

Towards a national prisoner health information system

**Submitted to AHMAC
by the
Prisoner Health Information Group**

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Foreword

The health of Australian prisoners has often been a topic of debate and concern among governments and the community. Diverse opinions exist over its relevance and priority and these opinions are exacerbated by limited health information and monitoring.

One thing is clear. The prisoner population is increasing and the health of these people is becoming a growing concern. The gap between the health of prisoners and that of the wider community can no longer be ignored, and the impact of this gap on community health is now a very real problem.

This report, which has been prepared by the Australian Institute of Health and Welfare under direction of the Prisoner Health Information Group (PHIG) highlights the state of prisoner health in Australia and the opportunities for intervention. Incorporating current information on prisoners – both male and female, personal stories and international comparisons – the report also exposes comparisons between prisoners who are Aboriginal and Torres Strait Islander and prisoners from the rest of the community.

The opportunity now exists to address the growing problem of prisoner health. It is widely recognised that more complete information is critical in making decisions and that recognition of prisoner health issues at the national level is an important step forward. This in part is being addressed by PHIG as work is being undertaken in developing a national minimum data set on prisoner health. Of course this is only the beginning and we still have a long way to go before any significant impacts can be made.

I would like to take this opportunity to thank the many people involved in developing this report, in particular the jurisdictions in each state and territory who have contributed funds to enable its fruition. It is this type of collaboration that will be our strength as we address this important health issue.



Jim Birch
Chair
Australian Health Ministers' Advisory Council

June 2006

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Abbreviations

ABS	Australian Bureau of Statistics
AHMAC	Australian Health Ministers' Advisory Council
AIC	Australian Institute of Criminology
AIDS	acquired immune deficiency syndrome
AIHW	Australian Institute of Health and Welfare
ANCD	Australian National Council on Drugs
AUDIT	Alcohol Use Disorders Identification Test
BBV	bloodborne virus
CHRCJ	Centre for Health Research in Criminal Justice
DoHA	Australian Department of Health and Ageing
HIV	human immunodeficiency virus
HSV	herpes simplex virus
ICD-10	International Classification of Diseases, 10th revision
LSD	lysergic acid diethylamide
n.a.	not available
NATSIHO	National Aboriginal and Torres Strait Islander Health Officials
NCCHC	(United States) National Commission on Correctional Health Care
NCHECR	National Centre in HIV Epidemiology and Clinical Research
NDICP	Nation Deaths in Custody Program
NMDS	national minimum data set
PHIG	Prisoner Health Information Group
SCATSIH	Standing Committee on Aboriginal and Torres Strait Islander Health
SCRGSP	Steering Committee for the Review of Government Service Provision
STD	sexually transmitted disease
TB	tuberculosis
UNSW	University of New South Wales
WHO	World Health Organization

Summary

The large and growing population of prisoners in Australia presents a strong challenge to public health. Occasional studies make it clear that many prisoners have poor health and this affects the health of the wider public as prisoners move into and out of the general community.

Many prisoners come from disadvantaged backgrounds and Indigenous Australians are strongly over-represented. As part of their generally worse health, prisoners have much higher levels than the rest of the community of hepatitis C and other communicable diseases, a range of mental health disorders, substance abuse of both illicit and licit drugs, and a range of chronic diseases.

Studies show that prison health programs can make a difference. They offer a vital chance to act to improve prisoner health and, in turn, the health of the community. These programs require good information to help identify areas for improvement, support service policy and planning, evaluate services, and track progress over time.

Australia has long recognised the benefits of a sound evidence base for the wider public and for a range of special groups. Yet prisoners are a notable omission – there is no national health monitoring of prisoners even though they are recognised as a high-risk group. Present information remains sporadic, inconsistent and incomplete, and provides a limited picture of prisoner health and their health care. This also means that Australia does not have a complete picture of the public's health.

This report outlines the need for a national prisoner health information system. It responds to concerns expressed about prisoner health in recent times by the Australian Health Ministers' Advisory Council (AHMAC), and it follows initiatives by organisations with an interest in the area, such as the Centre for Health Research in Criminal Justice (CHRCJ).

The report describes prisoners and what is known about their health. It points out that there is an opportunity to intervene and treat prisoners while in prison, leading to their better health, and also reduce risks to the community on their release. It states what prisoner health information we currently have, where the gaps are, and what further information is needed. It concludes by calling for a national system of data collection, and specifically:

- completion of an audit of prisoner health information that is currently being collected
- regular reporting of national prisoner health indicator data
- definition of a national minimum data set for prisoner health
- standardisation of key data items and definitions across jurisdictions
- development of a regular national prisoner health survey, or consistent state surveys
- a (virtual) centre or clearinghouse for prisoner health information.

Introduction

Background

In August 2001, the Australian Health Ministers' Conference agreed to review the provision of health services to prisoners. Ministers resolved to ask the Australian Health Ministers' Advisory Council (AHMAC) to undertake a review, leading to the establishment of the Working Party on Prisoner Health.

At this time the Australian Institute of Health and Welfare (AIHW) produced an information paper on data for reporting on the health of prisoners in Australia (Grau 2001). This paper discussed why prisoner health is important, who needs information about prisoner health, sources of information and what is presently known about prisoner health.

Following discussions between the AIHW and the Centre for Health Research in Criminal Justice, a workshop was held in September 2004 to discuss health information relating to Australian prisoners. The purpose of this workshop was to bring a range of stakeholders together to discuss issues involved in the development of national prisoner health indicators and the establishment of a minimum data set for prisoner health. This covered areas such as infectious diseases, drugs and alcohol and mental health, with specific reference being made to Indigenous prisoners, their health problems and their over-representation in prisons.

The outcome of the workshop was the formation of a Prisoner Health Information Group (PHIG), with a role of improving the health and wellbeing of prisoners by informing government and community discussion and decision-making. It aims to do this by assisting in the development and provision of statistics and information on prisoner health.

At its first meeting in March 2005, PHIG resolved to:

- (i) Commence work on developing a minimum data set for prisoner health
- (ii) Publish a report in 2006, which would examine the current state of prisoner health and highlight the importance of prisoner health information, monitoring and surveillance.

Minimum data set development, supported by and funded in part by the National Aboriginal and Torres Strait Islander Health Officials network (NATSIHO, previously SCATSIH) has commenced, beginning with an audit of prisoner health information currently being collected.

About this report

This report attempts to establish the critical need for better information on the health of prisoners. It provides an overview of current information sources and summarises what those sources tell us about prisoner health in Australia. The final sections discuss a range of data gaps and issues, and suggest a suite of 'next steps'.

Throughout this report is scattered a set of personal stories highlighting the unique nature of prisoner health status, and the opportunities and benefits that might arise from health intervention in the prison setting.

Under the auspice of PHIG, this report was presented to AHMAC for comment and consideration.

The value of good prisoner health information

Prisoners in Australia comprise a large and growing population group. In the 10 years between 1995 and 2005 the prisoner population grew by 45%. Currently, over 25,000 persons are imprisoned in Australia – 1 in 600 Australian adults (and 1 in 325 Australian adult males). It is estimated that two to three times this number pass through Australian prisons each year.

Many prisoners are characterised by social and psychological disadvantage, and compared with the general population, have low levels of educational attainment, high unemployment and welfare dependency (Woodward 2003). With social disadvantage comes poor health and a range of special health needs.

The significant health needs of prisoners as a population group have been documented in numerous studies. Inmates have a disproportionately high prevalence of both chronic and acute health conditions, including high rates of communicable diseases and mental illness. Prisoners also report regularly engaging in risky behaviour, particularly those related to the spread of bloodborne and other infectious diseases, for example, intravenous drug use.

Prisoner health information is needed to:

- monitor prisoner health, including trends and state and territory comparisons
- compare the health status of prisoners with other groups including the general community, and identify areas for improvement in health
- inform prisoner health service planning and funding
- assess and evaluate the provision of prisoner health care and welfare services
- assess differences in health care practices between prisons, jurisdictions or providers
- provide health performance indicators for correctional facilities
- measure health policy outcomes among prisoners (Grau 2001).

The need to develop statistics on health, including mental health, as it relates to crime and justice is outlined in the National Information Development Plan for Crime and Justice Statistics (ABS 2005a). This Plan provides an agreed understanding of Australia's statistical priorities in the field of crime and justice. Prisoner health information, including an improved evidence base and standard data, is recognised as a priority.

Currently, information on prisoners' health is scant. Only two sources of information containing national data relating to prisoners' health are routinely published: notifications of HIV, and deaths in custody. Although the need to nationally monitor the health of the general population is fully accepted, prisoners – a high-risk group – are excluded. Prisoners are not included in large, community-based surveys of population health, and thus require special health surveys or collections.

These surveys, plus others sources of data such as reception assessment information, clinic attendances and hospitalisations, provide a partial picture of prisoner health. They describe the health of prisoners in a particular prison or jurisdiction. To date, there has been little attempt to standardise or collate the disparate sources of information so as to provide the level of detail needed for rigorous surveillance and monitoring of prisoner health.

High rates of return, with offenders moving between the community and prison, mean that prisoner health problems, if left unidentified and untreated, soon become community health problems. Addressing prisoner health needs during incarceration will have long-term benefits not only for prisoners, but also for the wider community. There is also the increased burden on the community health care system in coping with health problems that may be exacerbated by time spent in prison. Information on prisoner health can thus contribute to developing approaches to improving the health of the community and may reduce community health care costs.

The prisoner population disproportionately includes a number of marginalised population groups in Australian society – homeless people, the intellectually disabled and mentally ill, injecting drug users, and Aboriginal and Torres Strait Islander people. Collecting health information from these population groups is often difficult, and prisons can provide some indicators in order to monitor their health. Health information collected from these population groups can be used not only to initiate treatment for members in prison, but also to inform the planning of health care services for members in the community.

Little is known about the effectiveness and availability of health care services within prisons. Information on prisoner access to, and use of, health services can help to ensure that the prison health care system is able to effectively meet prisoner health needs. This is particularly important because prisoners are less likely to have contact with health services outside of the prison environment. By redressing health problems within the prison system, the burden on community health care services can be reduced. Prison-based interventions result in significant reductions in health care costs (Black et al. 2004).

Reliable and regular data collection relating to prisoner health also allows evaluation of the effectiveness of relevant policies and programs. For example, the National HIV/ AIDS Strategy and National Hepatitis C Strategy (DoHA 2005a,b) highlight prisoners as a high-risk population. Such information can be used to develop evidence-based programs to improve prisoner health.

Information on the health of prisoners is necessary on several levels, primarily for monitoring, and meeting the health needs of this high-risk group. Good health information identifies areas for improvement, informs health service policy and planning, and allows assessment and evaluation of health care services and health policy outcomes.

Prisoners and their numbers

Prisoners are defined here as adults aged 18 years or over held in custody, whose confinement is the responsibility of a corrective services agency. This definition includes sentenced prisoners and prisoners held in custody awaiting trial or sentencing – that is, remandees. Juvenile offenders, persons in psychiatric custody, police cell detainees, asylum seekers or Australians held in overseas prisoners are not included.

On 30 June 2005 there were 25,353 persons imprisoned in Australia (Table 1) – about 1 in 600 adults – in 120 different facilities. The prisoner population in Australia grew by 4.9% between 2004 and 2005, exceeding the growth rate of the general population which was 1.2% during the same year. In the 10 years since 1995, the prisoner population has increased by 45% from around 17,000 to over 25,000. Again, this growth far outstrips that of the general adult population, which was 12% over the same time period.

Table 1: Characteristics of prisoners at 30 June, selected years

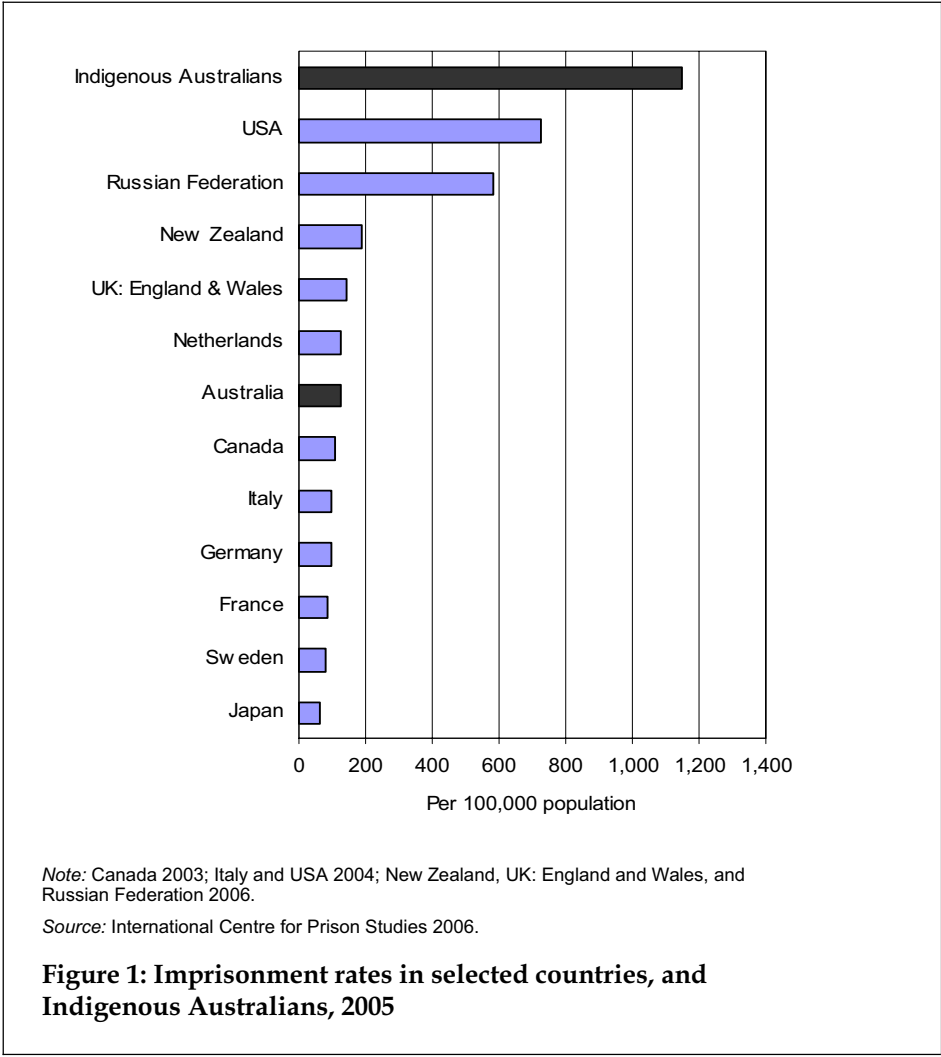
Characteristic	1990	1995	2000	2005
Number	14,305	17,428	21,714	25,353
Imprisonment rate (per 100,000 adults)	112	129	150	163
Average age (years)	n.a.	31.7	32.9	34.5
Under 25 (%)	33.2	28.8	26.1	20.2
Females (%)	5.4	4.8	6.4	6.8
Indigenous (%)	14.3	17.1	18.9	22.3
Indigenous imprisonment rate (per 100,000 adults)	1,638	1,307	1,614	2,021
Prior known adult imprisonment (%)	57.5	56.3	56.4	60.4
Remandees (%)	13.4	11.5	17.4	20.2
Median sentence length (years)	n.a.	3.0	3.3	3.0

Sources: ABS 2001; ABS 2005b.

People were imprisoned at a rate of 163 per 100,000 adults in 2005, an increase from 129 per 100,000 adults in 1995. More than 60% of prisoners had been previously imprisoned. At 30 June 2005, 20% of prisoners were on remand, and thus awaiting trial, sentencing or deportation.

Among sentenced prisoners in 2005, 2% had a sentence length less than 3 months, 5% between 3 and 6 months, 10% between 6 and 12 months, and 77% had a sentence length of 12 months or more. The median sentence length for prisoners was 36 months (3 years).

Australia's imprisonment rate is similar to that in England and Wales, the Netherlands and Canada (Figure 1). Rates are high in the United States and the Russian Federation, at more than 1 in 200 persons. Rates are lower than 1 in 1,000 persons in Japan, Sweden and France. Aboriginal and Torres Strait Islander imprisonment rates, however, far exceed all national rates.



Prisoners tend to be relatively young, with an average age in 2005 of 34.5 years. The average age has increased over the last decade, from 31.7 years in 1995. The proportion of prisoners aged less than 25 years has in turn fallen, from 29% in 1990 to 20% in 2005. Currently, just over half of all prisoners are males aged between 20 and 34 years.

Males represent 93% of the prisoner population, with 23,619 male prisoners and 1,734 female prisoners at 30 June 2005. Although males are almost 14 times more likely to be imprisoned than females, the female prisoner population has increased at a greater rate since 1995 – 107%, as opposed to 42% for males.

Most prisoners are held in New South Wales, followed by Queensland, Victoria and Western Australia (Table 2). However, the highest imprisonment rate is in the Northern Territory, at 576 persons per 100,000 population, or more than three and a half times the national rate. The lowest rate is in Victoria, at 94 per 100,000 population.

More than 65% of prisoners in Queensland, Tasmania and the Northern Territory had previously been imprisoned. Less than 55% of prisoners in Victoria and South Australia had been previously imprisoned – however, South Australia had a higher proportion on remand (34%), and a longer median sentence length (5.0 years). The Northern Territory and Tasmania had lower median sentences, at 1.3 and 1.8 years respectively, with lower proportions of remandees in Western Australia, the Northern Territory and Victoria.

Table 2: Prisoners by states and territories, 30 June 2005

Characteristic	NSW	Vic	Qld	WA	SA	Tas	ACT ^(a)	NT	Aust
Number	9,819	3,692	5,354	3,482	1,473	551	275	820	25,353
Imprisonment rate (per 100,000 adults)	188	94	177	229	123	150	110	576	163
Mean age (years)	34.3	36.0	34.6	33.7	34.9	34.6	32.7	33.1	34.5
Females (%)	7.1	7.0	6.7	7.7	6.4	5.1	4.7	3.2	6.8
Indigenous (%)	17.1	6.0	24.9	40.4	18.0	12.7	9.5	80.9	22.3
Indigenous imprisonment rate (per 100,000 adults)	2,106	1,224	1,706	3,503	1,681	692	1,060	1,856	2,021
Prior known adult imprisonment (%)	61.8	52.2	66.5	56.0	54.7	65.3	72.4	65.2	60.4
Remandees (%)	20.2	17.6	20.9	15.9	33.7	23.8	22.9	16.3	20.2
Median sentence length (years)	3.5	3.3	3.0	2.7	5.0	1.8	3.6	1.3	3.0

(a) Includes ACT prisoners held in NSW.

Source: ABS 2005b.

The highest proportion of female prisoners is in Western Australia (7.7%), with the lowest in the Northern Territory (3.2%).

Aboriginal and Torres Strait Islander persons are over-represented in the prisoner population. There were 5,656 Indigenous prisoners, or 22% of the prisoner population, in Australia at 30 June 2005. The proportion of Indigenous prisoners has risen since 1995, when they comprised 17% of the prisoner population. Indigenous persons are imprisoned at a crude rate of 2,021 per 100,000 adult population, 16 times that of the non-Indigenous population. On any one day, 6% of young Aboriginal men aged 25–30 years are in prison (Krieg 2006). More than 2% of the entire adult Aboriginal and Torres Strait Islander population is currently imprisoned (ABS 2005b).

Over 80% of the Northern Territory's prisoner population are Indigenous, double the next highest state – Western Australia – at 40%. Indigenous proportions in Victoria (6%) and the Australian Capital Territory (10%) are low. Indigenous imprisonment rates also vary widely, with the rate in Western Australia (3,503 per 100,000 population) over five times the rate in Tasmania (692 per 100,000 population). One in 16 Indigenous males in Western Australia is currently in prison.

Prisoners come largely from disadvantaged backgrounds. Although national data describing the socioeconomic status of prisoners are not available, a recent survey in New South Wales found that prisoners have lower levels of educational attainment compared with the total Australian population, with up to half leaving school with no qualifications. Many had been in juvenile detention (41% of men and 26% of women). One-third of Indigenous prisoners had been removed from their parents as children, often before the age of 10 (Butler & Milner 2003).

In the 6 months prior to imprisonment, about one-half (55%) of men and one-third (36%) of women had worked. Most prisoners lived in rental accommodation and had received a government benefit or pension in the 6 months before entering prison. Many prisoners may be functionally illiterate – not being able to engage in activities in their social groups or communities where literacy is required – and up to 20% may have an intellectual disability (Woodward 2003).

Demographic information identifies prisoners as a substantial, and growing population group. They are mostly young, and male. In 2005, 60% of prisoners had been previously imprisoned, and 93% had a sentence length of 6 months or more. Aboriginal and Torres Strait Islander people are over-represented, making up over 20% of the prisoner population.

Prisoners often come from socioeconomically disadvantaged backgrounds, having lower levels of educational attainment, infrequent or unrewarding employment, and receive a benefit or pension. Many are not functionally literate, with a significant proportion having an intellectual disability.

What we know about prisoner health

Existing published information, including reports and survey results, indicate that prisoners are a population group characterised by social and psychological disadvantage. Compared with the general population, prisoners include more people with low levels of educational attainment, high unemployment and welfare dependency. With social disadvantage comes poor health and a range of special health needs. Prisoners face both chronic and acute health problems including high rates of communicable diseases, mental illness and health risk behaviours, including injecting drug use.

Health risk factors and determinants

The health of prisoners is influenced and determined by many factors acting in various combinations. Health determinants are those factors that raise or lower the level of health in a population, and are a key to the prevention of disease, illness or injury. These determinants may have positive or negative impacts; factors such as cigarette smoking or low socioeconomic status increase the risk of ill health and are commonly termed 'risk factors' (AIHW 2004).

For prisoners, health risk factor behaviour is often compromised. Psychological and social deprivation often underpin alcohol consumption, smoking and illicit drug use. Tattooing/body piercing, gambling, insufficient exercise and poor diet are additional risk factors. These behaviours, in turn, threaten prisoner health and may lead to chronic diseases, illness and death.

Prisoners have a high prevalence of risk factors for cardiovascular disease and diabetes, including elevated blood glucose levels, high cholesterol, high blood pressure, obesity and smoking (D'Souza et al. 2005).

A comparison of the health of Queensland women prisoners with that of the general community found that prisoners had poor nutrition, did less exercise, had higher rates of smoking and had a greater prevalence of asthma and diabetes. Prisoners also had a greater prevalence of mental health disorders. The study concluded that women prisoners had significantly poorer health outcomes than community women in all areas except cervical screening, breast cancer screening and obesity (Young et al. 2005).

Drug use

Most prisoners have used illicit drugs at some time in their life, with two-thirds regularly using drugs at the time of incarceration. Often, this includes injecting drug use (Table 3). Drug use poses risk in itself through impure or overly-pure content, but also through shared use of injecting equipment and the associated transmission of bloodborne viruses.

Over one-half of prisoners surveyed in the recent four-state Bloodborne Virus Survey reported injecting drug use in the previous month – New South Wales (69%), Queensland (61%), Western Australia (62%) and Tasmania (54%). Indigenous prisoners reported injecting drug use at a slightly higher rate than non-Indigenous prisoners (64% vs 58%) (Butler, Boonwaat & Hailstone 2005).

Table 3: Health risk factors and behaviours among prisoners in full-time custody, New South Wales, Queensland and Victoria (per cent)

Risk factor	New South Wales, 2001		Victoria, 2002		Queensland, 2002
	Males	Females	Males	Females	Females
Ever used illicit drugs	80	84	68	78	80
Regular illicit drug use (daily or almost daily) at time of incarceration	67	74	n.a.	n.a.	63
History of injecting drug use	53	73	44	64	56
Harmful or hazardous alcohol use in last 12 months	48	29	48	22	38
Current smoker	78	83	n.a.	n.a.	83
Overweight/obese	50	44	n.a.	n.a.	20

Sources: Butler & Milner 2003; Victorian Department of Justice 2003; Hockings et al. 2002.

Among Queensland women prisoners surveyed in 2002, 80% (n=169) reported having used an illicit drug at some time, with 25% reporting having used illicit drugs in prison. The most common drugs ever used were cannabis (74%), amphetamines/ speed/methamphetamines (58%) and heroin or other opiates (47%). One-third of women had also used tranquillisers/ benzodiazepines, LSD, cocaine and ecstasy (Turner et al. 2004).

By comparison, among the general community in 2004, an estimated 1.9% had ever injected drugs, with 0.4% injecting in the last 12 months (AIHW 2005).

Alcohol

The prisoner population is characterised by very high rates of high risk drinking. Almost half (48%) of all male prisoners and 29% of female prisoners in New South Wales reported consuming 'harmful' or 'hazardous' quantities of alcohol in the 12 months prior to imprisonment, using WHO's Alcohol Use Disorders Identification Test (AUDIT) (Table 3). The prevalence of 'harmful' drinking among Indigenous women prisoners in Queensland was over 50%, four times that for non-Indigenous women (13%) (Hockings et al. 2002). In Victoria, the prevalence of high-risk drinking among males was 48%, and among females 22%.

By comparison, in 2004 less than one in ten (8.3%) Australians aged 14 years and over drank at levels considered risky or high risk in both the short and long term (AIHW 2005).

Smoking

Smoking is a major source of illness and death in Australia, and contributes to more deaths and drug-related hospitalisations than alcohol and illicit drug use combined. It is a major risk factor for coronary heart disease, stroke, cancer and a variety of other diseases and conditions.

In New South Wales, 78% of male and 83% of female prisoners were current smokers in 2001. In Queensland, the prevalence of current smoking among female prisoners in 2002 was 83% (Table 3). These rates are more than four times that of the general community, which was 17% among the total population aged 14 years and over in 2004 (AIHW 2005).

The last time T tried to quit smoking he found it impossible due to the stress of transfers during an appeal. He was in the truck for long periods with other inmates while he was stressed. When he arrived at a new prison, he was put into a cell with a smoker. While waiting for his court appearance he was in the court cells with other inmates smoking. (Lithgow focus group discussions)

Chronic diseases and conditions

Prison inmates report high levels of chronic disease, despite their relative youth. In New South Wales Correctional Centres in 2001, the three most prevalent chronic health conditions reported by male and female prisoners were asthma, back problems, and poor eyesight. Almost 44% of females and 21% of males reported asthma.

More than one-third of both female (39%) and male (45%) prisoners reported that they had sustained a head injury resulting in unconsciousness at some time in the past (Butler & Milner 2003).

Imprisonment also provides an opportunity to provide oral health services and redress some of the harmful lifestyle impacts on dental health. In the 2001 New South Wales Inmate Health Survey, 23% of women and 37% of men had not seen a dentist for at least 2 years (Butler & Milner 2003).

J is back in gaol. The reception nurse has referred her to the prison doctor because she appeared depressed and had infected sores.

J was last seen 12 months earlier when she was released after a 6-month sentence for shoplifting. This is now her third reception.

Review of her file indicates that she is a 24-year-old Aboriginal woman and has a history of hepatitis C and drug abuse. She had a low grade pap smear abnormality during her last gaol reception but was discharged before her colposcopy could be arranged. Follow-up had been arranged at an Aboriginal Medical Service.

J's background: She was removed from her mother's care in infancy due to her mother's alcohol abuse and inability to care for the children. Her mother had also been removed from her family as a child and brought up in a Girl's Home. J was fostered to a non-Aboriginal family who cared for her well and promoted ties within the Aboriginal community. Her foster mother died when J was 15, and 6 months later J moved to an Aboriginal refuge in Sydney. Aged 17, she met her boyfriend. He was an injecting drug user and she commenced using speed and heroin. She moved in with his family. They went on to have three children over the next 4 years. Domestic violence is an ongoing problem and aged 22 she required plating of a fractured jaw. J officially gave over care of her three children to her boyfriend's mother last year.

Communicable diseases

In May 2004, the first multistate prison study into the prevalence of bloodborne viruses was conducted (Butler, Boonwaat & Hailstone 2005). Over a 2-week period, all male and female prisoners entering correctional centres from the community in New South Wales, Queensland, Tasmania and Western Australia were screened for HIV, hepatitis B and hepatitis C. Risk behaviours, including drug use and sexual activity, were also recorded.

Hepatitis

The overall prevalence of hepatitis C was 35%, rising to 56% among prison entrants reporting current or previous injecting drug use (Table 4). Rates were similar among Indigenous and non-Indigenous prisoners. These figures compare dramatically with an estimate of 1.3% of the general community having been exposed to hepatitis C virus (NCHECR 2005). Should the survey prevalence figure for hepatitis C in prisons be nationally representative, then approximately 8,500 prisoners have hepatitis C, representing 4–5% of total persons in Australia with hepatitis C. Among United States prison inmates in 1996, 17–19% were estimated as being infected with hepatitis C, being nine to ten times the prevalence in the general United States population (1.8%) (NCCHC 2002).

Hepatitis B core antibody prevalence was 20% among prison entrants, with testing revealing 25% of entrants having immunity against hepatitis B due to vaccination. Among injectors, Indigenous prisoners had higher rates of hepatitis B core antibody prevalence (38%) than non-Indigenous prisoners (24%).

Table 4: Serology results and injecting drug history, by state, 2004 (per cent)

Measure/population	New South Wales	Queensland	Tasmania	Western Australia	Total
Hepatitis C antibody prevalence					
Injectors	69	49	67	33	56
All prison entrants	43	30	48	20	35
Hepatitis B core antibody prevalence					
Injectors	31	16	42	27	27
All prison entrants	23	13	29	18	20
HIV antibody prevalence	2	1	0	0	1
Injecting drug use					
History of IDU	59	58	63	58	59
Injected in last month	41	36	32	36	38

Source: Butler, Boonwaat & Hailstone 2005.

The risk of exposure to bloodborne viruses is much increased among those who inject drugs; almost 60% of prison entrants had a history of drug injection, with 38% reporting having injected in the last month. Over two-thirds (69%) of injecting drug users reported using new needles and syringes for all injections in the month before incarceration. The most common drugs injected include amphetamines and heroin. Hepatitis C transmission has been found to continue within prisons, with drug injection and tattooing the most likely causes (Butler et al. 2004).

The study highlights the value of conducting national bloodborne virus surveillance in prisons and the unique access it provides to marginalised groups.

Tuberculosis

As part of the 2001 New South Wales Inmate Health Survey, Mantoux skin testing was performed to determine possible infection with *Mycobacterium tuberculosis*. Among both men and women prisoners, 14% had a positive test. These results were similar to the prior 1996 survey, where 14% of males and 8% of females tested positive (Butler & Levy 1999; Butler & Milner 2003). Testing on a smaller sample of prisoners also took place during the 2002

Victorian Prisoner Health Study, with 30% of females (n=11) and 8% of males (n=15) testing positive (Victorian Department of Justice 2003).

Among United States prisoners, 7.4% were estimated in 1997 as having tuberculosis infection (NCCHC 2002).

In 2002, 1,040 cases of tuberculosis were notified to Australian state and territory health authorities—a community rate of 5 per 100,000 population.

Although the risk of tuberculosis transmission in Australian prisons is currently considered low, surveillance based on prisoners perceived to be at risk is considered appropriate.

Sexually transmitted diseases

Rates of chlamydia, gonorrhoea and syphilis among both male and female prisoners tend to be low (Butler et al. 2001; Butler & Milner 2003; Hockings et al. 2002; Victorian Department of Justice 2003). However, among New South Wales prisoners in 2001, 89% of women and 85% of men tested positive for Herpes Simplex Virus Type 1 (HSV-1). Similarly, 51% of women and 19% of men tested positive to Herpes Simplex Virus Type 2 (HSV-2). Among Victorian prisoners in 2002, 91% of males and 96% of females reported that they had HSV-1. Among female prisoners surveyed in Queensland in 2002, 26% reported that they had oral herpes.

HSV-2 is common among inmates. Important risk factors for HSV-2 include higher number of sexual partners, age and Indigenous status for males, and the presence of hepatitis C for females. Since both homosexual and heterosexual activity continues for some inmates, transmission of HSV-2 within prisons may occur (Butler et al. 2000; Butler et al. 2002).

HIV notifications

The National HIV/AIDS Strategy identified people entering prison as a population group at increased risk of HIV infection, and thus as a priority group for prevention and health promotion.

Table 5: Receptions into Australian prisons, testing and diagnoses of HIV infection, 2004

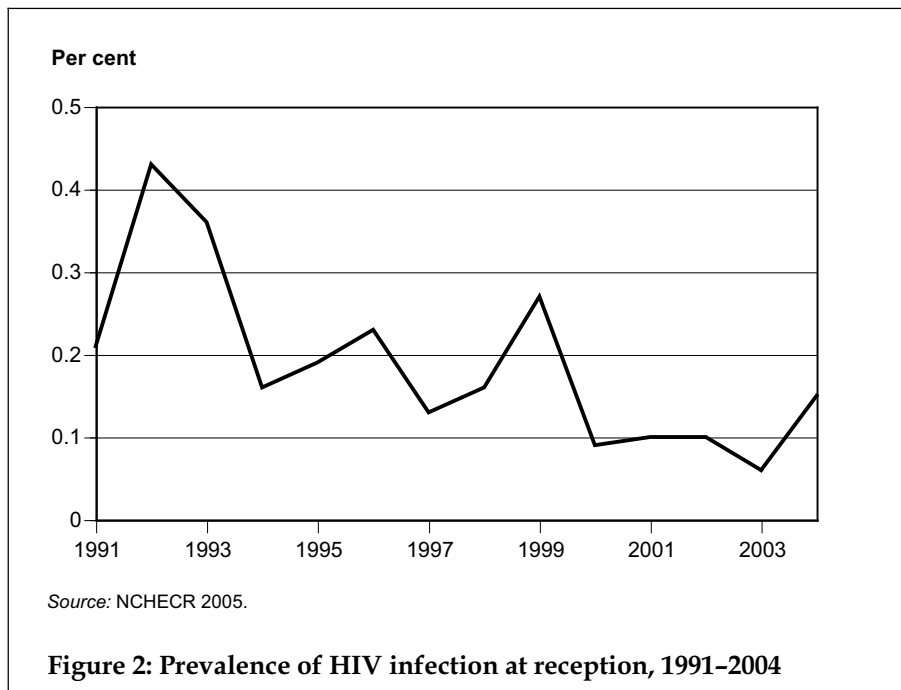
Measure	NSW	Vic	Qld	WA	SA	Tas	NT	Total ^(a)
Number of receptions	14,504	4,955	7,277	6,836	3,449	1,514	2,180	40,715
% male	88	87	89	85	89	87	95	88
Tested for HIV antibody (%)	53.1	10.9	100.0	40.9	29.3	17.6	100.0	54.4
% males tested	57.5	8.6	100.0	39.5	29.4	17.4	100.0	55.9
Number (%) with HIV	21 (0.3)	1 (0.2)	6 (0.1)	2 (0.1)	1 (0.1)	0 (0.0)	3 (0.1)	34 (0.2)
Number (%) male with HIV	20 (0.3)	1 (0.3)	2 (0.0)	1 (0.0)	0 (0.0)	0 (0.0)	3 (0.1)	27 (0.1)

(a) Note that the corrections centre in the ACT is a remand centre only, with HIV antibody testing available on request. Data are not available for 2004.

Source: NCHECR 2005.

HIV prevalence among people entering prisons is low, at 0.2% in 2004 (Table 5). Prevalence since 1991 has been consistently lower than 0.5% (Figure 2). There is little difference in prevalence between males and female prison entrants. Although low, HIV prevalence among prison entrants is higher than among the general population. In 2004, the estimated rate of HIV prevalence among the Australian population was 0.07% (NCHECR 2005). Comparable

figures for United States prisoners indicate an estimated HIV prevalence of between 2.3–3.0% in 1997, and a total population prevalence of 0.3% (NCCHC 2002).



Although rates at reception are low, some researchers caution that HIV transmission in prison remains a risk (Dolan & Wodak 1999). This has considerable public health implications since most drug-using prisoners soon return to the community.

A says: 'Prison has had positives and negatives. My attitude has improved – I want to work in the future. My health has also improved, and I'm off drugs. But the lack of freedom has made me worry about my family. I meet people who want to make you continue with crime. It's a good place to advance your criminal skills.'

Mental health

The high rate of mental health problems among prisoners continues to merit considerable attention. In 2001, a study in New South Wales found that a substantial number of prisoners, either at the point of reception or currently serving a prison sentence, were suffering from a mental disorder (Butler et al. 2005). Overall, 78% of men and 90% of women assessed at reception had at least one mental illness diagnosis using ICD-10, including psychosis, affective disorder, anxiety disorder, substance use disorder, personality disorder or combinations of these (Table 6). Among those who were already serving a prison sentence, the corresponding figures were 61% for men and 79% for women.

Depression was the most common affective (mood) disorder in both the reception and sentenced groups, while post-traumatic stress disorder was the most common anxiety disorder. One in twenty prisoners reported that they had attempted suicide in the 12 months before interview. In both males and females, the prevalence of having any psychiatric

disorder declined with age. The highest prevalence across both sexes was in females under 25 years old, and the lowest for men over 40 years of age.

The prevalence of psychiatric disorder was significantly higher among prisoners than in the general community. In the ABS National Survey of Mental Health and Wellbeing – weighted to adjust for demographic differences between the two samples – the general 12-month prevalence for any psychiatric disorder was 31% (compared with 80% among all inmates in the New South Wales study), for any mental disorder 16% (46% among the New South Wales inmates), for psychosis 0.7% (7%), for affective disorder 9% (23%), for anxiety disorder 11% (38%), for substance use disorder 18% (66%) and for personality disorder 9% (43%) (ABS 1998; Butler et al. 2006).

High levels of mental health problems are also common in other jurisdictions. Almost two-thirds (61%) of respondents to the 2002 Queensland Women Prisoners' Health Survey reported having received treatment or assessment by a psychiatrist or doctor for an emotional or mental problem (Hockings et al. 2002). Medical chart reviews indicate that 23% of women were using medication that would be prescribed for a psychiatric condition. Around 20% received antidepressants and 6% antipsychotics. In Victoria, more than half (51%) of prisoners surveyed in 2002 had been assessed or had received treatment by a psychiatrist for an emotional or mental health problem. Indigenous prisoners were less likely to have been told by a doctor that they had a mental illness (Victorian Department of Justice 2003).

Table 6: Twelve-month prevalence estimates of major mental disorders among reception and sentenced prisoners in New South Wales, 2001 (per cent)

Diagnosis	Reception prisoners		Sentenced prisoners	
	Men	Women	Men	Women
Psychosis	11	15	4	6
Affective disorder				
Depression ^(a)	16	24	10	14
Dysthymia	7	10	4	6
Manic episode ^(b)	3	8	1	2
Any affective disorder	21	34	12	20
Anxiety disorder				
Post-traumatic stress disorder	22	44	16	44
Generalised anxiety disorder	13	22	12	15
Panic disorder	7	17	7	16
Other anxiety disorders ^(c)	7	6	5	9
Any anxiety disorder	34	56	28	54
Any mental disorder (above)	42	62	33	59
Any substance use disorder	64	75	34	57
Any personality disorder	40	57	37	38
Any psychiatric disorder (above)	78	90	61	79

(a) Includes mild, moderate and severe depression.

(b) Includes mania, hypomania, and bipolar affective disorder.

(c) Includes agoraphobia, obsessive compulsive disorder and social phobia.

Source: Butler et al. 2005.

International studies confirm high rates of mental disorder among prisoners worldwide. Typically, one in seven prisoners in western countries have psychotic illnesses or major

depression, with one in two male prisoners and one in five female prisoners having antisocial personality disorders (Fazel & Danesh 2002).

Common across all surveys is that prisoner populations exhibit high levels of insomnia, self-inflicted harm and injury, suicidal thoughts and attempts, and exposure to sexual, physical and emotional abuse. Depression, anxiety and substance dependence occur frequently. These symptoms typify the high rate of mental health problems among prisoners in Australia.

Incarceration may provide an opportunity for those with mental health problems to be screened and treated, and for some individuals it may be the only time they are in contact with treatment services. However, it is also recognised that prison may not provide the ideal therapeutic environment for persons with mental illness (Butler et al. 2006).

P is a 20-year-old male with a long history of imprisonment in both the juvenile and adult systems. He has a diagnosis of schizophrenia and a history of illicit drug use. His longest period of time at liberty was 4 days but since recruitment to the New South Wales Correctional Release and Treatment Scheme project he has managed to stay out for almost 6 months.

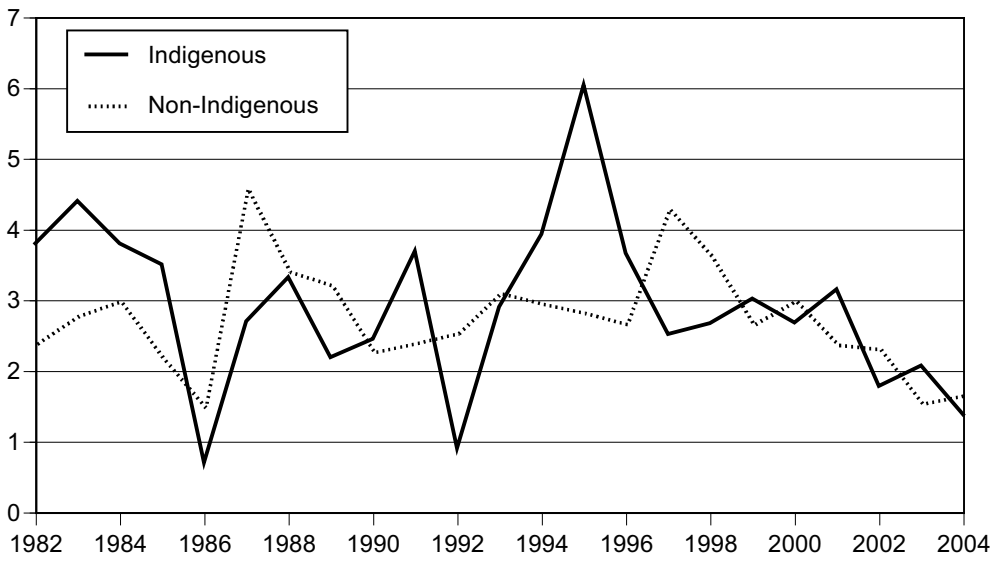
Deaths in custody

As part of the Australian Government's commitment to implementing the recommendations of the 1991 Royal Commission into Aboriginal Deaths in Custody, the Australian Institute of Criminology monitors and reports on trends in Australian deaths in prison, police custody and juvenile detention.

The national deaths in custody program (NDICP) has been responsible for monitoring the extent and nature of deaths in police, prison and juvenile custody since 1980. In 2004 there were 67 deaths in custody, including 39 deaths in prison custody – a decline from the 57 prison custody deaths recorded in 2001. The prison custody crude death rate was 1.6 male and 1.2 female deaths per 1,000 prisoners. Natural causes of death predominated (19), followed by hanging (14) – often through the use of bedding materials or blankets – and other causes (6). Most deaths occurred either in prison cells or public hospitals (17 each), followed by prison hospitals (5).

The rate of Indigenous deaths in prison custody in 2004 was 1.4 per 1,000 Indigenous prisoners, compared with 1.7 per 1,000 among non-Indigenous prisoners. Rates of Indigenous deaths in prison custody peaked in 1995 and have been declining since (Figure 3) (Joudo & Veld 2005).

Per 1,000 prisoners



Source: Joudo & Veld 2005.

Figure 3: Prison custody death rates, 1982–2004

Available information indicates that many prisoners have significant health problems, with high rates of mental illness, health risk behaviours such as drug and alcohol use, bloodborne viruses including hepatitis C, and other infectious diseases.

The importance to public health

Prisoner health is of concern not only for inmates and prison staff but also for the wider community. The prisoner population is transitory in nature in that most of the population are within the prison system for a short term, and the long-term population is relatively small. There is also a high rate of return to prison – in 2005, 60% of prisoners had previously been incarcerated. The result is a high level of mobility between prison and the community. Prisoners' states of health move with them between prison and their home community, therefore having a substantial impact on general community health (Young et al. 2005).

Thus, if left undiagnosed or untreated, prisoners' health problems readily become community health problems. Research suggests that there are major opportunities to protect public health by improving prison prevention, screening and treatment programs (NCCHC 2002). Improving prisoner health is of benefit to both the prisoner population and the community.

Risk of communicable disease transmission in the community

A major risk to the community is the potential for increased transmission of bloodborne viruses, particularly hepatitis C, via the prisoner population. The prevalence of hepatitis C is known to be some forty times higher among prisoners than the general community (Butler, Boonwaat & Hailstone 2005). On release, prisoners with hepatitis C pose a risk to the community.

Dolan & Wodak (1999) in their investigation into HIV transmission in prisons also found some evidence of transmission to the community, through HIV-positive former inmates engaging in unprotected sex.

Health care costs to the community

Poor management of health conditions and a lack of intervention in prison may result in a higher burden of disease and cost to the community.

Prisoners often have only limited interaction with the health system when released from prison (D'Souza et al. 2005; Stewart et al. 2004). Since prisoners lose Medicare eligibility while incarcerated, and the renewal of their cards may not always occur immediately following release, they may be at further risk of not receiving adequate health care.

Inmates who are released with untreated communicable or chronic diseases, or with mental health problems, will place a greater financial burden on the health care system than if treatment had commenced while still incarcerated, and at an earlier stage of disease. An increased prevalence of these diseases, and potentially of their complications, would result in higher costs, particularly for end-stage care (NCCHC 2002).

Social costs to the community

Research has shown that the social and economic consequences of imprisonment extend far beyond the individual prisoner and into the wider community (Borzycki 2005). Incarceration impacts on both prisoners and their families, with diminished employment prospects, financial hardship and domestic dislocation (Woodward 2003; Levy 2005). In return, this family deprivation adds social and financial costs to the community. The social costs on families and communities may also become health costs.

Prisoners' physical and mental health problems also add a social cost. If prisoners are released undiagnosed and untreated, the community will bear increased costs through the need for services and the difficulty prisoners may have reintegrating. Re-offending multiplies these costs because of the social and financial costs associated with the crime, as well as the cost of keeping the offender in prison (Borzycki 2005).

The children of prisoners have special needs. If not met, these needs can be both economically and socially costly, with emotional, social and behavioural problems, and poor performance at school. Over their lifetime, children of prisoners incur increased social welfare, justice and health costs (Woodward 2003).

In Victoria, in 2003–04, 62% of female prisoners had a child under the age of 17 years and about half were single parents. In New South Wales, 60,000 children (including 4% of all children and 20% of the Indigenous children in that state) had 'lost a parent to prison' before that child turned 16 years of age (Quilty et al. 2004). A 1999 study found that on any given day in that state, 11,000 children had a parent in jail (Woodward 2003). Among Indigenous prisoners, removal from parents during childhood was significantly associated with return to prison, subjection to sexual abuse and attempts at suicide (Egger & Butler 2000).

Imprisonment of parents greatly increases the likelihood of children becoming incarcerated.

Further costs are added to the community through the need to provide post-release support for single parents and their children, arrangements for foster care, or intervention by social services. In the long term, these efforts can help to reduce the risk that these children do not become offenders, implying that the resources directed to diversion programs and pre- and post-releases strategies, including stable housing for released prisoners and their children, is a sound investment.

If left undiagnosed or untreated, prisoners bring their health problems into the general community on release. Poor management of health conditions and a lack of intervention in prison can result in a higher burden of disease and added social and financial cost to the community.

The chance to intervene

Prison is a convenient setting for health promoting interventions, given the nature of the prisoner population. Prison is also one of the few places where access to marginalised and disadvantaged health groups is readily available. Prison is thus increasingly being recognised as an opportunity to initiate treatment for public health gain. The National Hepatitis C Strategy, for example, recognises custodial settings as one of the key sites in carrying out the management of hepatitis C (DoHA 2005b). Considering the well-documented poor health and socioeconomic status of many prisoners, such interventions would be targeting individuals in need, and benefits would also accrue to the communities that receive these prisoners upon release.

There are significant issues that need to be resolved before the prison setting can be utilised in such a way. An example is the popular concern over the level of spending on people convicted of crimes – often seen to be at the expense of other ‘more deserving’ population groups. The latest information highlights this: \$1.7 billion was spent on Australian prisons in 2004–05, at a rate of \$170 per prisoner per day (SCRGSP 2006). Health interventions must therefore be seen as cost-effective. Recent research from the United States indicates that prevention, screening and treatment of disease among prisoners can be cost-effective, and in some instances, cost-saving (Box 1).

Another issue is that a proportion of prisoners are sentenced for a short period of time, and so they may not be sufficiently exposed to an intervention for it to be effective. Treatment programs of hepatitis C, for example, take 6–12 months to complete, and post-release follow-up has inherent difficulties (Krieg 2006).

However, a majority of prisoners (83%) have sentence lengths of 12 months or more (ABS 2005b).

Health-related interventions in prisons

Communicable disease

Prison interventions to reduce the prevalence of bloodborne disease are either based on a ‘zero-tolerance’ or ‘harm minimisation’ approach. The zero-tolerance approach is used in many Australian prisons with advocates banning equipment that facilitates drug use (e.g. syringes) or other behaviours perceived as socially unacceptable. This approach has been criticised for not protecting the lives of inmates, as infection and drug use continue within prisons (Lancet 2005; Dolan & Wodak 1999; Levy 1999). Harm minimisation, on the other hand, is the principle behind efforts to control bloodborne disease in the community and has been advocated by the World Health Organization (WHO) as an appropriate means by which to deal with communicable disease within prisons. Countries are encouraged:

to promote, enable and strengthen widespread introduction and expansion of evidence-based targeted interventions for vulnerable/high-risk groups, such as prevention, treatment and harm reduction programmes (e.g. expanded needle and syringe programmes, bleach and condom distribution, voluntary HIV counselling and testing, substitution drug therapy, STI diagnosis and treatment)

in all affected communities, **including prisons**, in line with national policies (emphasis added)(WHO 2005:4).

Regarding treatment, initial results from a Canadian study indicate that hepatitis C treatment in correctional facilities is feasible, with over four-fifths of inmate patients having no detectable hepatitis C after 12 weeks of treatment (Farley et al. 2005).

Dolan et al. (2004) report that the condom distribution program in New South Wales was well supported and may assist in reducing transmission of HIV and other sexually transmitted disease. Other harm minimisation strategies, such as needle and syringe programs, have also been reported to be successfully implemented and cost-effective in Australia (Black et al. 2004).

Box 1: Cost-effectiveness of prevention, screening and treatment of disease among prisoners – the United States experience

Data from the United States suggests that redressing communicable diseases in prisons is largely cost-effective and in some cases cost-saving, because it reduces the future burden on the health system from prisoners who become seriously ill, and also prevents infected prisoners from spreading infection once they are released from prison (NCCHC 2002).

In the study, a cost-effective intervention means that the benefits the intervention will achieve are worth the costs, even if the intervention costs more than the money that is saved through averted illness or death. A cost-saving intervention saves more money in averted medical costs than is needed to implement the intervention.

Some empirically tested recommendations for dealing with communicable and chronic diseases in a cost-effective or cost-saving manner include:

Condition	Intervention	Cost-effective	Cost saving
Syphilis	Universal screening	Yes, if >1% infection	Yes, if >1% infection
Gonorrhoea	Universal screening	Yes	No (men); Yes if prevalence >8% (women)
Chlamydia	Universal screening	Yes	No (men); Yes if prevalence >9% (women)
HIV infection	Counselling and testing	Yes	Yes
Tuberculosis infection	Universal screening	Yes	Yes, if >3% of HIV-infected inmates have TB infection
Hypertension	Universal screening	Yes	No
Diabetes	Universal screening	Yes	No

Source: NCCHC 2002.

Strategies focused on supply and demand are also used to reduce drug use in prisons. Black et al. (2004) found that the two main forms of supply reduction in Australia (drug detection dogs and urinalysis) were relatively expensive and had not been evaluated. However, of the demand reduction strategies (including detoxification, methadone treatment, inmate programs and counselling, and drug-free units) many had been evaluated and found to be effective, and some were also relatively inexpensive.

Another key strategy to reduce communicable disease is immunisation. This has been proposed as an effective complementary strategy (along with harm minimisation and education) for minimising the risk of hepatitis B transmission in prisons (Awofeso 2002). It has also been suggested that influenza vaccinations for vulnerable prisoners may be effective in reducing morbidity and mortality in the case of an outbreak (Awofeso & Rawlinson 2005).

Chronic disease and behavioural risk factors

There is currently little evidence about the effectiveness of interventions to improve prisoner outcomes in relation to chronic disease and behavioural risk factors. Examples of successfully evaluated interventions that do exist include:

- A pilot alcohol use education program in the Northern Territory reported positive behaviour changes post-release among prisoners who attended the course, when compared with the control group (Crundall & Deacon 1997, in Young et al. 2005)
- Young et al. (2005), in their report on the poor health of women prisoners in Queensland, also suggest that health promotion activities in prisons may be able to positively affect 'hard to reach' women
- D'Souza et al. (2005) recommend routine screening for risk factors of diabetes and cardiovascular disease as a means for prevention and management
- In the United States, universal screening for hypertension and diabetes was found to be cost-effective by the NCCHC (2002) because of the added years that inmates with these diseases could expect to live and a reduction in complications. This suggests that the potential for Australian interventions to result in future health care savings should be further investigated.

Mental illness

Interventions in Australia to date are mostly clinically based – that is, care by psychiatric specialists or in hospital settings – and focus more on management of existing mental illness than prevention. Concerns have been raised that there are insufficient mental health services available to prisoners, particularly women prisoners, who appear to have a higher prevalence of mental illness than men. Butler and Allnut (2003) suggest a case management approach towards mentally ill prisoners with high levels of need. This would enable interventions to be tailored to the individuals' psychiatric needs.

Dealing with prisoners' mental health issues within the prison setting would reduce the burden on community health services post-release. It would also benefit the community by improving prisoners' chances of integrating into society, and potentially by reducing their risk of reoffending.

Re-entry management, post-release strategies and health

Managing a prisoner's return to the community can reduce the likelihood of their reoffending (Borzycki & Baldry 2003). Planning and managing prisoner re-entry or reintegration into the community, including continuity of health services, can benefit both the prisoner and the community.

Re-entry strategies are best delivered as part of an integrated program that includes interventions during incarceration. Strategies for the post-release period include those aimed at supporting the families of prisoners and building offenders' parenting skills, with practical considerations such as providing viable, comfortable and secure housing, and fostering social interactions (that is, enabling ex-prisoners to give back to their communities) (Borzycki & Baldry 2003). The Victorian 'Bridging the Gap' program features intensive,

outreach-based support that focuses on individual releasee needs and supports access to a variety of services, including drug and alcohol treatment, health care and social services. It has been seen to be effective in improving outcomes for recently released prisoners, including lower rates of reoffending within the first 3 months of release (Ross 2004).

Prisoners have been found to be at greater risk of death after release, and in Australia a significant number of deaths of ex-prisoners are related to drug and alcohol use (Stewart et al. 2004). Released Aboriginal and Torres Strait Islander prisoners in Western Australia have an almost 10 times greater risk of death than the general Western Australian population and an almost three times greater risk compared with their peers in the community. The main causes of death include suicide, drug and alcohol events and motor vehicle accidents (Krieg 2006). It is important that prisoners have continued support for behavioural and/or lifestyle-related changes that they have made in prison once they are released. In particular, prisoners who have participated in a drug-related demand-reduction strategy while in prison, such as a methadone program, need to have access to continued support when they are released back into the community.

The differing needs and placement difficulties of prisoners should be taken into account and reintegration should be tailored to reflect these differences. This is particularly important in responding effectively and efficiently to the needs of persons with mental illness who are returning to the community (Butler & Allnut 2003). A recent study of Indigenous prisoners in South Australia found that 73% expected to have no or insecure housing on release, with few options available – public housing is difficult to secure, and private rental is rarely achievable. This jeopardises continuity of health care for these persons who often have major health needs, especially in the areas of mental health and substance abuse (Krieg 2006).

Need for evaluation

Throughout the relevant literature, the need for evaluation of interventions and programs is emphasised. Evaluation of programs enables assessment of the effectiveness of interventions and can also identify potential improvements. For example, Ross' (2004) evaluation of the 'Bridging the Gap' program identified better outcomes for participants, but also highlighted the potential problem of 'long stay' clients who may not be successfully integrated into the community. Similarly, Black et al.'s (2004) evaluation of harm minimisation strategies in relation to drug use included an estimate of the savings in future health care costs, which strengthened the case for intervention, but they also found that many strategies were poorly documented, with largely unknown costs.

There are some difficulties in accessing prisoner populations for research purposes (Dolan et al. 2004). This suggests a need to invest in research to identify and assess existing programs and interventions in prisons, and to develop strategies for evaluating them, possibly in conjunction with existing survey mechanisms. There has also been some suggestion of investigating broader, more fundamentally preventive strategies to reduce the health impact of prisons, including reducing imprisonment rates for minor crimes (Awofeso 2005) and the use of 'drug courts' to divert drug-related offenders from prison and rehabilitate them (Cameron 2001).

Investment in health economic studies, such as those evaluating methadone provision, are a further need. Such research would also need to resolve ongoing popular concerns – for example, whether prisoners with short-term sentences would benefit from interventions and the costs and benefits to the community of reducing imprisonment rates and investing in interventions.

While in prison, inmates' health can be monitored and treated. Prison represents an opportune setting, and is one of the few places where ready access to marginalised and disadvantaged health groups is available. Studies have demonstrated that prevention, screening and treatment in prison can be cost-effective.

The information sources we have at the moment

Although there are numerous sources of information on prisoners' health, they are fragmentary and have not been integrated. Except for HIV notifications and deaths in custody, no national data collections currently exist. The collection of information about the health of prisoners remains sporadic, inconsistent and incomplete, and from this, a limited picture of prisoner health emerges. This section summarises the information that is presently available to guide and monitor progress in prisoner health.

National prisoner data collections

Demographic information about prisoners is available from administrative data collected by state and territory corrections authorities. The National Prison Census provides a snapshot of the prisoner population at 30 June each year. Results from this census were published by the Australian Institute of Criminology from 1982 to 1994, and by the Australian Bureau of Statistics (ABS) from 1995 onwards. Information on persons in custody and community-based corrections is published quarterly by the ABS, from administrative records held by corrective service agencies and the Australian Government. These collections contain no information on the health of prisoners.

While prisoners were included in the 1994 National Aboriginal and Torres Strait Islander Survey, prisoners and other people in non-private dwellings are outside the scope of regular ABS health and social surveys of the Indigenous population. The 6-yearly National Aboriginal and Torres Strait Islander Social Survey asks respondents if they had been incarcerated in the past 5 years and so information on the social characteristics of Indigenous persons who have been in prison custody including whether or not they have a long-term health condition or disability and health risk factors is available from this source. Better information from administrative collections will further complement information from the ABS survey program.

Only two data collections relevant to the health of prisoners are routinely published at a national level. The first is HIV notifications, collated and published by the National Centre in HIV Epidemiology and Clinical Research (NCHECR 2005). Since 1991, state and territory corrections authorities have forwarded tabulations of prison entrants, number of prisoners tested for HIV antibodies and number of prisoners newly diagnosed with HIV infection. These are available quarterly by sex. The proportion of prisoners tested at reception varies between states and territories, and currently only two jurisdictions (Queensland and Northern Territory) test all prisoners. Some states, such as New South Wales, only screen those prisoners considered to be 'at risk'. Throughout Australia, 54% of prisoners were tested in 2004, down from 79% tested in 1997 (NCHECR 2005).

The second national collection relates to deaths in custody and is published by the Australian Institute of Criminology (Joudo & Veld 2005). The national deaths in custody program (NDICP) has been responsible for monitoring the extent and nature of deaths in police, prison and juvenile custody since 1980. The Australian Institute of Criminology has coordinated the NDICP since its establishment in 1992. Deaths in prison custody remains the only health-related performance indicator for prisons included in the Productivity

Commission's Report on Government Services. Some other prison-related performance indicators include the average length of time out of cell, prisoner escapes or absconds, prisoner assault on a prison officer, and prisoner assault on another prisoner (SCRGSP 2006).

State-based health surveys

A number of detailed state-based surveys have been conducted, providing information on the health status and services, communicable and chronic diseases, health risk factors, and mental health of prisoners. These include the:

- 1996 and 2001 New South Wales Inmate Health Surveys (Butler 1997; Butler & Milner 2003; Butler & Allnut 2003)
- 2002 Victorian Prisoner Health Study (Victorian Department of Justice 2003)
- 2002 Queensland Women Prisoners' Health Survey (Hockings et al. 2002)
- 2004 National Prison Entrants' Bloodborne Virus Survey (Butler, Boonwaat & Hailstone 2005).

The latter survey provides information on the prevalence of HIV, hepatitis B and C and substance use and risk behaviours among prison entrants in four states – New South Wales, Queensland, Western Australia and Tasmania.

N, a young Aboriginal woman well known from her last incarceration, came back into custody three nights ago after a breach of parole. She had been out of gaol for five weeks. It was noted on reception that she had large ulcers on both her heels, and so she was sent directly to hospital. The Governor is asking how much longer she is likely to remain there, as it is causing officer staffing issues. The nursing staff rang the hospital to enquire, but were told they could not be given any information due to confidentiality concerns.

Now 28, N has had type 2 diabetes since age 13. She also has severe alcohol dependence. While in custody last time, she recommenced all her medications including her insulin. She had seen multiple specialists and was receiving treatment for diabetes complications, which included kidney and eye disease as well as numbness of her feet. She had seen a drug and alcohol specialist and has been started on Acamprosate, a medication to reduce her alcohol cravings.

Prison doctors and the Aboriginal health worker had spent a great deal of time with her last time, and felt she had made great progress in her desire to manage her health and in her recognition of her alcohol problems. The Aboriginal delegate had been very useful in helping the staff engage with her at the beginning.

However doctors were concerned about the discharge plan which had been made between her and her parole officer. On leaving the gaol, N planned to go to live with her father. They had been estranged since the death of her mother from diabetes complications when N was 16, but he had visited her in prison and she knew there was a community-run alcohol rehabilitation service in the area in which he lives, so she'd thought it may work. Her father had made it a condition of her coming to live with him that she sever all ties with her abusive former boyfriend.

Epidemiological studies

Numerous epidemiological studies have also examined specific diseases and conditions among prisoners in various Australian jurisdictions. More recent examples include:

- *Hepatitis C virus among inmates in Victorian correctional facilities* (Hellard, Crofts & Hocking 2002)
- *The epidemiology of hepatitis C infection in prisoner populations* (Dolan 2000).

Other existing data sources

A number of existing data sources on prisoner health have been identified which are routinely collected by corrections authorities or state and territory health authorities. These have the potential to provide useful, regular information on prisoner health. They include:

- *Reception assessment health screening.* Conducted by all states and territories on admission to prison, data from this source could be an extremely valuable resource in monitoring prisoner health. Reception assessments are primarily undertaken to determine the immediate health needs of a prisoner. Health status and risk factor information such as mental health, medication needs, drug use history, immunisation status, history of head injuries and sexual practices are collected.
- *Clinic presentations.* Prisoner medical records include detailed information on medical encounters, casualty or outpatient visits and hospitalisations.
- *Notifiable diseases.* Currently some jurisdictions are able to separate prison-based notifications of communicable diseases from those occurring in the community. Communicable diseases represent an immediate need in prisoner health, and prisoners have been identified as a priority group for the National HIV/AIDS Strategy and the National Hepatitis Strategy.
- *Injury surveillance.* An injury surveillance system has recently been introduced in the New South Wales correctional system, collecting information on injury type, body part, action, cause, setting, treatment and intent, along with a short narrative description.
- *Hospital separations.* The Australian Institute of Health and Welfare collates and maintains a core set of variables on the characteristics and activity of Australia's hospitals, as supplied by state and territory health authorities. This National Hospital Morbidity Database includes information on demographics, principal and other diagnoses, external causes of injury, procedures, diagnosis related group and length of stay. It is possible to identify prison-based hospitalisations in all jurisdictions except South Australia and Tasmania. In addition, recent revisions to ICD-10-AM will allow identification of injuries received in prison.

Information about the health of prisoners currently comes from several sources. These include state-based health surveys, epidemiological studies, reception assessment health screening, clinic presentations, notifications of communicable diseases, injury surveillance and hospital separations. There are only two national data collections relevant to prisoner health – HIV notifications and deaths in custody. The collection of information about the health of prisoners remains sporadic, inconsistent and incomplete. From this, a limited picture of prisoner health emerges.

Data gaps and issues

At present there is only limited accessible information on prisoner health. Prisoners – although a significant population group with major health needs – are excluded from routine community health surveys such as those conducted by the Australian Bureau of Statistics. Only two sources of national information on prisoners' health are currently published – HIV notifications, and deaths in prison custody. Better information on prisoner health has been identified as a priority in the field of crime and justice (ABS 2005a).

Surveys of prisoner health have provided useful information. These, however, are infrequent, and expensive and often cover only one jurisdiction. They also do not provide regular information necessary for routine monitoring.

Prisoner health information collected at the time of reception are also available, as are various data from clinic presentations, disease notifications, injury surveillance and hospitalisations. However, these data are not collected in a standardised form, not integrated at a national level, and often are not available in electronic format. While information on prisoner health is collected at various stages of the incarceration process, it is fragmentary, not readily available and has no mechanism in place for standardising and collating health survey, hospitalisation and other prisoner health data.

Based on literature reviews, examination of existing prisoner health surveys, reception forms and other prisoner health information sources, numerous data gaps have been identified.

Existing data on prison health is widely dispersed but not integrated

Information on prisoner health is currently collected through administrative data sources and health surveys. However, these vary widely between jurisdictions. Often, the information is not available in an electronic format. Integrating these sources nationally would allow co-ordinated dissemination of data and more in-depth national research into prisoner health.

Inconsistent data collections between jurisdictions

The information collected by jurisdictions is not uniform. There is a need for standardised health indicators, so that health status and health system performance can be compared across correctional jurisdictions and among subgroups of prisoners, such as young or old, Indigenous or non-Indigenous. Appropriate instruments need to be developed to collect health information from Indigenous and other culturally or linguistically distinct groups.

Collation of existing prisoner health information collected by the states and territories would increase awareness of prisoner health status and allow setting of national goals and targets. The National Prison Bloodborne Virus Project is an example of collaborative work across several states and demonstrates that the collection of prisoners' health indicators can be cost-effective.

Lack of information on the prevalence and treatment of communicable and chronic illness

There is a lack of national data regarding rates of communicable and chronic disease among prisoners. The limited data available suggest that prisoners have high levels of communicable and chronic disease, and high prevalence of health risk factors.

Lack of information on the prevalence and treatment of mental illness

While prisoners have been seen to have poor mental health, with a higher prevalence of psychiatric disorder reported among prisoners than in the general community, there are no national data on mental illness. Common mental health problems among prisoners include substance use disorder, depression and anxiety disorders. Often, only the most severe cases are identified, and many are undiagnosed. No standardised instruments exist to assess mental health problems among prisoners. There is also a need to develop better questions, and use appropriate interviewers for different cultural groups.

Lack of information on reasons for patient encounters

A system for recording data on patient encounters and the reasons behind them would improve understanding of the role of the health care system in prisoner health. The systems for capturing prisoners' health indicators need to develop electronically, with clear standards – currently, only hospital separations and notifiable diseases are collected in a standard format.

Lack of information on the outcomes (effectiveness and patient-based outcomes) of prison health care interventions

There is a lack of monitoring of health status and health services use while prisoners are incarcerated. There is a need to invest in research to identify and assess existing programs and interventions in prisons, and to develop strategies for evaluating these, possibly in conjunction with existing survey mechanisms.

Information on the health status of prisoners at critical phases of incarceration, such as at reception, during imprisonment and release, is important in monitoring health status and assessing outcomes.

Such information is necessary to deliver effective health care and effective health-related interventions for prisoners.

What we need from here

These data inconsistencies and gaps point to the need for a national minimum data set (NMDS) on prisoner health, which would provide a framework for jurisdictional data collection. A NMDS could be used for national monitoring and research, as well as policy development, evaluation and benchmarking. A NMDS would incorporate data collected at reception, during examinations or clinic presentations and at release. It would also standardise data collected in prison hospitals, and through health-related surveys. Such national data collection would assist in identifying policy relevant areas for action in prisoner health.

Initially, important areas of action include identification of stakeholders, data elements and the personnel or institutions that are best suited to collect relevant data. De-identified data should be made available for analysis, with appropriate protection for these data under current privacy legislation.

The first meeting of the Prisoner Health Information Group in March 2005 resolved to begin development of a NMDS for prisoner health. Work on this has commenced, beginning with an audit of available prisoner health information.

Next steps

Some steps forward include:

- complete the audit of prisoner health information currently being collected
- define a national minimum data set for prisoners
- standardise currently collected key data items and definitions across Australian prisoner health jurisdictions
- produce regular, national prisoner health indicator data
- introduce a regular national prisoner health survey, or consistent state surveys
- establish a (virtual) centre or clearinghouse for prisoner health information.

To adequately plan for, monitor, and treat prisoners' health, better information is needed. More is needed on the prevalence of communicable and chronic disease, mental illness, reasons for patient encounters, and the effectiveness of interventions. Although current data collections vary between jurisdictions and are widely dispersed, existing information collected by states and territories offer some possibilities for integration and analysis. Consistent state surveys, or a regular national prisoner health survey offer further possibilities.

A national data set derived from agreed, uniformly collected indicators would provide a framework for jurisdictional data collection, and would progress national monitoring, research and reporting. Better information will lead to better planning and treatment for prisoners' health, will save costs, and will, in turn, improve community health.

Glossary

affective disorder Mood disorder such as depression, mania or bipolar affective disorder.

anxiety disorder A mental disorder marked by excessive feelings of apprehension, worry, nervousness and stress.

bloodborne virus (BBV) A virus that lives in the blood and is transmitted by blood to blood contact. Two common bloodborne viruses are hepatitis C and HIV.

communicable disease Diseases or illnesses due to infectious organisms or their toxic products.

comorbidity When a person has two or more health problems at the same time.

correctional centre A legally proclaimed premises in which an offender is held in custody, including prison, prison farm, juvenile correctional centre, periodic detention centre, police station or court cell complex.

custody Imprisonment.

harm minimisation Prevention or reduction of the harms associated with drug use.

ICD-10 International Classification of Diseases, 10th revision. The ICD is produced by the World Health Organization and is used in the classification and study of diseases.

incarceration Imprisonment.

Indigenous For administrative collections, an Indigenous person is a person of Aboriginal and/or Torres Strait Islander descent who identifies, and is accepted as such by the community with which they are associated.

jurisdiction The state or territory in which a prisoner is held in custody.

marginalise To locate or position as relatively minor in terms of prestige, power or influence.

national minimum data set (NMDS) A set of data elements, agreed upon and used for mandatory collection and reporting at a national level.

personality disorder A condition or group of conditions in which an individual's entire life pattern is considered deviant or nonadaptive although the individual shows neither neurotic symptoms nor psychotic disorganisation.

post-release Following custody.

prison A legally proclaimed prison or remand centre which holds adult prisoners, excluding police prisons or juvenile detention facilities.

prisoner Adults aged 18 years or over held in custody, whose confinement is the responsibility of a corrective services agency.

reception The formal process whereby sentenced persons are received into prison.

remand Placed in custody while awaiting the outcome of a court hearing.

risk factor Any factor which represents a greater risk of a health disorder or other unwanted condition or event. Some risk factors are regarded as causes of disease, others are not necessarily so.

sentence A term of imprisonment from a court.

separation The formal process by which a hospital records the completion of treatment and/or care for an admitted patient.

sexually transmitted disease (STD) Any of various diseases or infections that can be transmitted by direct sexual contact including some (such as syphilis, gonorrhoea, chlamydia, and genital herpes) chiefly spread by sexual means and others (such as hepatitis B and AIDS) often contracted by nonsexual means.

socioeconomic disadvantage A relative lack of financial or material means experienced by a group in society which may limit their access to opportunities and resources that are available to the wider society.

substance abuse disorder Results from harmful use and/or dependence on illicit or licit drugs, including alcohol, tobacco and prescription drugs.

zero tolerance A non-discretionary enforcement policy for the criminal law or other informal rules.

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