
HEPATITIS C

PREVENTION, TREATMENT AND CARE:

GUIDELINES FOR AUSTRALIAN

CUSTODIAL SETTINGS

EVIDENCE BASE FOR THE GUIDELINES

These explanatory notes supplement the document, *Hepatitis C Prevention, Treatment and Care: Guidelines for Australian Custodial Settings* and are intended to assist stakeholders in understanding the evidence basis for the Key Guidance Points included in those guidelines.

July 2008

Ministerial Advisory Committee on AIDS, Sexual Health and Hepatitis
Hepatitis C Subcommittee

Contents

1.	Introduction.....	2
2.	Background to Hepatitis C in Custodial Settings in Australia	4
2.1	Epidemiology of hepatitis C	4
2.2	Prevention of hepatitis C infection	5
2.3	Hepatitis C in custodial settings	5
2.4	Natural history of hepatitis C infection	8
2.5	Hepatitis C and treatment and care	9
3.	Prevention of Hepatitis C in Custodial Facilities.....	11
3.1	Education about hepatitis C and the routes of transmission for inmates.....	11
3.2	Infection control in custodial settings	12
3.3	Recreational sport and exercise	12
3.4	Provision of bleach and disinfectant and education about their use	13
3.5	Access to razors, toothbrushes and safe barbering	14
3.6	Education and counselling related to injecting drug use	15
3.7	Drug treatment programs.....	15
3.8	Tattooing and body art under appropriate infection control procedures	16
3.9	Body piercing under appropriate infection control procedures	17
3.10	Prison-based needle syringe exchange	18
4.	Hepatitis C Testing in Custodial Settings	20
4.1	The national hepatitis C testing policy	20
4.2	Risk assessment and testing for hepatitis C.....	21
4.3	Pre and post test discussion	22
4.4	Hepatitis A and B vaccination	24
4.5	Surveillance	25
5.	Hepatitis C Education and Counselling.....	26
5.1	Access to educational materials	26
5.2	Purpose developed materials	26
5.3	Peer education	27
5.4	Access to counselling and support services	28
6.	Treatment and Care of People Living with Hepatitis C.....	29
6.1	Clinical assessment and referral for ongoing care and treatment.....	29
6.2	Counselling about treatment options	29
6.3	Treatment planning	30
6.4	Ongoing care and symptom management.....	31
6.5	Access to drug substitution and pharmacotherapy	32
6.6	Monitoring of hepatitis C for inmates who are not receiving treatment	32
6.7	Post release planning and care	33

7. Workforce Development	34
7.1 The custodial workforce	34
7.2 Health Service Workforce	35
List of Acronyms	36
Appendix 1	37
Appendix 2	38
Appendix 3	40
References	41
Additional Reading of Interest	49

Note on terminology

For the purposes of this document juvenile justice facilities are included under the broad umbrella of custodial settings – prisons, gaols, lock-ups, remand centres, for example.

The term “inmates” has been used generally and applies to all people in custody, be they charged, on remand or convicted.

“Medical services” refers to those services accessed by inmates, independent of whether they are provided by private or public organisations and whether this provision is by a corrections or justice service or via another health instrumentality.

“Staff” is the general term used to include salaried and waged workers, volunteers, collaborators or official visitors and contract workers.



1. Introduction

This document explains the evidence base for the guidelines for the prevention, treatment and care of hepatitis C in custodial settings. It has been developed, at the same time as the guidelines, by the Prisons Working Group of the Hepatitis C Subcommittee of the Ministerial Advisory Committee on AIDS, Sexual Health and Hepatitis (MACASHH). Members of the working group have been drawn from Australian state and territory governments including the custodial, drug and alcohol and blood borne virus fields and the community sector (Appendix 1). The guiding principles for this document and other supporting documents are included in Appendix 2.

Many international agreements are relevant to inmate health and well-being and, by extension, to the provision of evidence-based preventive health services. They include the International Covenant on Civil and Political Rights and the International Covenant on Economic, Social and Cultural Rights.

In Australia, the provision of custodial services and their related health services varies across the states and territories. This is a barrier to the development and implementation of policies and programs in response to problems that are common to all jurisdictions. Custodial services across Australia are uniquely placed to provide interventions that will have a positive impact on the prevention, treatment and care of hepatitis C in the prisons and this benefit will consequently flow on to the community. While some areas addressed in this document are acknowledged as being contentious, the guidelines seek to progress these, using available evidence. These guidelines provide a standardised response to hepatitis C for all jurisdictions.

The guidelines have a number of objectives. They identify key issues that impact on the delivery of health care to inmates with hepatitis C and the prevention of hepatitis C transmission within custodial settings. They are premised on the need for inmates to be able to access health services which are equitable with those generally available to the community as a whole. These guidelines promote and assume the adoption of cooperative and collaborative activities between custodial authorities and health service providers to implement strategies to prevent hepatitis C transmission and to treat hepatitis C infection. Finally, the guidelines encourage partnerships between, and across, jurisdictions involved in the provision of custodial services and support to inmates, their families and communities.

The guidelines constitute outcomes or goals which custodial services should seek to achieve rather than a set of absolute standards or laws to be enforced. They represent a statement of national intent, around which each Australian state and territory jurisdiction should develop its own implementation plans and range of relevant legislative, policy and performance standards that can be

expected to be amended from time to time to reflect 'best practice' and community demands at the state and territory level.

Effective hepatitis C prevention and care in custodial settings requires a collaborative and comprehensive approach. This involves bringing together the broadest range of stakeholders in the design and delivery of prevention and support services for inmates. The primary target audience for this document includes health, justice and human service ministers of state and territory governments and their administrators for custodial settings and the provision of health services in those settings.

2. Background to Hepatitis C in Custodial Settings in Australia

2.1 Epidemiology of hepatitis C

The hepatitis C virus is blood borne and may cause a multi-system infection that has become a major health epidemic for Australia in the 21st century. Nationally, it is the most commonly reported notifiable infectious condition after chlamydia (DoHA 2005). In 2005 an estimated 264,000 people living in Australia had been exposed to the hepatitis C virus. Of these 66,700 were estimated to have cleared their infection and 197,300 had chronic hepatitis C infection including 43,400 with moderate to severe liver disease (National Centre in Epidemiology and Clinical Research (NCHECR) 2006). According to current estimates around 9,700 new infections occur each year (Hepatitis C Virus Projections Working Group 2006). Dependent on the rates of uptake of treatment, it is projected that between 148,000 and 190,000 people will still be living with chronic hepatitis C in 2025, (Hepatitis C Virus Projections Working Group 2006).

The virus is primarily spread by the blood of a person with hepatitis C entering the bloodstream of another person. In Australia, the sharing of injecting drug use equipment is the most common mode of exposure. Approximately 82 per cent of current infections and 89 per cent of new infections are estimated to be due to unsafe injecting drug use practices including the sharing of needles, syringes and other injecting equipment (Hepatitis C Virus Projections Working Group 2006).

While it is difficult to estimate the number of injecting drug users in Australia, the 2004 National Drug Strategy Household Survey found that there were over 73,800 people (0.4 per cent) who had injected illicit drugs at least once in the previous 12 months (recent use). The survey also identified that the proportion of the Australian population who reported injecting at some time in their life was 1.9 per cent, which represents over 313,500 people.

Less commonly, hepatitis C may be transmitted by blood and blood product transfusion. The introduction of universal screening of blood donors in Australia in 1990 has virtually eliminated this risk in Australia. Other means of transmission include unsterile medical procedures in countries of high hepatitis C prevalence, by re-use of unsterile equipment for tattooing, body piercing and other body art, by mother-to-child transmission and by other miscellaneous exposures to blood, such as through needle stick injuries in the healthcare setting.

The risk of sexual transmission of hepatitis C is extremely low. While there have been some reported cases of hepatitis C being sexually transmitted, these cases have involved exposure to infected blood in the course of some sexual activity. Hepatitis C is not classified as a sexually transmitted infection.

2.2 Prevention of hepatitis C infection

There is no vaccine to prevent hepatitis C infection. Prevention of transmission relies primarily on behavioural change and access to the tools for prevention, such as sterile injecting equipment, drug withdrawal or maintenance programs. Successful antiviral treatment provides the benefit that the patient is no longer infectious.

People with, or at risk of, hepatitis C come from all sectors of the Australian community and their experience of hepatitis C varies dramatically according to individual and community circumstances. Many with chronic infection are at a much lower risk of transmitting infections because their behaviour has changed. The population groups at greatest risk of hepatitis C infection are injecting drug users, people in custodial settings, Aboriginal and Torres Strait Islander people, young people, people from culturally and linguistically diverse backgrounds and people from rural and remote areas. Incarceration is an independent risk factor for acquiring hepatitis C. The groups at high risk for infection in the community remain at risk in prison. Women in prison are at even higher risk than males because of the high prevalence of hepatitis C in incarcerated females.

2.3 Hepatitis C in custodial settings

There is no national surveillance system for hepatitis C infection in custodial facilities. A number of studies report the estimated prevalence of hepatitis C infection amongst inmates in Australia to be around 34 to 47%^α, and between 50 to 70% for female inmates (Black 2004, Butler 2005). This is many times higher than hepatitis C prevalence in the general community, which is estimated at approximately 1%. In contrast to the hepatitis C prevalence rates in prison, the HIV rates in prison are approximately 0.1%, compared with 0.07% in the community. This underscores the importance of, and urgency for, addressing the epidemic of hepatitis C in Australian prisons. Additionally, individuals can be infected with two or more blood-borne viruses at the same time (eg hepatitis C, HIV and hepatitis B). Co-infection can increase the severity and rate of the infection, including an increased death rate and disease progression (Dore 2005). While the viruses can share routes of transmission, the variation between incidence rates of these infections reflects their differential infectivity, community infection rates and routes of transmission. These interactions are a matter of concern for prison populations and those responsible for their welfare during periods of imprisonment.

^α The Northern Territory is the exception with relatively low rates of hepatitis C reported (4%) (Black 2004 – 4).

It is difficult to measure the incidence of hepatitis C infection in custodial settings as incubation periods are similar in length to the duration of an average sentence and the early stages of hepatitis C are often asymptomatic. Inmates with a history of injecting drug use are also likely to experience multiple imprisonment episodes, further complicating the task of defining the source of any hepatitis C infection in this population.

Transmission of hepatitis C undoubtedly occurs in custodial settings, though few cases have been documented in Australia or overseas (because of the factors mentioned previously) and estimates vary considerably (Haber 1999, O'Sullivan 2003). In one study, inmates were estimated to have 156 times the risk of acquiring hepatitis C in prison, compared to those who might be considered 'at risk' in the community (Miller 2002).

Hepatitis C poses a special threat to inmates and staff in custodial settings because of:

1. the high prevalence of hepatitis C amongst inmates and increased risk of infection within some sub-groups, reflecting the same population groups at greatest risk within the community. These effects are amplified in custodial settings;
2. participation by inmates in risk behaviours - the same behaviours that confer risk in the community setting take place in prison, but they pose a greater transmission risk because of the prison setting itself; and
3. factors associated with being in a custodial facility that increase the propensity for blood exposure incidents that contaminate the environment and create difficulties in maintaining adequate standards of personal and environmental hygiene.

2.3.1 Groups at high risk for hepatitis C infection in custodial settings

Hepatitis C incidence has been reported at 38 per 100 person-years among males with a history of injecting drug use entering Victorian prisons; incidence was also higher in injecting drug users with a history of imprisonment than those without. (Crofts in Crofts 2001). One study reported that 44% of inmates had a history of injecting drug use with approximately half reporting they had injected in prison (Butler 2003). People who inject illicit drugs are more likely to have encountered the custodial system than those who do not inject.

Aboriginal and Torres Strait Islander people are significantly overrepresented in adult and juvenile custodial settings. As at June 2002, 20% of all adult inmates identified as Aboriginal and Torres Strait Islander (Australian Bureau of Statistics (ABS) 2003). On a per capita basis, Indigenous Australians have an incarceration rate which is ten times higher than non-Indigenous Australians (ABS 2003). Custodial settings may provide an important point for initiation into injecting drug use (Rutter et al

2001). The high rates of injecting drug use in custodial settings, coupled with higher incarceration rates, place Aboriginal and Torres Strait Islander people at increased risk of initiation into drug use, drug use and hepatitis C transmission.

There are limited data available on ethnicity and crime; however this is not available for all inmates nor is it standardised between jurisdictions (Mukherjee 1999). While there is evidence about the high levels of hepatitis C in injecting drug users from some culturally and linguistically diverse backgrounds, this cannot be generalised across custodial settings.

The high rates of hepatitis C in women in prison (46-73%) were noted earlier (Black 2004). This is the opposite of the gender ratio for hepatitis C infection in the general community. For the period 2000-2004, the number of notifications of hepatitis C in men nationally was nearly double that reported in women (NCECHR 2005). Females in custodial settings are more likely than their male counterparts to be hepatitis C infected. They also report a higher incidence of continued injecting while in prison (Dolan 2001), thus leading to continued risk of exposure if they are not already infected. The logical extension of this is that women with chronic hepatitis C infection will have a greater need to access hepatitis C treatment to prevent or delay the onset of hepatitis C related liver disease.

Research has shown that the median age of initiation into injecting drug use is 18 years (Drug and Alcohol Medical Teaching Project 2005) and custodial facilities may expose at risk young people to injecting drug use.

2.3.2 Risk behaviours in custodial settings

There are numerous key risk behaviours that allow blood-to-blood contact in custodial settings – to a greater degree than in the broader community. These are important issues both for inmates and for the occupational health and safety of custodial staff. They include sharing injecting equipment and needles and syringes, tattooing and body piercing without appropriate infection control, injury and self harm, fighting and assaults (including sexual assault), barbering without appropriate infection control and sporting activities (especially contact sports).

While injecting drug use is less frequent in most prisons than in the community, it is usually far less safe in relation to the transmission of blood borne viruses because of the scarcity and re-use of injecting equipment (Crofts in Crofts 2001). Prisons and juvenile justice institutions are also settings in which some people start injecting. In NSW, 10 per cent of injecting drug users in prison reported that they commenced injecting in prison (Black 2004). Harm reduction measures addressing

tattooing and the sharing of injecting equipment are urgently needed, as are occupational health and safety protocols concerning needle-stick injury, self-harm, fighting, assaults and recreational sport.

2.3.3 Factors associated with custodial facilities

The spread of hepatitis C into communities may be increased by bringing together people (many of whom may be infected and do not know it) from different social networks and geographical locations into an environment where the risk of transmission is high and the full range of harm reduction measures is not available. Once released, inmates who have acquired hepatitis C while they have been incarcerated may unknowingly spread this virus to family members and friends. Therefore, when people living with hepatitis C are released following incarceration, prison health issues necessarily become community health issues.

In a study in NSW prisons, approximately 50% of inmates reported a history of injecting drug use (Butler 1997) and approximately 24% of male inmates and 43% of female inmates continued to inject whilst in custody (Dolan 2000). This group reported extremely high rates of sharing injecting equipment (Crofts 1997).

Access to harm reduction strategies such as education, the means of preventing transmission via needle and syringe programs and infection control is severely limited within custodial settings. There are also often restrictions on the distribution of a number of personal hygiene items such as bleach, razors, and scissors. Sterile tattooing and injecting equipment is not available and the means to clean such equipment is limited. A study conducted in NSW which found that inmates requesting bleach reported that they were sometimes searched and had their names recorded (Dolan 1998) highlights the barriers to safe practice.

The lack of differential sanctions for injected versus non-injected illicit drug use and variation in detection efficacy may cause inmates to switch from cannabis which holds no blood borne virus transmission risk, to using heroin, which poses considerable risk (Dolan 2000).

2.4 Natural history of hepatitis C infection

Between 25-35% of people with hepatitis C will clear the virus naturally within six months of infection. They will continue to have detectable antibodies, but are no longer infectious. The remaining 65-75% have chronic infection. People with chronic hepatitis C are at risk of progressive liver disease.

Without effective treatment, an estimated 20% of chronically infected people will develop cirrhosis over a 20–40 year period. Complications from hepatitis C related cirrhosis include liver cancer

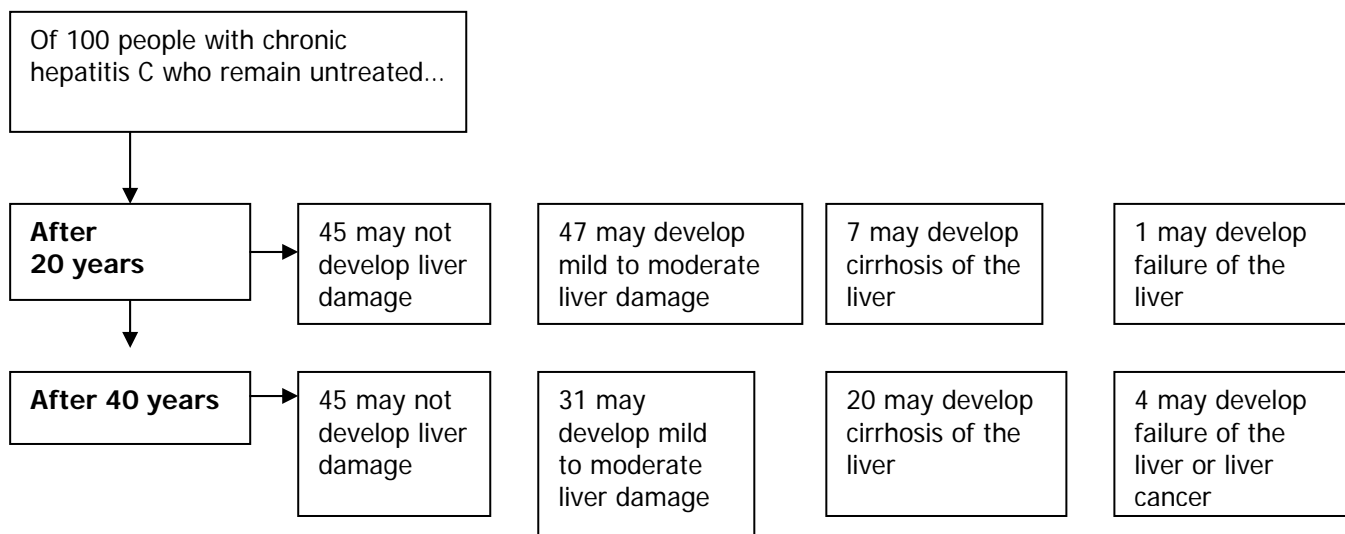
(hepatocellular carcinoma) and liver failure. Hepatitis C related advanced liver disease has become the major single reason for liver transplantation in Australia.

People with non-progressive liver disease may have considerable hepatitis C related symptoms. Hepatitis C can complicate and exacerbate other medical conditions and impact on quality of life. It is estimated that 37,800 quality years of life were lost in 2005 due to hepatitis C (Hepatitis C Virus Projections Working Group 2006).

Chronic Hepatitis C outcomes chart (natural history)

This chart shows the different outcomes that may occur with chronic hepatitis C. It does not aim to show individual outcome. Personal factors such as alcohol intake, age when hepatitis C was acquired and current level of liver inflammation may all influence a person's prognosis.

On average, one of every four people who contract HCV will clear their infection naturally within the first 12 months. Three of every four people will have chronic (ongoing) hepatitis C infection.



(reproduced from Hepatitis C Council NSW factsheet – www.hepatitisc.org.au)

2.5 Hepatitis C and treatment and care

The burden of disease from hepatitis C will continue to have serious implications in Australia. Projections indicate that without a substantial increase in people accessing treatment, the number of people with hepatitis C related cirrhosis will continue to increase through 2015 and beyond

(Hepatitis C Virus Projections Working Group 2006). Rates of hepatocellular carcinoma (HCC) and hepatitis C related liver failure are expected to show even greater patterns of growth due to numbers infected in the 1970's and 80's reaching the 20-30 year point in the natural history of hepatitis C (Hepatitis C Virus Projections Working Group 2006).

Between 50 per cent and 80 per cent of people who undergo treatment can achieve a cure (Hadziyannis 2004). Despite this, only about one per cent of those diagnosed with hepatitis C (approximately 2,000 people) are being treated annually. It is therefore essential that new transmissions of hepatitis C are minimised, chronic infections are identified and effective treatment is instituted for those with signs of liver disease progression.

In considering health care provision there are a number of significant operational barriers to inmates that may impede the delivery of hepatitis C services. These include availability of specialist services, transport and security concerns and competing custodial, health and funding priorities.

These issues clearly demonstrate that preventing and managing hepatitis C is a major challenge for health services in custodial settings. The challenge is to ensure that services respond to the epidemiological drivers of infection, are responsive to the needs of inmates and staff, whilst meeting the demands of a custodial setting. The period of incarceration should be viewed as a public health window of opportunity.

Hepatitis C treatment is relatively new and there has been a slow uptake of treatment in the community. The number of treatment centres is limited and currently only a specialist can initiate hepatitis C antiviral treatment. Post release management needs to be considered when any treatment or management strategy is developed in the custodial setting.

Given high rates of turnover among inmates and poor post-release follow-up, the significant risk of hepatitis C transmission in custodial settings has the potential to increase infection rates in the general community once inmates are released.

3. Prevention of Hepatitis C in Custodial Facilities

These Guidelines reflect the implementation of established hepatitis C prevention programs in Australia and overseas in the context of custodial settings. Prevention activities target behaviours that place people at risk and the settings where people may be exposed to infection. Such activities, in custodial settings will include an expansion of proven interventions as well as investigation of other innovative measures. Harm reduction measures employed in the wider community and custodial settings aim to complement each other.

The Australian National Council on Drugs (ANCD) (ANCD 2002) has stressed that the “failure to reduce the risk of hepatitis C and other blood-borne viral infection transmission in prisons severely undermines the work being conducted in the community with injecting drug users.” The National Hepatitis C Strategy 2005 – 2008 prioritises the need to establish collaboration between Australian state and territory governments to develop and implement hepatitis C education and prevention in custodial settings (DoHA 2005).

For the benefit of the broader community and inmates alike, it is critical that there is equity of access to these prevention programs within custodial services.

3.1 Education about hepatitis C and the routes of transmission for inmates

Education of inmates about the prevention and management of hepatitis C, including treatment, is a fundamental, necessary and effective preventive intervention.
--

The provision of health education is a fundamental and universal part of strategies to improve individual and population health (World Health Organization 1986, DoHA 2005). Peer based education programs for inmates are recognised as best practice and encouraged. Evidence supports the use of peer based organisations to best provide these services (Australian Injecting and Illicit Drug Users League (AIVL) 2006). If community peer based education services are not available, resources and education are provided by custodial facility health, welfare and education staff. Content should include, but is not limited to:

- natural history of hepatitis C;
- modes of transmission, especially in the prison setting, and strategies to reduce/minimise harm;
- access to the means of minimising transmission; and
- testing and opportunities for health monitoring and treatment, including post-release.

3.2 Infection control in custodial settings

Each institution needs to have in place appropriate infection control procedures. Staff education and training about infection control measures is an integral part of the proper application of these procedures.

Infection control procedures in custodial establishments are identical in principle and practice to those faced in other institutions that care for groups of people (day-care centres, nursing homes, mental health establishments, boarding schools). These principles range from building design and availability of facilities for maintaining personal hygiene, through to minimising work practices and procedures that pose a threat of cross-infection. Each institution will have particular issues for infection control to be identified and addressed in line with the national infection control guidelines (DoHA 2004) and standard precautions.

The potential transmission of infectious conditions is always an area of concern in the workplace. Testing for hepatitis C or other bloodborne viruses is not a substitute for the rigorous application of universal precautions (DoHA 2006, DoHA 2006a).

Infection control is an important aspect of institutional policy and practice. Implementation requires policy tailored to local needs and trained staff. The development and maintenance of infection control standards are outlined in *Infection Control Guidelines for the prevention of transmission of infectious diseases in the health care setting* (DoHA 2004).

The key aspects of infection control that apply to the custodial setting may be found in Appendix 3.

Education about these guidelines and their local application and implementation should be provided to inmates (in particular if they undertake any activities which potentially expose them to blood such as cleaning up blood spills) and staff and included in routine induction and on the job training.

3.3 Recreational sport and exercise

Compliance with the Guidelines on HIV/Hepatitis and Other Blood Borne Viruses in Sport (ANCAHRD 2001) reduces the risk of exposure to blood during sport and recreational activities within custodial settings.

Recreational sport and exercise are commonly undertaken in custodial settings, with estimates of in excess of 75% of inmates participating in the 2001 NSW Inmate Health Survey (Butler 2003a) undertaking exercise in the preceding month. The risk of transmission of blood borne viral infections in sport in the community is estimated at less than one percent (ANCAHRD 2001). Significantly, a

survey of Victorian prisons (Heale 2003) reports that 18% of inmates were exposed to blood during sport. These exposures ranged from direct person to person contact in football and karate to exposure via potentially contaminated boxing gloves, where inmates shared boxing gloves and protective inserts were not consistently worn.

3.4 Provision of bleach and disinfectant and education about their use

Provision of, and access to bleach and disinfectants is supported in custodial settings where no other safer alternatives are provided for decontaminating spills, surfaces or equipment. Education about the proper use of bleach is an essential component of its provision.

Bleach and other disinfectants are currently provided in a number of custodial settings in Australia. Theoretically, bleach and disinfectants are active against HIV and hepatitis B.

In the absence of other effective strategies such as use of sterile or single use equipment for skin penetration, the use of bleach is recommended (Morbidity and Mortality Weekly Report (MMWR) 1993). However, reliance on bleach and disinfectants alone for infection control is sub-optimal and undesirable. It is clearly an intervention to be used when there are no safer alternatives (US Department of Health and Human Services 1997, Public Health Agency of Canada 2004, World Health Organisation 2005).

Disinfection of used injecting equipment, and other potentially contaminated items, can theoretically reduce the likelihood of transmission of blood borne viruses and other pathogens. While studies on the effectiveness of bleach in inactivating the hepatitis C virus are limited, laboratory studies do indicate that bleach may reduce viral infectivity. However factors that reduce bleach's effectiveness against the virus include the amount of organic material, e.g., fresh, dried or clotted blood, left in, or on, the equipment, how long the blood has been sitting in the syringe, the length of time bleach is in contact with the equipment, the "freshness" of the bleach and whether or not the bleach is used properly. Overall the available literature is not conclusive and further research is required (Public Health Agency of Canada 2004).

The provision of bleach and disinfectants may have other benefits apart from a decrease in the transmission of blood borne viruses. It may also provide a practical way in which to identify a potentially at risk group for targeting delivery of health education messages and facilitating contact with hepatitis C related health services. Bleach and other disinfectants should be available to clean spills, contaminated surfaces and equipment which can be decontaminated (Betteridge 2005).

Disinfectants provide some protection to inmates and staff. Providing open and unrestricted access to effective, but inert disinfectants will address inmates' concern that custodial authorities may use provision of bleach as an opportunity to identify those who engage in illicit activities (Dolan 1998) and occupational health and safety concerns about bleach being used as a weapon (Betteridge 2005). Disinfectant, and education about how to use it, including the need to clean injecting equipment immediately following its use, should be made readily available, free and confidential in all custodial and custodial health settings and its use should not be associated with punitive measures.

The selection of disinfectants for use in custodial settings should be made with reference to the safety and efficacy of disinfection agents across a range of uses including cleaning or injecting equipment.

3.5 Access to razors, toothbrushes and safe barbering

The risk of transmission from sharing personal items is reduced if each inmate receives free razors and toothbrushes that can be readily replaced and any razors and toothbrushes left in ablutions areas are removed.

Adoption and application of infection control procedures for barbering equipment in custodial settings significantly reduces the risk of transmission.

Hepatitis C is readily transmitted through contact with microscopically contaminated equipment. There is a risk of hepatitis C transmission through shared equipment that breaches skin or mucosal surfaces such as razors, toothbrushes and hair clippers/shears. Theoretically, this risk increases if oral or skin health is poor. Barbering has been identified as the most likely route of transmission of hepatitis C in an Australian gaol (Haber 1999). Sharing of razors has been reported to be a possible source of HIV infection (Centre for Disease Control 1993, French 2003) and hepatitis C infection (Tumminelli 1995, Crofts 1999).

Strategies that support easy access to personal care items such as toothbrushes and razors and that ensure strict infection control for barbering/hairdressing eliminate equipment sharing and the consequent risk of blood borne virus transmission. Some jurisdictions have instituted an inmate barber system where appropriately skilled inmates provide hairdressing and /or peer education on the use of barbering equipment to minimise cross contamination. It is generally accepted that prisons should employ external professional hairdressers to provide barbering services to inmates to reduce the risk of cross infection (Prison Officers Association of Australia (POAA), 2006). Preventive measures for transmission are strengthened, providing that inmates' access to these personal care items and services is equitable with that of the general community.

3.6 Education and counselling related to injecting drug use

Easily accessible education and counselling about hepatitis C and injection drug use is a fundamental health promotion technique to support behaviour change. Tailoring the information to different groups' needs is an important component of accessibility.

The National Hepatitis C Strategy 2005-2008 (DoHA 2005) recognises the need to inform all people about the harms associated with drug use. It calls for the strengthening of drug education, including delaying the onset of injecting drug use and encouraging people who are dependent on drugs to seek drug treatment if this is clinically indicated. Initiatives under the National Drug Strategy 2004 – 2009 (DoHA 2004) include the development of a comprehensive approach to dealing with drug use and related harms in custodial settings.

There are many educational models that have a demonstrated effect on behaviour change and prevention of infection for hepatitis C and HIV (King 1999). Collaboration with existing services in the community, particularly those provided by peer based organisations, will allow for the translation of community strategies to custodial settings and tailoring of programs for high priority groups such as people from Aboriginal and Torres Strait Islanders or culturally and linguistically diverse populations, women and young people. Evidence supports the use of peer based organisations as the preferred providers of these services (AIVL 2006). If community organisation peer based education services are not available, resources and education can be provided by custodial facility health, welfare and education staff.

The provision of free and confidential education and counselling (and referral as appropriate) about hepatitis C and injecting drug use will support opportunities for behaviour change in custodial settings.

3.7 Drug treatment programs

Opportunities are provided for inmates to access a range of drug treatment programs, including detoxification, drug free rehabilitation and drug substitution (e.g. methadone) programs.

While incarceration exposes inmates to injecting drug use, it can also provide an opportunity to access drug treatments including pharmacotherapy and counselling programs. It is important for all inmates to have access to these programs and appropriate information on the nature of the programs. Pharmacotherapy programs are a demonstrably effective strategy to reduce injecting drug use and consequent transmission of blood borne viruses within the Australian custodial setting. By reducing the reliance on injecting to a similar level to that found in the community, these programs

support the prevention of the transmission of hepatitis C in custodial facilities, particularly where there is no access to clean injecting equipment (Dolan 1996, Dolan 1998). Dolan's study reported a significant reduction in the frequency of injecting and sharing of injecting equipment by inmates enrolled in methadone maintenance programs in contrast to those who were not provided with substitution therapy (Dolan 1996).

Prison based methadone maintenance programs were first introduced in 1986 in NSW as a pre-release program. Since then the program has been extended to inmates in all security classifications. Methadone maintenance treatment is more effective than abstinence-based therapies in reducing injecting drug use and blood borne virus transmission (Dolan 1998). In the custodial setting, methadone maintenance therapy has been shown to confer benefits to the individual and the community by reducing the reliance on injecting and the potential for needle stick exposure.

3.8 Tattooing and body art under appropriate infection control procedures

Compliance with Australian infection control standards for tattooing and body art reduces the risk of transmission of hepatitis C in custodial settings.
--

Australian data show that being tattooed in prison is an independent risk factor for hepatitis C infection (Hellard 2004). The risk of transmission from tattooing cannot be entirely eliminated even in the community setting where tattooing practices are relatively well regulated under skin penetration guidelines administered by health or local government jurisdictions. However, in the custodial setting where these practices are widespread this risk factor is magnified many times if tattooing is not safely performed or well regulated.

A number of strategies to prevent hepatitis C transmission through unsterile tattooing in custodial settings have been considered including the introduction of tattoo guns into custodial settings with various sanctions against their use thereby facilitating inmates' use of sterile practices when tattooing or painting henna body art. Similar programs have been trialled in overseas prisons, including a one-year pilot safer tattooing project (including provision of education to all inmates about safer tattooing practices) which was conducted in six Canadian federal prisons and concluded in September 2006 (Betteridge 2005, Corrective Services Canada 2005).

While it is recognised that there are divergent views among custodial officers on this issue, opportunities for Australia to trial a program to reduce the spread of hepatitis C through unsterile tattooing should be considered.

The benefits associated with professional tattooist visits include the use of sterile equipment and correct infection control procedures. It is important to recognise that there are costs associated with safe tattooing which will be incurred by the system and by inmates and that this may limit access to, and hence the effectiveness of the program. However, this cost must be weighed against the cost of potential infection and transmission of blood borne viruses such as hepatitis C.

Tattooing and body art that is not conducted under accepted infection control procedures increases the risk of transmission of hepatitis C and other blood borne viruses. Australasian standards and evidence from overseas programs about safe procedures are available to guide custodial services to develop and implement their own protocols to reduce the risk of infection associated with tattooing and body art.

Custodial facilities are encouraged to explore effective and sustainable strategies to reduce harm associated with tattooing and body art practices. The document, *Regulation of Infection Control in the Body Art Industry in Australia and New Zealand* (NPHP 2002) could be used as a guide for program development in this area.

3.9 Body piercing under appropriate infection control procedures

Compliance with Australian infection control standards for body piercing and other skin penetration practices reduces the risk of transmission of hepatitis C in custodial settings.
--

Some custodial facilities require the removal of metal body piercing jewellery, often resulting in inmates using unsafe practices to ensure that the piercing remains open during the period of incarceration. This is a complex area of infection control and there are risks associated with jewellery that can be torn out with consequent bleeding and subsequent bacterial infection. Body piercing and other skin penetration practices (including other esoteric practices such as genital adornment and scarification) that are not conducted under infection control procedures risk the transmission of hepatitis C and other blood borne viruses, particularly in the custodial setting. There are Australasian standards to guide custodial services in the development and implementation of their own protocols to prevent infection. Again, the document, *Regulation of Infection Control in the Body Art Industry in Australia and New Zealand* (National Public Health Partnership (NPHP) 2002) is a very suitable guide for appropriate strategy development.

3.10 Prison-based needle syringe exchange

The provision of sterile injecting equipment in prisons is a controversial and complex issue. Any needle and syringe exchange trial which is being considered by the Australian States and Territories would need to be supported by custodial staff and fully evaluated to assess occupational health and safety, impact on hepatitis C transmission and any other indirect effects.

Harm minimisation of injecting drug use in prisons is addressed by many interlinked strategies - there is no single intervention that can successfully stand alone. Some of these strategies include supply reduction through custodial surveillance, demand reduction by providing drug treatment programs and harm reduction through infection prevention programs ranging from staff and inmate education to needle/syringe exchange programs. Consistent with this principle, the *Standard Guidelines for Corrections in Australia (revision 2004)*, states that:

Prison systems should have a comprehensive and integrated drug strategy that seeks to prevent the supply of drugs into prison, reduce the demand for drugs and minimise the harm arising from drug use in prisons through education, treatment and enforcement.

In Australia, Needle and Syringe Programs (NSPs) are an important public health measure to reduce the spread of blood borne viral infections such as HIV and hepatitis C among injecting drug users. They are supported by the National Drug Strategy's harm minimisation framework. Community NSPs provide a range of services that include provision of injecting equipment and disposal facilities, education and information on reducing drug-related harms, referral to drug treatment, medical care and legal and other social services. Equipment provided includes needles and syringes, swabs, vials of sterile water and 'sharps bins' for the safe disposal of used injection equipment (Health Outcomes International 2002).

The primary aim of providing sterile injecting equipment is to prevent the shared use of injecting equipment, which can lead to the transmission of blood borne viral infections. Secondary benefits include education about reducing harm associated with drug use and injecting practices and referral for the diagnosis and management of blood borne viruses and drug related health problems. The engagement of injecting drug users with health services is shown to reduce the harm to themselves and society. NSPs are also an important point for collection of used injecting equipment (Health Outcomes International 2002).

Prison needle/syringe exchange programs are currently operating in corrective facilities in six European jurisdictions with favourable results to date. Different models have been applied to different facilities to take into consideration the needs of inmates and staff. The Swiss Federal Office of Justice introduced a prison-based needle and syringe program in 1998 following an evaluated pilot which

demonstrated neither any increase in consumption of drugs nor any account of needles being used as weapons. Overall there was a decrease in needle sharing and improved health status of inmates (Nelles 1995).

Evaluations of six programs from prisons in Spain, Switzerland and Germany have also been positive. The 2001 National Drug and Alcohol Research Centre (NDARC) report *Prison-Based Syringe Exchange: A Review of International Research and Program Development* (Rutter 2001) reported that: drug use remained stable or decreased over time; there were no reports of drug initiation; equipment sharing decreased significantly to almost zero at the end of the pilot period; and there were no reported cases of HIV, hepatitis B or C seroconversion.

At the same time, a range of issues associated with the establishment of NSPs exchanges in custodial settings have been identified by stakeholders. One of the key arguments against needle and syringe exchange or distribution in prison is that needles could be used as weapons against other inmates and staff and that the risk of accidental needle stick injury may increase. Some also argue against a needle and syringe exchange program in prisons because use of prohibited drugs is illegal and inmates would be thereby encouraged to persist in the same behaviour which may have led to their arrest and conviction. Other practical considerations include identification of drug users through inmates participation in the program and operational and distribution issues (Wallace 2005).

Based on the expectation that the introduction of a trial needle and syringe program would provide an opportunity to reduce the movement and use of an unknown quantity of illicit needles and syringes in prisons, and hopefully improve the occupational safety of all persons working in, visiting or living within the prison system, the Australian National Council on Drugs has recommended that needle/syringe exchange programs are trialled in custodial settings in Australia (ANCD NSP position paper 2002). In considering this recommendation in 2004, the Corrective Services Ministers' Conference did not support the implementation of a needle and syringe exchange program within Australian prisons. It is also noted that POAA members oppose any sanctioned program of supply of needles and syringes in prisons (POAA, 2006). However, if any jurisdiction were to trial a needle and syringe exchange program in the future it would be important for data derived from that trial to be used to guide any subsequent decisions on such a program in other prisons.

As long as needle and syringe exchange programs continue to be unacceptable, it is critical that bleach and disinfectants are readily available and used effectively (refer Section 3.4) and that much more effort is directed towards other demand reduction programs such as education and meeting the need for drug treatment.

4. Hepatitis C Testing in Custodial Settings

Voluntary testing for hepatitis C is available for all inmates in accordance with the National Hepatitis C Testing Policy which provides the framework for testing for hepatitis C in Australia, including within custodial services.

4.1 The national hepatitis C testing policy

The National Hepatitis C Testing Policy provides guiding principles, including that testing is confidential, voluntary and only performed with informed consent. It also endorses the use of pre and post test discussion and where a positive result is confirmed, further information, support and referral is recommended as necessary.

The seven key principles that guide hepatitis C testing in Australia are:

- confidential, voluntary testing with informed consent is fundamental to Australia's response to hepatitis C;
- testing is of the highest possible standard;
- testing is of benefit to the person being tested;
- testing is accessible to all those at risk of hepatitis C infection;
- testing is fundamental to understanding the epidemiology of hepatitis C infection in the community;
- testing is critical to interruption of transmission; and
- testing to assist in the monitoring of patients during the course of their Hepatitis C management is an integral part of their care.

The policy emphasises that the decision to have a hepatitis C test requires careful consideration. There are clear advantages and disadvantages to determining one's hepatitis C status.

4.2 Risk assessment and testing for hepatitis C

Recommendations to inmates for hepatitis C testing are appropriate and based on a thorough risk assessment.

Voluntary testing is available to inmates in all jurisdictions, with the exception of the Northern Territory, where testing is mandatory at reception.

Custodial facilities should undertake a risk assessment of all inmates to determine their past testing history, previous results, hepatitis C status and the risk of hepatitis C infection, and on the basis of this offer testing. Since reception into a custodial facility is quite stressful, there is more benefit in deferring clinical assessment and testing until a more settled time when the inmate is better able to understand the meaning of the test and remember health information provided. There are many reports of adverse health consequences to individuals who were unaware they had been tested and unprepared for the diagnosis (NSW Anti-Discrimination Board 2001).

Testing is the primary tool for diagnosing and assessing the prognosis for people with chronic hepatitis C. Inmates found to be hepatitis C antibody positive and inmates who report having previously been diagnosed as hepatitis C positive are offered Polymerase Chain Reaction (PCR) testing (which detects the presence of viral nucleic acids) to determine whether they have chronic infection or have cleared the virus. This diagnostic event shapes how people with hepatitis C understand their infection. It is essential that the diagnosis is handled with sensitivity and that everyone tested receives information about hepatitis C, the management of hepatitis C and the services, including treatment services, available to them.

The benefits of testing are maximised if the inmate is provided with pre and post test discussion and appropriate follow-up if the test is positive. For inmates infected with hepatitis C, the usefulness of testing will be maximised if their health status is regularly monitored. Repeat testing is indicated for inmates who are hepatitis C antibody negative on reception, based on exposure to risk factors while incarcerated or development of clinical conditions.

4.3 Pre and post test discussion

All information about hepatitis C, the test, prevention and management is provided appropriately, using understandable language and resources that are suitable to the inmates' socio-cultural background. Privacy and confidentiality are beneficial to this process. Training, including regular updates, is essential for health staff who provide testing and follow-up.

The provision of accurate, suitably presented information before testing and when giving test results is essential to allow individuals to make informed decisions about the benefits and risks of hepatitis C testing and understand the immediate and long term health implications of a positive result. Staff providing pre and post test discussions for both hepatitis C antibody and PCR testing need to be trained and supported to do this.

Respect for the inmate's privacy is important following the decision to test and at the time of the delivery of the test result. A confidential consultation will facilitate a more open exchange of thoughts and information. It is similarly important that information relating to testing and the test result be restricted to health service staff and custodial staff where it is relevant to the inmate's accommodation, movement or treatment.

Along with discussion and counselling, written information should be made available for inmates including in low literacy formats and languages other than English. Other formats for the provision of information should also be available such as video or computer based resources. Community based organisations can provide these resources, some of which have been developed specifically for custodial settings.

It is very important that inmates from Aboriginal and Torres Strait Islander communities and inmates from culturally and linguistically diverse backgrounds participate in the test discussion, so it is essential that it is performed in an appropriate language and is easily understood. Likewise, the discussion also needs to be appropriate for other individuals with low health literacy. For confidentiality reasons, inmates from Aboriginal and Torres Strait Islander communities and culturally and linguistically diverse backgrounds may not want to participate in a pre or post test discussion with a health care provider from their community.

Health professionals in custodial settings require training to develop clinical expertise in the difficult and complex area of hepatitis C risk assessment, prevention and management. Many of the related concepts of alcohol and drug use, social and mental health issues and harm reduction need to be considered and responded to in the management of inmates. Staff (and consequently their patients and the organisation) benefit from appropriate training and support in this complicated field.

4.3.1 Pre-test discussion

When offering a test, the practitioner provides appropriate information to the inmate in an understandable way about risk, points of referral (if necessary), assurances about confidentiality and privacy and assessment of the person's preparedness to be tested. This pre-test discussion prepares individuals for hepatitis C testing and the results of testing.

The health care provider and inmate thoroughly discuss testing before the test is performed. This is called 'pre-test discussion' rather than 'counselling' because the health care provider may also be required to assess risk, obtain consent, arrange follow up and identify referral needs. Counselling does not encompass this broader role. Use of the term discussion is not intended to diminish in any way the importance of the process. The need for pre test discussion is not reduced when testing is mandatory.

The hepatitis C test discussion is to provide accurate information about safe practices that are appropriate to the inmates injecting drug use, gender, culture and language. The complexity of the discussion will vary from person to person, depending on their risk assessment and other variables. The principles outlined in the National Hepatitis C Testing Policy are applicable to the discussion (DoHA 2006a).

Health staff of custodial facilities require training in the provision of test discussions and to ensure that appropriate test discussion precedes testing. The test discussion needs to be delivered in a format which is culturally and linguistically appropriate to the inmate.

4.3.2 Post-test discussion

Test results are given in clear and understandable way that is appropriate to the inmate's cultural, educational and social background. Delivering negative results provides an opportunity to reinforce preventive behaviours. Positive results are conveyed personally and privately. Components of this consultation include discussions of relevant health issues, the opportunities for referral and treatment, and prevention issues.

A negative result provides an opportunity to reinforce information and education messages about risk reduction strategies and to examine any difficulties or concerns the inmate may have. It is important to determine how recently the inmate has participated in risk behaviours so that a follow-up test can be arranged if necessary.

If the result is positive, post-test discussion with additional information, support and referral are given, as required. Information must be easily understood and provided in accessible formats, especially if giving a positive test result.

Staff of custodial facilities also require training in delivering test results and conducting the ensuing discussion. It is their responsibility to provide additional information, support and referral if the result is positive.

4.4 Hepatitis A and B vaccination

Co-infection with hepatitis C and hepatitis A and/or B can lead to worse health outcomes. Longer term imprisonment is an opportunity to protect inmates against vaccine preventable conditions such as hepatitis A and B.

Inmate health surveys indicate suboptimal hepatitis B immunisation of inmates, particularly those who are injecting drug users. Inmates are at increased risk of hepatitis B (Holly 2001). In settings such as prisons, outbreaks of some infections like hepatitis A are spread by faecal-oral contact. Inmates are at a higher risk of this infection than the general community (Whiteman 1998, Daly 2000). In Australia, outbreaks of hepatitis A have also been reported in men who have sex with men and injecting drug users (Ferson 1998).

The National Health and Medical Research Council (NHMRC 2003) recommends that inmates of long term custodial facilities be screened upon incarceration and, if susceptible, vaccinated using the combined hepatitis A and B vaccination. The Australian Immunisation Handbook (Australian Technical Advisory Group 2003) supports this recommendation. It also recommends that custodial staff, adolescent detainees (10-13 years), injecting drug users and individuals with hepatitis C are screened and immunised as appropriate. Hepatitis A and hepatitis B vaccination is standard care for people with hepatitis C, as outlined in the Model of Care for the Management of Hepatitis C Infection in Adults (DoHA 2003). Note the NHMRC Immunisation Handbook recommends inmates as a priority population for hep A and B vaccination (www.immunise.health.gov.au/internet/immunise/publishing.nsf/Content/Handbook-home).


The period of incarceration provides an opportunity to offer preventive health initiatives such as immunisation to inmates and juvenile detainees. Vaccination against both hepatitis A and hepatitis B should be offered to all inmates who have hepatitis C, who have not previously been immunised. Immunising custodial staff against hepatitis B is also strongly encouraged.

4.5 Surveillance

Participation by custodial services in sentinel site surveillance programs for hepatitis C provides useful data to understand patterns of infection and to develop and evaluate prevention programs at an institutional and jurisdictional level.

Under public health legislation, hepatitis C is a notifiable disease in all jurisdictions. Infectious disease notifications form the basis of disease surveillance mechanisms that are crucial for monitoring the prevalence and incidence of hepatitis C. Surveillance also provides data to assist in the evaluation of prevention interventions and increases knowledge of the long-term consequences of hepatitis C infection. There is wide support for the collection of quality data across the country.

The National Hepatitis C Strategy 2005-2008 recognises the need to explore surveillance models which better target Aboriginal and Torres Strait Islander populations at risk (DoHA 2005).



5. Hepatitis C Education and Counselling

Hepatitis C educational programs provide access to the means to protect the individual and minimise the risk of hepatitis C transmission and are necessary and effective interventions for inmates and staff in custodial settings.

Education is a low cost intervention for the prevention of hepatitis infection and must therefore be a central component of any hepatitis C health program in custodial settings. Education is relevant to inmates while in prison and on release, and for custodial health and custodial staff. As there are commonalities in relation to the transmission and prevention of all blood borne viruses and sexually transmitted infections, combined education and counselling on all blood borne viruses and sexually transmitted infections should be considered.

5.1 Access to educational materials

The ready availability of current, easy to understand information about hepatitis C in prison, its prevention and medical management supports inmates to prevent hepatitis C transmission and seek testing and clinical assessment if they are at risk.

Having correct information and understanding about a condition are the first steps to a reasoned response and changing health related behaviours (King 1999, AIVL 2006). Inmates need to be regularly informed and updated about hepatitis C and strategies to prevent transmission with special reference to the likely risks of transmission within custodial settings. Information must include ways to support hepatitis C negative people to remain negative. Information dissemination is most effective when it is coordinated and consistent with that disseminated in the general community.

Inmates should receive hepatitis C education on entry, during their prison term, and in pre-release programs. All inmates should have an opportunity to discuss this information with qualified people in a confidential environment.

5.2 Purpose developed materials

Resources that are designed to meet the educational needs of groups of inmates are a far more effective way of communicating information that can be understood and used by the audience.

Information intended for the general public (through posters, leaflets, and the mass media) should also be available to inmates, although education initiatives should not be limited to those targeted to

the general public. All written materials distributed to inmates should be appropriate for the educational level in the custodial population, in which people with low levels of literacy are over-represented. Information should be made available in a language and form that inmates can understand, acknowledge the constraints of the custodial environment and be presented in an attractive and clear format. Community based and professional organisations and can provide these resources and some resources have been developed specifically for custodial settings.

Purpose developed materials should be age, gender and culturally appropriate, made available in low literacy formats and languages other than English. Other formats for the provision of information should also be available including video or computer based resources.

5.3 Peer education

The provision of peer education that can be tailored to the custodial setting is another effective and proven method to decrease the transmission of blood borne viruses. Cooperative development of these programs between custodial staff and peer educators maximises their success.

The involvement of people living with hepatitis C and peer education has been proven internationally to be effective in reducing the transmission of blood borne viruses (Rutter 2001). People with hepatitis C have a unique understanding of the behaviours and contexts which place others at risk of infection. With appropriate training and support, inmates with hepatitis C are well placed to communicate messages about reducing transmission to those who are either unaware of their hepatitis C status or at risk of acquiring hepatitis C. They are also able to present information, and provide a personal view of the risks and benefits about the testing and diagnostic process.

Peer based drug-user organisations and hepatitis councils can provide a useful resource in the custodial setting and can assist inmates post release. Peer educators are uniquely placed to judge which strategies would work in custodial facilities. In particular, peer educators who have experienced treatment for hepatitis C can provide valuable support to inmates undergoing or considering treatment.

Hepatitis C related discrimination can arise from fear of transmission and/or from assumptions and judgements made about injecting drug use. Disclosure of hepatitis C status may therefore result in alienation from family and friends and have particular ramifications for Aboriginal and Torres Strait Islander communities. The high rate of incarceration of Aboriginal and Torres Strait Islander people can mean that a number of members from within one family group can be housed within the one facility. In some settings this may result in support for an inmate with hepatitis C, but in others it can result in stigmatisation. As previously discussed Aboriginal and Torres Strait Islander inmates are

drawn from diverse populations and peer based strategies will need to be mindful of this heterogeneity, especially with respect to familial and kinship links, communication channels and power bases. A lack of appreciation of these variable cultural arrangements has the potential to undermine the success of any peer education program.

Custodial facilities should develop peer education programs which are appropriate to their settings. It is also important that peer educators are appropriately supported in the delivery of their education services. Close collaboration between custodial officers and peer educators in planning and deliver of programs is likely to improve outcomes (Deville 2005).

5.4 Access to counselling and support services

Improved access to support and counselling by a range of service providers will benefit individual inmates and the broader custodial community.

Inmates have limited access to psychological support. The individual's response to the possibility of a chronic illness as well as the other demands from the psychologically challenging environment of a custodial facility is improved by counselling and support (reference?). These services are best provided by health staff and augmented by custodial workers and staff from community based organisations. Consideration should be given to the training of peer counsellors from within the prison population. The use of hepatitis C peer counsellors in the community has been shown to be effective in improving hepatitis C knowledge and reducing risk behaviour (Aitken 2002). This must be a voluntary program and inmates should not be compelled to provide or receive peer education, counselling or support.

Given the overlap of issues in preventing the spread of all blood borne viruses, counsellors and peer educators should have the skills to provide services in relation to all blood borne viruses and sexually transmitted infections.

Custodial facilities should endeavour to make psychological services available to inmates with hepatitis C. In particular, inmates on hepatitis C treatment may experience higher levels of need at this time as hepatitis C drugs can cause side effects such as depression, irritability, anger, fever, chills, fatigue and muscle aches. A careful emotional and psychological assessment is therefore important before commencing treatment.

6. Treatment and Care of People Living with Hepatitis C

6.1 Clinical assessment and referral for ongoing care and treatment

All inmates with clinical or laboratory evidence of hepatitis C infection require specialist medical assessment and are provided with the ongoing clinical care and treatment that is equitable with that offered to people with hepatitis C outside prison.

Inmates with symptoms of hepatitis C and inmates who are known to be hepatitis C antibody positive should be offered assessment by appropriately trained medical, nursing or allied health staff to determine whether they have chronic hepatitis C infection. This assessment should be consistent with the Model of Care for the Management of Hepatitis C Infection in Adults (DoHA 2003).

Inmates with chronic hepatitis C must be referred for health status assessment, health monitoring and ongoing care, including treatment (Lloyd 2006, Read V 2006, Boonwaat 2006). The decision to undertake treatment is made by the inmate on the advice of the health service provider (Dore 2005). Studies have shown the time taken to consider and then decide on whether to start treatment is quite protracted. As well as considering the details of therapy (including different drugs, side effects, success rates etc) inmates and their health providers will be faced with decisions about post-release management – another complex situation. The actual clinical decisions for inmates are identical to those in the community and are outlined in the Model of Care for the Management of Hepatitis C Infection in Adults (DoHA 2003). However, the process may be a little different. Ongoing clinical assessment and care is provided to all inmates with hepatitis C regardless of whether they decide to have antiviral treatment.

It is important that those inmates at increased risk of disease progression have priority access to treatment. The demonstrated benefits of treatment include an improvement of symptoms and quality of life (mental and physical), a decrease or elimination of progression of liver disease, viral eradication and reduction in the risk of virus transmission (Seivert in Crofts 2001).

6.2 Counselling about treatment options

Inmates who are recommended for treatment require full discussion and counselling about all aspects of therapy.

Treatment options will have been raised with the inmate in the process from the test discussions through to diagnosis and assessment. Counselling about treatment options and treatment is in line

with those standards outlined in the Model of Care for the Management of Hepatitis C Infection in Adults (DoHA 2003).

Prognosis is determined by a number of factors including the clinical assessment. Counselling is the process by which the inmate can explore his or her preparedness to commence treatment. This is a complex decision making process in the community which can be even more complicated in the custodial setting. Studies have demonstrated that decision making about undertaking hepatitis C treatment is a lengthy process (Temple-Smith 2006). Adherence to treatment regimens is improved when patients are provided with information, resources and support to anticipate interruptions or changes to their lives and to minimise or prevent adverse effects (Kolor 2005).

Counselling about treatment should at a minimum address:

- the preparedness and enthusiasm of the inmate;
- the desirability to commence treatment while in prison and if relevant the capacity of the inmate to continue treatment post release;
- pre-existing psychiatric illness which may recur or amplify as a result of treatment;
- commitment to not becoming reinfected; and
- the impact of treatment failure, at present, once treated, a person can not access subsidised treatment for a second time.

It should be noted, however, that the regulation of prison life can assist treatment for some people. Treatment should not be discounted simply because an inmate is incarcerated. It is appropriate for discussions and counselling about treatment options to include exploring the effect of continuing treatment, as necessary, outside the custodial setting.

Counselling about treatment options should be made available to all inmates in custodial settings.

6.3 Treatment planning

Pre-treatment planning and preparation for inmates who decide to access hepatitis C treatments will result in better outcomes.
--

The success of any medical management is highly dependent on adequate planning and preparation. This is even more important in settings that do not routinely provide specialist and specialised clinical services. Inmates require the same, if not higher levels of treatment planning and preparation as individuals who are treated in the community.

Treatment regimens for hepatitis C are prescribed in the Model of Care for the Management of Hepatitis C Infection in Adults (DoHA 2003). This model applies equally to all Australians and no distinction is made in the Model for people in custodial settings.

Currently, treatment plans are initiated for either 24 weeks or 48 weeks, depending on the specific genetic structure (genotype) of the virus. Patients are required to have a virological response to treatment in order to remain on treatment after the first 12 weeks. A person is said to have a “sustained response” if the hepatitis C virus cannot be detected in their blood six months after completing the treatment. A sustained response is thought to mean that the illness is cured.

The complexity of treatment planning in the custodial setting arises from factors specific to that setting. This includes, but may not be limited to:

- access to liver biopsy, where clinically indicated;
- access to serological and clinical monitoring while on therapy;
- the duration of stay in the custodial setting;
- the capacity to provide appropriate support to the inmate while on treatment;
- stable accommodation in the custodial facility, or if relocation occurs capacity of the receiving facility to provide continuity of care; and
- post release care for the patient who is released during treatment or soon after treatment ceases.

Successful implementation of health services for assessment and treatment of hepatitis C requires collaboration between health and custodial services.

6.4 Ongoing care and symptom management

Inmates on treatment for hepatitis C require regular medical attention to monitor their progress and to manage any adverse effects.

Ongoing care during treatment is essential. This allows for the monitoring of clinical markers and the patient’s capacity to cope with the side effects of treatment. In the community setting, side effects are managed by regular monitoring and dose reduction or cessation of treatment, and the provision of prophylactic or therapeutic drugs and strategies to manage side effects.

A number of factors may prevent access to this same range of strategies in the custodial setting. Consequently, possible side effects need to be carefully addressed in treatment planning and in the management of the patient, once treatment has commenced. Access by the inmate to: serological

and clinical monitoring; drugs or other supports to reduce side effects; and psychological or psychiatric support are critical.

Currently, Australians who have accessed treatment once through the Pharmaceutical Benefits Scheme are unable to access subsidised treatment at a later time. The decision to commence an inmate on treatment must therefore be made with a commitment to provide the necessary support to maintain that inmate on treatment to complete their treatment course and to facilitate care in the community should an inmate be released whilst on treatment (Watson 2006).

6.5 Access to drug substitution and pharmacotherapy

Treatment of drug use is an integral part of the care of many individuals with hepatitis C within and outside custodial facilities.

Methadone maintenance and other pharmacotherapy (eg buprenorphine, naltrexone) have demonstrable benefits in the community and custodial setting. These need to be encouraged and expanded as part of a balanced prevention and treatment program (Dolan 2001, Dolan 2006).

There are no exclusion criteria for access to specialised hepatitis C treatment relating to either current or previous injecting drug use or maintenance on drug substitution treatment. In the community people who inject drugs and people on drug substitution programs, primarily methadone, have been successfully treated for hepatitis C (Hallinan R 2006, Sasadeusz J 2006). Consideration should be given to stabilising the drug use of inmates who inject drugs via pharmacotherapy, prior to commencing hepatitis C treatment. Providing the same range of addiction treatment that is available in the community to inmates maximises the success of management of drug use in custodial facilities.

6.6 Monitoring of hepatitis C for inmates who are not receiving treatment

Access to regular health status assessment and monitoring by inmates with hepatitis C infection who are not in therapy is necessary to determine progression of their disease.

All people infected with hepatitis C benefit from regular monitoring of their general health and liver function status. Hepatitis C is a dynamic condition; similarly, treatment recommendations and decisions made by clinicians and patients can be reviewed and changed on the basis of changed circumstances. All jurisdictions should ensure that inmates infected with hepatitis C have access to health services for monitoring of their health status consistent with the Model of Care for the Management of Hepatitis C Infection in Adults (DoHA 2003), regardless of whether they are on treatment or not.


6.7 Post release planning and care

Careful planning to maximise access to health care after release is critical to the inmate's well being. The establishment of sustainable links between custodial health services and community health and support agencies is an integral to successful post release care.

There is a high turnover of inmates through Australian custodial facilities with many inmates detained for relatively short periods. This situation means that although voluntary testing programs are often in place, many inmates have not been assessed or offered treatment for hepatitis C. There is the risk that an inmate may be infected prior to release given that incarceration is an independent risk factor for hepatitis C infection. Inmates are a Public Health opportunity to reinforce prevention and health promotion messages. Further, inmates who are assessed as having hepatitis C require effective discharge planning and referral by custodial health services.

Inmates who are preparing for or have started treatment require support on release to provide them with a continuity of care. This has been reported as a problematic area for the management of hepatitis C and drug and alcohol issues. Community agencies and professional medical organisations provide a useful referral service in relation to these individuals, particularly drug and alcohol services because of the critical role they play post release.

As part of the continuum of care, custodial health services should establish linkages with community agencies and professional organisations to plan for and maximise access to post release care.



7. Workforce Development

All staff are given education, information and training about hepatitis C, at orientation and with updates and refreshers through the course of their work within custodial services. Training should address matters relating to attitudes and values.

Some of the compelling reasons that custodial services staff, both custodial and health, become experts in their respective fields for hepatitis C prevention, treatment and care include:

- custodial facilities have an obligation to take reasonable measures to effectively manage all foreseeable risks of harm to inmates, including exposure to blood borne viruses such as hepatitis C;
- inmates will return to society after their imprisonment and their health is an issue of concern to the general community;
- the health of inmates is important for the occupational health and safety of the staff of custodial facilities.

The prevalence of hepatitis C in prisons is very high among inmates. It can be very infectious if the conditions for transmission are suitable. This makes awareness of hepatitis C an inevitable fact in the workplace. Training and education that is tailored to staff requirements is extremely important to prevent and minimise chances for accidental transmission of hepatitis C. Such programs are designed to provide introductory information on orientation and build on this with practical training and regular updates. Hepatitis C is a workforce issue for all employees and their employers, although opportunities for exposure and preventative and protective strategies will vary with work duties. Additionally, staff must be provided with the necessary equipment, that is accessible, to respond to exposures.

The workforce is defined as the custodial staff, non custodial administrative and support staff, health care workers, including authorised volunteers, official visitors and the like in the custodial setting. Workforce matters will be better progressed if they are approached collaboratively with unions and industrial organisations including occupational health and safety standards and work-cover authorities. Such matters may also be incorporated into workplace agreements or similar contracts.

7.1 The custodial workforce

Custodial staff are responsible for the management of the custodial setting and should be given every opportunity to understand hepatitis C, its epidemiology, transmission, prevention, care, management and treatment and the practical on the job consequences of working with a population with high

levels of infection. Existing staff will need to have access to ongoing training in all aspects of hepatitis C. New staff should receive education about all aspects of hepatitis C as part of their induction and on-the-job training programs, including 'lockdown training'.

While each custodial facility will need to develop resources and delivery strategies particular to their institution, there are considerable resources in the community which can be drawn on to facilitate this. Linkages with community based agencies and professional organisations will assist these collaborative strategies. The make up of the custodial population will influence the type of information required. Training must include, but must not be limited to, infection control strategies and should address attitudes and values.

In addition to any on the job training any programs providing pre-service training must include education on blood borne viruses. Along with transmission, prevention and treatment related issues such education must address matters relating to attitudes and values.

Educating custodial staff will also assist custodial authorities to meet their occupational health and safety obligations to their employees, contractors and others in the workplace.

7.2 Health Service Workforce

All health care workers require education about hepatitis C. However, the high prevalence of hepatitis C in the custodial environment requires that the all health workforce within the prison setting develop and maintain a higher level of knowledge and expertise about hepatitis C. The information and education needs of the custodial health workforce are not vastly different than that required by the health workforce in the community. Custodial health services should make use of training opportunities provided in the community. Such linkages will facilitate assessment, health, monitoring and treatment in the facility and assist in post care planning and service delivery.

Staff training must complement the introduction of any treatment or health management strategies. Mentoring of nursing staff, by collaborating community treatment services has proved useful in a number of settings.

Particular attention will need to be given to staff involved in testing and related activities so that these individuals are appropriately equipped to provide education and support. Corrective Services are responsible for ensuring that medical staff have appropriate hepatitis C training and education to understand and manage the health needs of inmates.

List of Acronyms

AHC	Australian Hepatitis Council
AIDS	Acquired Immune Deficiency Syndrome
AIVL	Australian Injecting and Illicit Drug Users League
ANCAHRD	Australian National Council on AIDS, Hepatitis C and Related Diseases
ANCD	Australian National Council on Drugs
BBV	Blood-borne virus
DoHA	Commonwealth Department of Health and Ageing
HIV	Human Immunodeficiency Virus
IGCAHRD	Intergovernmental Committee on HIV/AIDS Hepatitis C and Related Diseases
MACASHH	Ministerial Advisory Committee on AIDS, Sexual Health and Hepatitis
MMT	Methadone maintenance treatment/programs
NDARC	National Drug and Alcohol Research Centre, University of NSW
NHMRC	National Health and Medical Research Council
NSP	Needle and Syringe Program
POAA	Prison Officers Association of Australasia
RNA	Ribonucleic Acid
STIs	Sexually Transmissible Infections

Appendix 1

Members of the joint Ministerial Advisory Committee on AIDS, Sexual Health and Hepatitis (MACASHH) and Intergovernmental Committee on HIV/AIDS, Hepatitis C and Related Diseases¹ (IGCAHRD) Prisons Working Group

Chair

Professor Robert Batey AM. Chair of the Hepatitis C Subcommittee of MACASHH

Members

Ms Judith Wheeldon

Ms Annie Madden, Australian Injecting & Illicit Drug Users League

Mr Stuart Loveday, Australian Hepatitis Council

Ms Kim Stewart, Chair of the former Intergovernmental Committee on HIV/AIDS, Hepatitis C and Related Diseases and member of the Blood Borne Virus and Sexually Transmissible Infections Subcommittee

Mr Gino Vumbaca, Australian National Council on Drugs (ANCD)

Associate Professor Michael Levy, Centre for Health Research in Criminal Justice (CHRCJ)

Mr Michael Doyle, Aboriginal Health Council

Commissioner Kelvin Anderson, Commissioner, Corrective Services Administrators Conference (CSAC) Victorian Office of the Custodial Services

Shani Prosser, Population Health Justice Health, NSW Long Bay Custodial Complex

¹ In 2006, the Intergovernmental Committee on AIDS, Hepatitis and Related Diseases was replaced by the Blood Borne Virus and Sexually Transmissible Infections Subcommittee of the Australian Population Health Development Principal Committee.

Appendix 2

The principles which underlie this strategy use the framework established by the *National Hepatitis C Strategy 2005-2008*.

These are:

1. **Health promotion**, which is the process of enabling people to increase control over, and to improve, their health.
2. **Partnership** between people with hepatitis C, inmates, custodial authorities, health authorities, community-based organisations, researchers and.
3. **A social determinants model** which recognises that inmates are disproportionately affected by all forms of social disadvantage and have reduced capacity to manage their own health.
4. **Equity of access** for inmates to evidence-based responses to hepatitis C prevention, education, treatment, care, and support, commensurate to that offered in the community.
5. **Participation** in the development and delivery of treatment, care, support, prevention and education strategies by inmates with hepatitis C.
6. **Harm reduction** – which does not condone illegal behaviours such as illicit drug use - but, consistent with the framework established by the *National Drug Strategy (ref)*, refers to policies and programs aimed at reducing drug related harm. Harm reduction interventions aim to improve health, social and economic outcomes for individual inmates, others in the custodial setting and the community generally as part of a continuum which also includes supply reduction and demand reduction.

Key Supporting Documents Include:

- *The National Hepatitis C Strategy 2005 - 2008* (The Australian Government Department of Health and Ageing);
- *The National Aboriginal and Torres Strait Islanders' Sexual Health and Blood Borne Virus Strategy 2005 – 2008* (The Australian Government Department of Health and Ageing);
- *Model of Care for the Management of Hepatitis C Infection in Adults 2003* (Australian National Council on AIDS, Hepatitis C and Related Diseases);
- *National Hepatitis C Testing Policy, 2003* (Australian National Council on AIDS, Hepatitis C and Related Diseases);
- *Infection Control Guidelines: for the prevention of transmission of infectious diseases in the health care setting, 2004* (The Australian Government Department of Health and Ageing)
- *Supply Demand and Harm Reduction Strategies in Australian Prisons, 2004* (Australian National Council on Drugs);

-
- ANCAHRD Bulletin Number 19 HIV, Hepatitis and Other Blood Borne Viruses in Sport, June 2001 (Australian Government Department of Health and Ageing).

Appendix 3 – Infection Control

The following have been developed from the *Infection Control Guidelines for the Prevention of Infections Diseases in the Health Care Setting 2004*.

The key aspects of infection control that apply to the custodial setting include:

- Adoption of standard precautions which assume that anyone is likely to have a blood borne virus (BBV) and therefore adopt procedures that minimise the risk of infection via the exchange of blood and body fluids, and that staff use protective attire (gloves etc) when they are likely to encounter blood.
- Identification of the specific infection control hazards relating to Custodial facilities and development of policies and procedures to manage those risks.
- Provision of appropriate equipment and supplies to support hygienic practices.
- Ready availability of a “spills kit” to deal with exposure incident.
- Specific procedures in place for managing any blood exposure: this will include a system for immediate assessment of the infectious status of the sources and exposure as well as provision for cleaning and expert assessment about the risks and feasibility of treatments and their documentation. Details are given in the *Infection Control Guidelines* (<http://www.health.gov.au/internet/main/publishing.nsf/content/icg-guidelines-index.htm>)
- Waste management systems that prevent the possibility of exposure incidents that may occur including “sharps” injuries and provide for the personal hygienic of females and the appropriate management of menstrual female sanitary items.
- Adoption of AS/NZS 4187 standards for cleaning, disinfecting and sterilizing of reusable medical and surgical instruments and equipment and maintenance of associated environments in health care settings by Custodial health services.
- Surveillance and documentation of BBV infections acquired and evidence that specific strategies are implemented to diminish factors that lead to such infections.
- Education about these guidelines and their local application and implementation should be provided to inmates and staff in routine induction and professional development activities.

References

1. Aitken CK, Kerger M, Crofts N, Peer-delivered hepatitis C testing and counselling - a means of improving the health of injecting drug users. *Drug and Alcohol Review*. 2002 21(1):33-38
2. Anti Discrimination Board of NSW. C change: Report of the enquiry into hepatitis C related discrimination. NSW Attorney General's Department. Sydney NSW 2001. Available at http://www.agd.nsw.gov.au/lawlink/adb/ll_adb.nsf/pages/adb_hepatitis_c_enquiry
3. Australian Bureau of Statistics. 2003. Prisoners in Australia. ABS, Canberra, ACT.
4. Australian Government Department of Health and Aged Care. Models of Care for the Management of Hepatitis C Infection in Adults. Canberra: Commonwealth Department of Health and Aged Care. 2003. Available at http://www.ancahrd.org/pubs/pdfs/model_care.pdf
5. Australian Immunisation Handbook, 8th Edition Australian Technical Advisory Group on Immunisation 2003
6. Australian Injecting and Illicit Drug Users League (AIVL). 2006. A framework for peer education by drug-user organisations. Canberra: Australian Injecting and Illicit Drug Users League.
7. Australian National Council on Drugs. Needle and Syringe Programs: Position Paper. 2002. Canberra: Australian National Council on Drugs. Available at http://www.ancd.org.au/publications/pdf/pp_needle_syringe.pdf
8. Australian National Council on AIDS, Hepatitis C and Related Diseases. 2001. Guidelines on HIV/Hepatitis and Other Blood Borne Viruses in Sport. Bulletin 19. June 2001. Available at http://www.ancahrd.org/pubs/bulletins/01/19_hivhepc_sport.pdf
9. Betteridge G. Harm reduction in prisons and jails: International experience. 2005. Canadian HIV/AIDS Legal Network, Canada.
10. Black, E, Dolan K and Wodak, A. 2004. Supply, Demand and Harm Reduction Strategies in Australian Prisons. Australian National Council on Drugs: Research Paper No 9. Australian

National Council on Drugs, Canberra, ACT. Available at
http://www.ncnd.org.au/publications/pdf/rp9_australian_prisons.pdf

11. Boonwaat L, Haber P, Levy M et al. A review of the outcomes of hepatitis C treatment in New South Wales [abstract]. Presented at the 5th Australasian Viral Hepatitis Conference. Sydney. 2006
12. Butler, T, Boonwaat L and Hailstone S. 2005. National Prisons Entrants' Blood Borne Virus Survey Report, 2004. Centre for Health Research in Criminal Justice and National Centre for HIV Epidemiology and Clinical Research, University of NSW, Sydney.
13. Butler T, Levy M, Dolan K et al. Drug use and its correlates in an Australian prisoner population. *Addiction research and Theory* 2003 11(2):89-101
14. Butler T.G, Dolan KA, Ferson MJ et al. Hepatitis B and C in New South Wales prisons: Prevalence and risk factors. *MJA* 1997 166:127-130.
15. Butler, T and Milner, L. 2003a. The 2001 New South Wales Inmate Health Survey. New South Wales Corrections Health Service, Sydney.
16. Centers for Disease Control and Prevention. HIV transmission between two adolescent brothers with haemophilia *MMWR* 1993, 42:948–951.
17. Communicable Diseases Network Australia. Australian Hepatitis C Surveillance Strategy. Sydney: NCHECR 1993. Available at
<http://www.health.gov.au/internet/wcms/publishing.nsf/content/cda-pubs-cdi-2002-cdi2601-cdi2601d.htm>
18. Corrective Services Canada Safer Tattooing Practices Initiative: Guidelines. CSC, 2005
19. Crofts N, Dore G & Locarnini S. Hepatitis C: an Australian Perspective. 2001. IP Publishing Melbourne.
20. Crofts, N. A cruel and unusual punishment. *MJA* 1997 166:116.

-
21. Crofts N, Thompson S, Kaldor J. Epidemiology of the hepatitis C virus in Australia. Technical report No 3. May 1999. Commonwealth Department of Health and Ageing. Canberra. Available at [http://www.health.gov.au/internet/wcms/publishing.nsf/Content/cda-cditech-hepc.htm/\\$FILE/hepc_epidemiology.pdf](http://www.health.gov.au/internet/wcms/publishing.nsf/Content/cda-cditech-hepc.htm/$FILE/hepc_epidemiology.pdf)
 22. Daly P. Hepatitis C and the British Columbia experience with hepatitis A vaccination. Journal of Viral Hepatitis. 2000 Supplement 7 (SUPPLEMENT 1):23-25
 23. Dolan, K. Can hepatitis C transmission be reduced in Australian prisons? MJA 2001. 174:378-379.
 24. Department of Health and Ageing. Infection control guidelines for the prevention of transmission of infectious diseases in the health care setting. 2004 The Australian Government Department of Health and Ageing. Canberra ACT. Available at <http://www.icg.health.gov.au>
 25. Department of Health and Ageing. 2004. The National Drug Strategy Australia's Integrated Framework: 2004-2009. Canberra: Commonwealth Department of Health and Ageing. Available at <http://www.nationaldrugstrategy.gov.au/>
 26. Department of Health and Ageing. 2005. National Hepatitis C Strategy 2005-2008. Canberra: Commonwealth Department of Health and Ageing.
 27. Department of Health and Ageing. National HIV testing policy. 2006. Canberra: Commonwealth Department of Health and Ageing. (*in draft*)
 28. Department of Health and Ageing. National Hepatitis C testing policy. 2006a. Canberra: Commonwealth Department of Health and Ageing. (*in draft*)
 29. Devilly G, Sorbello L, Eccleston L et al. Prison based peer-education schemes - review article. Aggression and violent behaviour. 2005 10(2):219-240
 30. Dolan K. The epidemiology of hepatitis C infection in prison populations. Canberra, Commonwealth Department of Health and Aged Care, 2000.

-
31. Dolan, K., Wodak, A., Hall, W. A bleach program for inmates in NSW: An HIV prevention strategy. *Australian and New Zealand Journal of Public Health*. 1998 22:838-840.
 32. Dolan K. Surveillance and prevention of hepatitis C in Australian prisons: a discussion paper. Technical report #95, 2000. 2000 Sydney: National Drug & Alcohol Research Centre.
 33. Dolan K, White B, Shearer J et al. Methadone maintenance treatment reduces mortality, re-incarceration and hepatitis C among inmates [abstract]. Presented at the 5th Australasian Viral Hepatitis Conference. Sydney. 2006
 34. Dolan K, Hall W, Wodak A. Methadone maintenance reduces injecting in prison. *BMJ* 1996 312(7039):1162
 35. Dolan KA, Wodak A and Hall WD, Methadone Maintenance Treatment Reduces Heroin Injection in New South Wales Prisons. *Drug and Alcohol Review* 1998 17:153-158
 36. Dore, G. & Sasadeusz, J. 2005. Co-infection: HIV and Viral Hepatitis: a guide for clinical management. Australasian Society for HIV Medicine, Sydney, Australia.
 37. Drug and Alcohol Medical Teaching Project. A NSW Department of Health and University of Sydney Collaboration 2005. Available at http://www.medicine.usyd.edu.au/central/drugeducation/Topic_6Opioids_Part_1_Nov_05.pdf
 38. Ferson MJ, Young LC, Stokes ML. Changing epidemiology of hepatitis A in the 1990s in Sydney, Australia. *Epidemiology & Infection*. 1998 121:631-6
 39. French MA; Herring BL; Kaldor JM et al. Intrafamilial transmission of HIV-1 infection from individuals with unrecognized HIV-1 infection. *AIDS*. 2003. 17(13):1977-1981.
 40. Fried MW, Shiffman ML, Reddy KR, et al. Peginterferon Alfa-2a plus Ribavirin for Chronic Hepatitis C Virus Infection. *NEJM*. 2002. 347:975-982
 41. Haber PS, Parsons, SJ, Harper SE et al. Transmission of hepatitis C within Australian Prisons. *MJA* 1999 171:31-33
 42. Hadziyannis, SJ et al. 2004. Chronic Hepatitis C: A randomised study of treatment duration and ribavirin dose. *Annals of international Medicine* Vol 140 No.5: pp346-357.

-
43. Hallinan R, Byrne A, Agho K et al. Referral for chronic HCV treatment among patients on opioid replacement therapy [abstract]. Presented at the 5th Australasian Viral Hepatitis Conference. Sydney. 2006
 44. Heale P, Wallis J, Swan A, Alberti S. 2003. Survey of harms in Victorian Prisons. Turning Point Alcohol and Drug Centre Inc. Melbourne, Australia.
 45. Health Outcomes International, National Centre in HIV Epidemiology and Clinical Research, Drummond, M. 2002. Return on investment in needle and syringe programs in Australia: Summary report. Canberra: Commonwealth Department of Health and Ageing. Available at [http://www.health.gov.au/internet/wcms/publishing.nsf/Content/health-publth-publicat-document-roireport-cnt.htm/\\$FILE/roireport.pdf](http://www.health.gov.au/internet/wcms/publishing.nsf/Content/health-publth-publicat-document-roireport-cnt.htm/$FILE/roireport.pdf)
 46. Hellard M et al. The prevalence and risk factors associated with the transmission of hepatitis C virus in Australian Correctional facilities. *Epidemiology and Infection* 2004 132:409-415
 47. Hepatitis C Council NSW factsheet - www.hepatitisc.org.au
 48. Hepatitis C Virus Projections Working Group. 2006. Estimates and Projections of the Hepatitis C Virus Epidemic in Australia 2006. National Centre in HIV Epidemiology and Clinical Research Darlinghurst, NSW.
 49. Holly,C (2001 Review of the literature on injecting drug use within urban indigenous communities. Aboriginal Drug and Alcohol Council.
 50. King R. Sexual behavioural change: where have the theories taken us? UNAIDS. Geneva. 1999. Available at www.who.int/hiv/strategic/surveillance/en/un aids_99_27.pdf
 51. Kolor B. Patient education and treatment strategies implemented at a pharmacist managed hepatitis c virus clinic. *Pharmacotherapy* 2005 25:1230-41
 52. Lines RR, Jürgens G, Betteridge H, et al. Prison Needle Exchange: Lessons from a comprehensive review of the international experience. Montreal: Canadian HIV/AIDS Legal Network. 2004

-
53. Lloyd A. Enhancing hepatitis C prevention, treatment and care in prison populations [abstract]. Presented at the 5th Australasian Viral Hepatitis Conference. Sydney. 2006
54. Miller, E., Bunting, S. Increased risk for HCV-seroconversion in a South Australian women's prison, in conjunction with the University of Adelaide. Paper presented at the 34th Public Health Association of Australia Annual Conference. 2002. Adelaide.
55. Morbidity and Mortality Weekly Report (MMWR). 1993. 42(21):418-9. Use of bleach for disinfection of drug injection equipment.
- Mukherjee S. Ethnicity and crime: an Australian research study. 1999 Australian Institute of Criminology Canberra. Available at <http://www.aic.gov.au/publications/ethnicity-crime/ethnic-app.pdf>
56. National Centre in HIV Epidemiology and Clinical Research. 2005. HIV/AIDS, viral hepatitis and sexually transmissible infections in Australia Annual Surveillance Report. National Centre in HIV Epidemiology and Clinical Research, the University of NSW, Sydney, NSW; Australian Institute of Health and Welfare, Canberra, ACT. Available at <http://web.med.unsw.edu.au/nchechr/>
57. National Health and Medical Research Council. The Australian Immunisation Handbook. 8th ed. Canberra: Australian Government Publishing Service, 2003. Available at <http://www.health.gov.au/immhandbook/pdf/handbook.pdf>
58. National Public Health Partnership (NPHP). Regulation of Infection Control in the Body Art Industry in Australia and New Zealand. National Public Health Partnership. 2002. Available at <http://www.dhs.vic.gov.au/nphp/publications/legislation/bodyart.pdf>
59. Nelles J and Fuhrer A. Drug and HIV prevention at the Hindelbank penitentiary: Abridged report of the evaluation of the pilot project. Bern SFOPH, 1995
60. O'Sullivan B, Levy M, Dolan K et al. Hepatitis C transmission and HIV post-exposure prophylaxis after needle and syringe sharing in Australian prisons. MJA 2003 178(11):546-549
61. Prison Officers Association of Australasia 2006. Personal correspondence to Prisons Working Group.

-
62. Public Health Agency of Canada. The Effectiveness of Bleach in the Prevention of Hepatitis C Transmission - Final Report. 2004. Available at http://www.phac-aspc.gc.ca/hepc/hepatitis_c/library/bleach/index_e.html
 63. Read V, Bevan J. Meeting the challenge of developing prison based hepatitis C and other blood-borne viruses education programs [abstract]. Presented at the 5th Australasian Viral Hepatitis Conference. Sydney. 2006
 64. Reddy KR. Public Health Impact, Natural History, Diagnosis and Clinical Management of Hepatitis C: Emerging Clinical Options with Interferon-based Therapies. Medscape, 2002
 65. Rutter, S, Dolan, K, Wodak, A, et al. Prison-Based Syringe Exchange: A Review of International Research and Program Development. 2001. Sydney: National Drug and Alcohol Research Centre. Available at <http://ndarc.med.unsw.edu.au/NDARCWeb.nsf/page/Reports>
 66. Sasadeusz J, Dore G, Kronberg I et al. Pegylated interferon alfa-2a plus ribavirin for patients with chronic hepatitis C on drug dependency treatment: interim analysis from the methadone study [abstract]. Presented at the 5th Australasian Viral Hepatitis Conference. Sydney. 2006
 67. Temple-Smith M, McNally SP. Considering treatment for hepatitis C [abstract]. Presented at the 5th Australasian Viral Hepatitis Conference. Sydney. 2006
 68. Thein HH, Krahn M, Kaldor J et al. Cognitive and mood effects of pegylated interferon alfa-2a and ribavirin combination therapy in HCV monoinfected and HIV/HCV coinfecting individuals [abstract]. Presented at the 5th Australasian Viral Hepatitis Conference. Sydney. 2006
 69. Tumminelli F, Marcellin P, Rizzo S et al. Shaving as a potential source of hepatitis C virus infection. Lancet 1995, 345:658.
 70. US Department of Health and Human Services. Medical advice for persons who inject illicit drugs. HIV Prevention Bulletin. CDC; Health Resources and Services Administration; National Institute on Drug Abuse, National Institutes of Health; Substance Abuse and Mental Health Services Administration; May 1997. Available at http://www.cdc.gov/idu/pubs/hiv_prev.htm.

-
71. Whiteman D, McCall B, Falconer A. Prevalence and determinants of hepatitis A virus exposure among prison entrants in Queensland, Australia: implications for public health control. *Journal of Viral Hepatitis*. 1998 5(4):277-283
72. World Health Organization. 1986 Ottawa Charter for Health Promotion. Presented at the First International Conference on Health Promotion, Ottawa, Canada. Available at http://www.who.int/hpr/NPH/docs/ottawa_charter_hp.pdf
73. WHO Regional Office for Europe's Health Evidence Network 2005. What is the evidence for the effectiveness of interventions to reduce hepatitis C infection and the associated morbidity?

Additional Reading of Interest

1. AIPC. (2001). National Hepatitis C Resource Manual, Ed. Canberra: Australian Institute for Primary Care (AIPC), Commonwealth Department of Health and Ageing.
2. Boswell, M. *Managing Health Care in a Multi-Provider Environment - Prisoner and Offender Health Care Services - P & OHCS*. Paper presented at the *Australian Institute of Criminology Conference, Privatisation and Public Policy: A Correctional Case Study*. 1997. Melbourne, 16 & 17 June 1997.
3. Burt, M. *Models for Managing Health Services in a Multiprovider System*. Paper presented at the *Australian Institute of Criminology Conference, Privatisation and Public Policy: A Correctional Case Study*. 1997. Melbourne, 16 & 17 June 1997.
4. Calzavara, L., Partridge, N., Wilson, A. (2002). The Mid-Term Review of the National HIV and Hepatitis C Strategies: Report of the Lead Review Team. Canberra: Commonwealth Department of Health and Aging.
5. Commonwealth Department of Health and Aging. (2000). National Hepatitis C Strategy 1999-2000 to 2003-2004. Canberra: Commonwealth Department of Health and Aging.
6. Cregan, J. (1998). Hepatitis C, prisons, and public health. Australian and New Zealand Journal of Public Health, 22(1): p. 5-7.
7. Cregan, J., De Marchi, S., Bond, L., Selvanera, G. (1997). Prisons and Blood Borne Communicable Diseases: The Community View. The Community Working Group on Prisons and Blood Borne Communicable Diseases.
8. Crofts, N. (1997). Evidence to the Standing Committee on Social Issues, NSW Legislative Council inquiry into Hepatitis C in NSW.
9. Crofts, N., Dore, G., Locarnini, S., (Eds.). (2001). *Hepatitis C: An Australian Perspective*. Melbourne: IP Communications Pty Ltd.
10. Doctors' Reform Society of Australia. Policy Statements, Prisons.
<http://www.drs.org.au/policies/policy10.htm>.
11. Drug Lore, Australian Drug Law Reform Foundation, Schaffer Library of Drug Policy.
<http://www.druglibrary.org>. October 2002.
12. Farrell, G. (2002). Hepatitis C, other liver disorders, and liver health. MacLennan and Petty Pty Limited.
13. Fortuin, J., (Eds.). (1992). *Issues in HIV/AIDS in the Australian Prison System*. Canberra: Australian Institute of Criminology.
14. Gray, Saggars, Atkinson, Carter, Loxley, Hayward. (2001). The harm reduction needs of Aboriginal people who inject drugs. National Drug Research Institute, Curtin University of Technology.

-
15. Hamilton, M., Kellehear, A., Rumbold, G., (Eds.). (1998). Drug use in Australia: A harm minimisation approach. Melbourne: Turning Point Alcohol and Drug Centre.
 16. Harding, R. (1998). Private prisons in Australia: The second phase. Trends and Issues in crime and criminal justice series. Canberra: Australian Institute of Criminology.
 17. Holly, C. (2001). Review of literature on injecting drug use within urban Aboriginal and Torres Strait Islander communities. Adelaide: Aboriginal Drug and Alcohol Council (SA).
 18. Homel, P., Flaherty, B. *Drug Crime Diversion: Reconciling Criminal Justice and Health/Welfare Goals*. Paper presented at the *Paper presented to the 19th Biennial Australian Crime Prevention Council Conference*. 1999. Melbourne, 18 October 1999.
 19. Hepatitis C Council of NSW. (2002). Hepatitis Factsheets. Surry Hills: Hepatitis C Council of NSW.
 20. Hepatitis C Council of NSW. (2001). Hepatitis C: What you need to know, 4th edition. Surry Hills: Hepatitis C Council of NSW.
 21. Joint United Nations Programme on HIV/AIDS. (1993). World Health Organization guidelines on HIV Infection and AIDS in prisons. World Health Organization.
 22. Larson, A. (1996). What Injectors Say About Drug Use: Preliminary Findings from a Survey of Aboriginal and Torres Strait Islander Injecting Drug Users. Brisbane: Australian Centre for International and Tropical Health and Nutrition, The University of Queensland.
 23. Levy, M., Baum, F., Thomas, H. (2002). Review of National Hepatitis C Strategy 1999-2000 to 2003-2004: The Road Not Taken. Canberra: Commonwealth Department of Health and Aging.
 24. McLeod, J., Stewart, G. (1999). Evaluation of the drug diversion pilot program. Drugs and Health Protection Services Branch, Public Health Division, Department of Human Services, Victoria.
 25. Ministerial Council on Drug Strategy. (2004) National Drug Strategy: Australia's Integrated Framework 2004 – 2009. Canberra: Commonwealth
 26. Nelles, J., Fuhrer, A., Hirsbrunner, H. P., Harding, T. W. (1998). Provision of syringes: The cutting edge of harm reduction in prison? Education and debate. British Medical Journal, 317: p. 270-273.
 27. Royal Commission into Aboriginal Deaths in Custody (1991) National Report Canberra, Australian Government Public Service
 28. Shewan, D., Davies, B., (Eds.). (2000). Drug Use and Prisons: An International Perspective. Overseas Publishers Association under Harwood Academic Publishers imprint.
 29. Sievert, W. (2000). Issues related to the treatment of chronic hepatitis C infection, in Hepatitis C: Informing Australia's National Response. Canberra: Department of Health and Aged Care.
 30. Smith, Perry, Cutmore, Cumbo. (1999). Aboriginal and Torres Strait Islander sexual health promotion initiatives in New South Wales. Sydney: National Centre in HIV Social Research.
 31. Sykes, G., (Eds.). (1996). Hepatitis C and Injecting Drug Use: Review of Social Research. Canberra: Commonwealth Department of Health and Family Services.

-
32. Tomaševski, K. (1992). Prison Health: International standards and national practices in Europe. Publication Series 21. Helsinki, Finland: Helsinki Institute for Crime Prevention and Control (HEUNI), affiliated with the United Nations.
 33. Washer, P. (2001). Hepatitis C: Transmission, treatment and occupational risk. Nursing Standard, 15 (40): p. 43-46.
 34. Watson, J. (2002). Hepatitis C: A study of prevalence in Western Australian prisons. Perth: Western Australian Hepatitis Council.