and alcohol services (see strategies under Outcome 4.4), correctional services programs and custodial care. • Work in partnership with Aboriginal and Torres Strait Islander agencies and communities to develop strategies on media responses to suicide-related issues.	• Involvement of Aboriginal and Torres Strait Islander organisations and communities in the design of mainstream strategies and programs. • Increased presence of Aboriginal and Torres Strait Islander professionals in mainstream services and suicide prevention programs. • Presence of support services and activities for Aboriginal and Torres Strait Islander employees within mainstream services. • Increased numbers of people in Aboriginal and Torres Strait Islander services and communities, and mainstream services, who have received training in prevention of suicide and self-harm. • Increased numbers of services which have an ongoing training strategy in the prevention of suicide and self-harm. • Increased mainstream services with defined training programs for working in Aboriginal and Torres Strait Islander settings and with Aboriginal and Torres Strait Islander clients, and increased numbers of employees completing these courses. • Participation of community members, service providers and organisations in approaches to suicide prevention. • Positive feedback from Aboriginal and Torres Strait Islander groups on the appropriateness of activities.

Source: Commonwealth Department of Health and Aged Care (2000) Living is for everyone: a framework for prevention of suicide and self-harm in Australia. Areas for action.

Implementation of interventions

As noted in the previous section, Hunter (1999) provides a detailed account of the origin and evolution of a preventive intervention in one community. No sources were found which provide more general or systematic assessment of the extent or distribution of interventions focusing on prevention of suicide and self-harm in Indigenous communities.

5 Summary and discussion

Summary

As stated in *Chapter 1*, ‘this report is intended to provide a guide to information sources which are being used to inform or support prevention of injury in the Indigenous population, and to sources which could be used for this purpose’. It was commissioned by the Commonwealth Department of Health and Aged Care as an input to the development of an implementation plan for Aboriginal and Torres Strait Islander injury prevention, in the context of the National Aboriginal and Torres Strait Islander Health Policy and the National Injury Prevention Action Plan.

Chapter 2 provides background and a framework for the more specific information provided in later Chapters. The background includes a brief overview of the historical context for contemporary Indigenous health and an outline of previous findings concerning injury burden in this population. Despite data limitations, it is clear that injury mortality and morbidity rates are several times higher for Indigenous Australians than for other Australians. The remainder of Chapter 2 comprises a conceptual framework for considering information for public health, and introductions to major themes and sources concerning information for Indigenous health and information for injury prevention.

Chapter 3 is a survey of information sources that are, or could be, used for prevention of injury in the Indigenous population of Australia. Most of the sources are not restricted to the Indigenous population (e.g. routine mortality data, hospital data and censuses). Consequently, key questions are whether, and with what quality, these sources identify Indigenous cases among all cases. Identification has been and remains the dominant issue in reports on the use of these sources for purposes concerning Indigenous health.

With few exceptions, these sources now include data items and processes which, in principle, should allow the identification of Indigenous cases in the collections. Consequently, attention has tended to shift to the quality of this identification. Despite the considerable attention paid to this issue in recent years, quality remains too poor or uncertain to satisfy most analysts that it is adequate to allow meaningful reporting of rates of death or hospitalisation in most jurisdictions, or for key purposes—notably for assessing trends in rates over time. Furthermore, changes in quality might occur at different times in different places or in different data sources. The problem of measuring trends is complicated by the fact that this requires case data (e.g. deaths or hospitalised cases) and population data, and quality concerns apply to all of these sources. Changes over time in observed rates might be due to changes in injury incidence, or changes in the quality of one or both of the data sources used to calculate them. Nevertheless, available data are adequate to show that burden of injury is much higher for Indigenous Australians than it is for the Australian population as a whole, and to characterise its patterns of occurrence.

Several other points made in Chapter 3 warrant mention here.

1. The importance of coronial records should not be underestimated. Almost all deaths recorded as being of Indigenous people and due to injury are certified by a coroner. (Indeed, over one in three of all deaths of people recorded as being Indigenous are certified by a coroner, two-and-a-half times the proportion of other deaths.) Consequently, the quality of Indigenous identification among the 15 per cent of all deaths which are certified by a coroner is of great importance for the issue of injury among Indigenous Australians.

2. Developments such as the BEACH survey of general practice and the Primary Care Information System in the Northern Territory are beginning to open the way to information on cases of injury which do not result in death or admission to a hospital. However, the value of these sources for injury prevention remains to be established.

3. Population surveys, including Computer Assisted Telephone Interviews, are emerging as important sources of information on risk factors and other matters, to complement information on injury burden. It will be important to ensure that injury prevention in the Indigenous population is given due weight in deciding which items will be included in these instruments.

4. Local sources of information (e.g. clinic records) are numerous and vary in their purpose, contents, quality and availability for injury prevention purposes. It was beyond the scope of this project to document them exhaustively. Nevertheless, examples cited in the report indicate that at least some have potential to be used in this way. Crucial to such use is the presence of sound relationships between information owners and intending researchers.

5. The Australian Indigenous HealthInfoNet is a uniquely rich secondary source of information on injury in the Indigenous population, and its prevention. Continued maintenance and further development will increase its value. Development could usefully include an expanded section or 'portal' within the site devoted to sources concerning injury and its prevention.

Chapter 4 focuses on six specific topics within the compass of 'injury' and reviews available information sources relevant to each. Information sources for each topic were considered in relation to four ways in which they could contribute to injury prevention: injury description and monitoring, identifying and measuring risk factors and mechanisms, evaluating the performance of interventions, and assessing the implementation of interventions.

Some of the issues revealed by this review have far-reaching implications, while others apply to a particular injury issue or to information of a particular type.

In overview, the topic-specific review confirmed the primacy of Indigenous identification as an issue of overarching importance and ongoing concern. No matter the quality of data in other respects, incomplete identification of Indigenous status seriously reduces their value for injury prevention.

Patterns of information availability and lack that were identified in the topic-specific review are discussed below.

Injury description and monitoring

Information suitable for injury description and monitoring (mortality data, hospital separations data, and perhaps clinic records) might be expected to be equally available for each injury topic considered, assuming adequate identification of Indigenous cases. However, this is not so, and there is considerable variation in the potential of these sources for the six injury topics considered.

Factors accounting for this difference include classification systems, difficulties in identifying cases involving certain ‘external causes’ of injury or poisoning, the extent of case information in sources, and the scope of data sources. Some of these factors apply generally to the data sources, and not specifically to Indigenous cases (e.g. the availability of a particular category in a classification). However, the impact of these factors may differ for Indigenous cases and other cases (e.g. if the proportion of Indigenous cases affected by a factor is relatively high).

Classification. The International Classification of Diseases (ICD) includes categories that are better able to distinguish some of the six topics considered than others. The ICD provides several categories concerning alcohol involvement (e.g. acute poisoning, dependency syndromes etc) which, in principle, provide quite good opportunities for recording cases of alcohol-related mortality and morbidity (but see *Identification*, below). The ICD allows for identification of morbidity due to some other drugs and poisons, distinguishing (for example) between opiates, heroin, methadone and amphetamine use, and between acute toxicity and dependency syndromes. The versions of ICD used to code deaths have been a little less specific than those used for morbidity coding (e.g. heroin is not distinguished from other opiates in ICD-9 but is in ICD-9-CM). This difference has reduced with the introduction of the tenth revision. ICD-9 is of limited value for identifying cases of injury due to abuse of volatile substances because only rather non-specific categories were provided. ICD-10 provides more specific categories for this topic. Neither ICD-9 nor ICD-10 provides specific categories for kava consumption and its effects.

Generally more adequate categories are available for road injury, intentional self-harm and interpersonal violence. However, improvements could be made, even for these topics. For example, multiple occupants travelling in the open load-space of utilities etc. has been recognised as a particular feature of road injury of Indigenous people, and the ICD does not enable identification of events with these characteristics. Self-harm encompasses a complex of phenomena, including (attempted) suicide and self-mutilation. The ICD does not provide much assistance in distinguishing between these entities, either to coders or users of data. Concerning interpersonal violence, the ICD provides categories to allow the perpetrator of some cases to be indicated (those coded to ‘Neglect and abandonment’ or ‘Other maltreatment syndromes’). However, this distinction is not available for most cases of injury due to interpersonal violence.

Identification of ‘external causes’. Issues related to many of the topics reviewed might affect the feasibility or likelihood of relevant information being recorded, even if necessary coding categories are available. For example, identification of cases of alcohol-related injury is complicated by factors such as delay between injury occurrence and case assessment, at a hospital or by a coroner. This might impact differentially on Indigenous people, who are more likely than others to reside in rural and remote areas. Also, health sector information sources generally do not identify injuries attributable to alcohol consumption by a person other than the injured person. The sometimes clandestine nature of abuse of volatile substances and illegal drugs and the sensitive nature of family violence and (attempted) suicide may result in reluctance to self-identify as cases, or for family members to do so on behalf of an injured person. Such factors might differ in degree between Indigenous and non-Indigenous populations, and within the Indigenous population.

Extent of case information. Routine data sources generally provide little detail concerning circumstances and mechanisms of injury occurrence. Effective injury prevention requires more detailed information, which may be obtained on samples of cases, or in particular settings. The National Coronial Information System is expected to provide more detailed information than most routine sources, but this is restricted to the small minority of injuries that are fatal. The new International Classification of External Causes of Injury (ICECI) exemplifies an approach to obtaining more detailed information for injury prevention. It could be developed further to meet specific needs for prevention of injury in Australian Indigenous communities.

Scope of collection. Information is generally lacking on cases of injury receiving ‘ambulatory’ treatment, in clinics (including Indigenous-controlled services), general practices and emergency departments. Emergency departments, in particular, have been shown to be sites in which data on injuries and the circumstances of their occurrence can be collected, though presently with considerable technical barriers to achieving quantitative precision (both for case ascertainment in general and Indigenous identification in particular). The BEACH survey is beginning to provide useful information on GP services, though this lacks information about ‘external causes’ of injury.

Risk factors and mechanisms

The availability of information allowing for the determination of risk factors and mechanisms of injury in Indigenous people varies across the specific topic areas considered. With the partial exceptions of alcohol and road injuries, epidemiological investigations of risk factors and preventive factors are lacking. Collection of information on some specific risk factors for road injury (such as riding in the open load spaces of vehicles) is receiving increasing attention in Western Australia and the Northern Territory. It is not clear whether this information can be generalised to other jurisdictions.

Surveys are an important source of risk factor information. These can obtain topic-specific data on community knowledge and attitudes concerning injury and its prevention. Relatively good survey data is available for some topics, such as alcohol and illicit drug misuse (see National Drug Strategy 1995). Some studies have specifically focused on the quantification of risk factors – such as consumption patterns for illicit drugs and kava (Clough, Burns et al. 2000, Larson, Shannon et al. 1999). Nonetheless, information sources about risk factors and mechanisms across most injury topics must be considered less than complete.

Performance of interventions

Information suitable for evaluating the performance of interventions is extremely patchy overall. This is particularly the case for assessments of efficacy. Where jurisdiction-wide programs have been instituted or where numerous interventions have targeted the same topic, there does appear to be a growing body of information. For instance, government-supported programs aimed at reducing the harm associated with alcohol in the Northern Territory have been evaluated using population data to calculate changes in alcohol consumption.

Community-level interventions are quite numerous, especially in the topic areas of alcohol and (more recently) violence. The literature that we assessed indicates that most programs remain largely undocumented, and documented evaluations are rare. Formal documentation of community-level interventions aimed at issues other than alcohol misuse appears to be uncommon.

Implementation of interventions

Documentation of the extent and distribution of implementation of interventions is essentially non-existent for most topics. Direct surveys provide a good method for estimating the extent of some interventions (e.g. awareness campaigns, proportions of the population influenced by the intervention). The main survey source uncovered in the current review was the Household Survey of Urban Aboriginal and Torres Strait Islander People (National Drug Strategy 1995), which asked about awareness of specific campaigns and strategies. Described in the previous chapter, good information on the implementation of government-level road injury prevention strategies in Western Australia is available, but it is not clear whether this information is applicable to other jurisdictions.

Discussion

The role of this report

This document was prompted by recognition of a need to 'take stock' of the extent of information and information sources that are currently available, and to identify potentially important gaps.

Subsequent use of the information in the report as an ingredient for policy formulation, as a basis for priority setting, etc. should take place in ways that involve Indigenous people.

For example, one aim of a National Indigenous Injury Action Plan might be to start discussion in Indigenous communities and within Indigenous organisations about the relative importance of injury prevention in relation to other priorities, and whether more needs to be done. This report could be used as a resource in this process. Without such a discussion, an injury strategy might always remain on the back burner. Interventions are more likely to be acceptable and sustainable if they are community-driven. The last section of this chapter describes several other issues which might be the subject of discussion in Indigenous organisations.

Whilst the importance of Indigenous community involvement and control is recognised, health authorities and public health experts in the field have responsibilities to collate available information and present options for action in this area of obvious public health importance. This report is part of a response to that responsibility.

What do we know?

Available mortality and morbidity are sufficient to show that Indigenous injury is a major problem, though data limitations leave us uncertain about trends, many risk factors and other important matters. Illustrative examples of available information are given in Chapters 3 and 4.

While the severe limitations of available information concerning injury prevention in Indigenous communities should not be down-played, it should be noted that much of this information is also lacking concerning injury and injury prevention in the general community (AIHW and DHFS 1998).

The literature indicates that injuries and their prevention in Australian Indigenous communities tend largely to be seen in terms of a series of discrete issues (alcohol and injury, road injury, etc.). An 'injury prevention' perspective in which commonality is seen between a range of 'external causes' exists, but is not widespread. Among these discrete topics, the greatest level of attention has been given to alcohol and its effects. While topic-specific approaches are useful, it may be that gains might be made by also considering risk factors and outcomes more broadly. It appears likely that the possible benefits of an injury prevention approach, targeting a broader range of risk factors and outcomes, have not yet been considered by many Indigenous communities.

Starting from this foundation, further information source development and data collection should focus on those gaps that most directly impede preventative action. Setting priorities among gaps in knowledge and potential topics for future research must involve Indigenous people.

What are the gaps?

Specific gaps in information concerning injury in Indigenous communities were discussed in Chapters 3 and 4 and earlier in this chapter. In short, current sources are generally inadequate for assessment of trends, identification and quantification of most risk factors, evaluation of the efficacy and other properties of most interventions, and assessment and monitoring of the extent and distribution of the implementation of most interventions. This section points to some other gaps, which were not identified earlier.

Urban Indigenous communities. Much of the information that we have found tends to focus on the part of the Indigenous population that lives in remote and rural communities. A relative gap in information concerning injury and its prevention in urban Indigenous communities.

Rehabilitation and long term effects of injury. We have focused on the circumstances and acute effects of trauma. This largely reflects the data that are available. While most cases of injury result in good recovery, some do not, and it will be important to consider the long-term consequences of injury in Indigenous communities. Indigenous people living in remote communities are likely to have less access to rehabilitative services by virtue of their distance from health centres (perhaps complicated by lack of access to transport, due to high cost in relation to available resources). Another likely factor is non-availability of culturally appropriate services.

Future patterns of health burden. While good information about present health status is necessary, it is not an infallible guide to future patterns. Population projections may be inaccurate due to uncertainties surrounding base assumptions, and even relatively accurate projections of population may fail to identify future health needs. Patterns of morbidity amongst both Indigenous and non-Indigenous populations are subject to considerable change over time which may not be reflected in overall mortality statistics. For example, while life expectancy at birth of Indigenous Australians has remained at similar levels for the past two or three decades, there has been a considerable shift from a predominance of infectious disease to so-called ‘lifestyle’ diseases during this period (Miller and Torzillo 1996). Patterns of morbidity and mortality will continue to be shaped by socioeconomic, political and historical factors as well as being mediated by developments in medical technology and services.

Future priorities and perspectives. Views of Indigenous people, policymakers and academics on issues relevant to Indigenous health and injury prevention have evolved quite quickly in recent years, and may well continue to do so. Changes may affect assessments of what information is required, from whom, for whom and for which purposes. The changes will be reflected in a changing operational and policy context. Examples of initiatives that might reflect and prompt such changes in the near term are the recent NPHP *Project Brief for the development of best practice guidelines for public health strategy development, audit and evaluation with Aboriginal and Torres*

Strait Islander Communities, and the *National Advisory Group on Indigenous Health Information and Data*, newly established by AHMAC.

Barriers to research: Torzillo has perceived several types of barrier to research fulfilling its potential of 'a limited but significant role in supporting the major initiatives necessary to improve Aboriginal health' (Torzillo 1999):

> Lack of resources and infrastructure, with particular reference to community services in which research often adds another burden to over-stretched staff.
>
> Technical problems, such as determining appropriate end-points for interventions, and achieving adequate study power.
>
> Anti-research rhetoric obstructing 'high quality intervention studies which are needed to change the current situation'.
>
> A tendency for part of the modest funds earmarked for Indigenous health research to be used, in effect, to supplement service delivery.
>
> Inflexible or superficial application of desirable principles, such as training Indigenous workers in research.

What are the opportunities?

Institutional

Improving the quality of health information for Indigenous people was identified as a major priority in the report *The Aboriginal and Torres Strait Islander Health Information Plan… This time let's make it happen* (Aboriginal and Torres Strait Islander Health and Welfare Information Unit 1997a). This report listed 42 recommendations which were endorsed by the Australian Health Ministers Advisory Council (AHMAC) and are now being implemented by the individual governments and their various health authorities under the guidance of the National Health Information Management Group (NHIMG). The NHIMG directs implementation of the National Health Information Agreement between Commonwealth, State and Territory health and statistical agencies.

In October 2000, AHMAC agreed to establish a new National advisory group on Indigenous health information and data, under the auspices of NHIMG. A preliminary meeting of the new group took place in December 2000 and the first formal meeting was scheduled for March 2001. While the specific terms of reference and membership of the advisory group are yet to be established, indications are that the group may provide an appropriate forum for developing strategies for the implementation of recommendations based on information needs for Indigenous injury as identified in the current review.

An AHMAC-funded project aimed at monitoring the completeness and coverage of Indigenous identification in hospital separations data will be conducted during 2001–2002. The project will be coordinated by the Aboriginal and Torres Strait Islander Health and Welfare Information Unit (ATSIHWIU) as a joint program of the ABS and AIHW. The sampling frame is designed to capture the breadth of service delivery in hospitals in all States and Territories. In addition to a quality audit, an assessment of data collection practices will be undertaken - including the appropriateness of the recording process (i.e. to what extent are non-threatening methods being utilised?). The project is expected to contribute to efforts to promote best practice in the collection of Indigenous status information in patient records (J Shaw, personal communication).

The recent commitment by the Australian Bureau of Statistics (ABS 2000a) to improve the quality of data related to Indigenous populations also includes processes which open the opportunity for health policy planners to argue for changes such as increased breadth and depth of information. In addition to strengthening partnerships with Indigenous organisations for ongoing data development and improvement to data collection and their availability, the ABS has announced the introduction of an expanded program of household surveys from 2002—6-yearly Indigenous General Social Surveys, Indigenous sample supplementation in regular health surveys and annual Indigenous estimates from the labour force surveys—to regularly provide more extensive statistics about the Indigenous population. The five-yearly ABS Population Census is also expected to provide increasingly accurate Indigenous-status data and the first information from the 2001 Census is expected to be available from July 2002. In September of 2002, the publication *Population Distribution, Indigenous Australians* is due for release and will be followed by *Census of Population and Housing, Aboriginal and Torres Strait Islander People*. These publications—together with a series of Occasional Papers—are expected to present a range social and economic statistics across geographic areas.

While these initiatives should improve information concerning the health and welfare of Indigenous people, they will not improve information about injury and its consequences unless the survey instruments include appropriate questions concerning injury, injury risk factors and protective factors, knowledge and attitudes concerning these, etc.

Certain potentially useful revisions to the International Classification of Diseases were noted in Chapter 4. The Australian Modification of the International Classification of Diseases (ICD-10-AM) is revised each second year. The next revision (at the time of writing) will result in the 3rd edition, due to be used to code separation from hospitals from 1 July 2002. The review process will be conducted by the National Centre for Classification in Health, during 2001.

Two other issues related to the ICD are:

> To date, ‘within-revision’ ICD updates have been applied to hospital data but not to deaths. Some changes to one version will be useful for data coded according to the other version. This is particularly so, concerning codes for ‘external causes’, many of which can lead to death and to hospital admission.
>
> The inclusion of new categories in ICD-10 does not guarantee that good quality data will be collected. Accordingly, there may be a need to test the quality of source data, especially if great reliance will be placed on findings (e.g. if hospitalised cases coded to volatile substance abuse were to be made the subject of an indicator).

Methods and concepts

As noted elsewhere, further improvement of Indigenous identification must remain a high priority. This section outlines other ways in which developments in information methods and concepts could contribute to injury prevention in the Indigenous population.

Injury prevention model. Public health injury prevention offers a model which may be seen as having potential to make a useful contribution to responding to the issues considered in Chapter 4, and related topics. ‘Injury’ provides a conceptual umbrella which links topics often considered separately and points to similarities between them in terms of risk factors and interventions. Moreover, the successes of injury prevention in other settings provide a basis for optimism about its potential value in this setting.

Areas in which the development of links might be particularly fruitful are effects of drug use (including alcohol), domestic violence, suicide and self-harm, and perhaps road injury. All of these topics share factors which are sometimes described as structural or social determinants of health (Health Policy Unit and Social Policy Committee 1999).

Injury indicators. A broad measure of injury incidence might provide a useful summary indicator of health status at community level. This follows from the overlapping risk factors for many types of injury, the high rates observed for the Indigenous population overall (especially in some places), and the potential for injury prevention interventions to result in fairly prompt incidence reduction. Other indicators might be designed to signal risk factors, infrastructure and community well-being.

New methods. New methods are being developed and applied for risk factor monitoring in the general community (e.g. CATI methods). Their applicability to injury in Indigenous communities warrants further exploration.

Methods that combine qualitative and quantitative components within a consultative, community-controlled framework appear to have good prospects for achieving change at community level (e.g. Gladman 1997, Hunter 1999). Few examples of such approaches to injury in Indigenous communities have been documented and evaluated, and characteristics related to successful outcomes remain poorly defined.

Sentinel sources. The quality of available data on Indigenous mortality and morbidity varies within Australia. In recognition of this, reporting has often been limited to data for some jurisdictions (most commonly Northern Territory, Western Australia and South Australia). Whole jurisdictions are not necessarily the best basis for selecting data on the basis of quality. Regions or hospitals might sometimes provide a better basis. Sentinel data of sufficient quality to enable meaningful trend analysis might be obtained more quickly in this way than by methods that depend on widespread achievement of high quality identification.

Other approaches to Indigenous identification. While efforts should continue to achieve adequate Indigenous identification within administrative data systems, other approaches should be considered where achievement of adequate sensitivity and specificity remains elusive. This is particularly likely to occur in settings in which Indigenous cases make up a small proportion of a collection (e.g. mortality data in Southern states).

Indigenous deaths due to injury are highly concentrated in the 15 per cent of all deaths in Australia that are certified by a coroner. Deaths required to be reported to a coroner include those that are ‘sudden and unexpected’, including most deaths due to injury. By definition, these deaths are subject to special judicial and administrative processes, which are required (among other things) to determine the identity of the deceased and the circumstances of death. Identification of Indigenous status has not been a specific responsibility of coronial processes but could, in principle, become one. Implementation would depend on the cooperation of police forces (whose officers generally attend the scene of a death, and often undertake later investigations) and might require supplementary resources (e.g. to undertake enquiries concerning deceased persons whose Indigenous status is not readily determined).

The National Coronial Information System (NCIS) provides a technical and operational framework for such an initiative at national level. The organisation that operates the NCIS, the Monash University National Centre for Coronial Information, has begun to work with police organisations with a view to improving Indigenous identification during police investigation of deaths (J Lightfoot, MUNCCI, personal communication). If this is achieved, the NCIS has potential to enable a large improvement in information concerning Indigenous injury deaths.

A second example of a method which could, in principle, provide a way around intractable difficulties in Indigenous identification is a prospective cohort study, especially if based on a sample of persons identifying as Indigenous at a census. Probable concerns over privacy, costliness and other impediments are acknowledged. Nevertheless, if the adequate identification based on improvement to administrative systems proves unachievable, such alternatives will warrant attention.

Secondary sources. The Indigenous HealthInfoNet is already a useful source for secondary information concerning injury and injury prevention for Indigenous Australians. It could be made more useful for this purpose. For example, many of the sources mentioned in this report are not, at the time of writing, cited or linked on the page within the Health section titled ‘other aspects – Injury’.

One of the strengths of the HealthInfoNet is that it is open to the inclusion of a wide range of types of information. We have noted elsewhere the small number of published reports that we found of local intervention programs. It also proved to be difficult to identify relevant projects that are in progress. Consideration might be given to using the HealthInfoNet to facilitate identification and documentation of these types of activity. Dedicated resources would be required if the process were to extend to active searching for projects and writing about them.

A related issue is ensuring that information is made available in forms that convey information effectively to particular audiences, particularly including information users in Indigenous communities. Plain language summaries of some statistical reports are provided on the HealthInfoNet. Further consultation with potential information users may be warranted to guide future work.

Issues for further discussion

This final section raises some points which are pertinent to obtaining and using information to achieve injury prevention in the Indigenous community of Australia, and which we think will benefit from further discussion and debate.

Information for large-area and local purposes. Understanding and responding to injury among Australian Indigenous people requires National or other large-area information. Diversity within the Indigenous population and the particular requirements of local and community-based responses necessitate local sources as well.

Information requirements differ at these levels, with consequent differences in the necessary attributes of information sources. National and other large area requirements tend to emphasise quantitative measures capable of revealing differences over time or between places or population segments. Local requirements tend to include specific and particular information. Community priorities may differ greatly between (for example) a small isolated settlement, and an urban population. Combinations of qualitative and quantitative information are often useful.

There are numerous Indigenous communities, relatively few of which have (or have had) specific local information collections related to injury and injury prevention. Matters which might be made the subject of discussion are the advantages and disadvantages of such projects, for the particular communities which host them and for other communities. Can lessons learned in one community be passed to other communities without needing to replicate all or some aspects of such projects? For how many communities is such a project likely to be a high priority?

Criteria for evaluation, especially for community-based interventions. As described in Chapter 2, this is a matter of discussion within the public health community generally. This discussion is likely to lead to guidelines and other conventions which represent contemporary norms and practice on decision-making in situations in which quantitative evidence is sometimes very limited. Is the discussion extending to Indigenous people and to those concerned with injury prevention in Indigenous communities, and do special issues arise in this context?

Balance between whole-community and Indigenous-only information sources. While important differences are present, injury occurrence and prevention in the Indigenous population has much in common with injury occurrence and prevention in the remainder of the population. This leads to the question of which aspects of a response to injury in the Indigenous population can be served adequately by information sources (and interventions, etc) that apply to the general population, and which require distinct responses for Indigenous people.

Characteristics of information required for prevention of injury in Indigenous people which might be distinct from the information collected on injury in the non-Indigenous population would be a useful subject for discussion and consensus development. What data sources are most needed to enable the ‘teasing out’ of information necessary to inform interventions to prevent injury in Indigenous communities? How do assessments of information needs and priorities differ between communities? How would the specific data that might be collected benefit Indigenous people?

A related issue is the extent to which response to injury will be undertaken as a function of generalist agencies and practitioners engaged in Indigenous health, and the extent to which it will be undertaken as a specialist activity.

Provision of professional assistance and support without engendering dependency. This issue is particularly evident in relation to small communities. Responsiveness to community views and priorities is an essential part of finding a satisfactory balance. Related matters are the need to ensure the sustainability of interventions, and the need to allow sufficient time for community decision-making and other aspects of projects that are sometimes overlooked.

Issues concerning information ownership, access and control. The ethical and legal aspects of information collection, storage and use have had increasing attention in recent years. A prominent aspect of this is the role of privacy commissioners, institutional ethics committees, etc. as mechanisms to define and implement community standards in a manner that is intended to take account of a range of interests which are sometimes in competition. At much the same time, principles of community control have come to the fore concerning research about Indigenous people.

We note that injury prevention projects undertaken in Indigenous communities and with community control may sometimes obtain information of a nature that is sensitive to individuals as well as to communities. This raises questions for discussion concerning mechanisms to protect both of these types of interest, particularly in the context of projects that are undertaken in small communities.

Modelling good practice, successful programs, etc. Attention could usefully be given to ways to encourage the spread of 'good practice' for injury prevention in Indigenous communities through formal and informal channels. This happens to some extent already. For example, the approach developed for a project conducted in some communities on Cape York has been a fruitful example, which has been considered, modified and built upon elsewhere (e.g. Woorabindah, Shoalhaven, Nowra, Kalgoorlie). A question for discussion is whether mechanisms can be developed which would facilitate the spread of effective programs, what form they might take, and how they might operate.

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INJURY RESEARCH & STATISTICS

Despite limitations it is clear that injury mortality and morbidity rates are several times higher for Indigenous Australians than for other Australians.

This report is a survey and assessment of information sources which are being used to inform or support prevention of injury in the Indigenous population, and to sources which could be used for this purpose. The findings of this survey are used as the basis for discussion and conclusions concerning directions for development of information sources.