Hepatitis C
Strategy
2005 – 2008
Sydney South West Area Health Service
(Eastern Zone)
This Hepatitis C Strategy was prepared by the Area Hepatitis Coordinator, SSWAHS (Eastern Zone) and the members of the Area Hepatitis Committee and various sub-committees.

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Executive Summary

Hepatitis C is a major population health challenge in Australia. Hepatitis C is a blood-borne virus which causes liver disease. It is one the most commonly reported notifiable infections. In 2002, an estimated 210,000 people were living with hepatitis C infection in Australia. The rate of transmission is high, in 2004 it was estimated 10,000 new infections were occurring every year. NSW accounts for 40% of all hepatitis C cases in Australia both in terms of prevalence and incidence. The Sydney South West (Eastern Zone) (previously Central Sydney Area Health Service (CSAHS)) has one of the highest prevalence and incidence rates of hepatitis C in NSW.

Hepatitis C is transmitted through blood to blood contact. Studies of hepatitis C risk factors in Australia indicate that the vast majority, around 80%, of prevalent hepatitis C infections were contracted through sharing injecting drug use equipment. Over 90% of incident cases are related to sharing injecting drug use equipment. The majority of people with hepatitis C have had the infection for an unknown duration. People with chronic hepatitis C are at risk of progressive liver disease, about 10% of people will develop liver cirrhosis after 20 years of infection.

The prevention and treatment and care management of hepatitis C presents many challenges. The health settings in which strategies are needed to meet the challenges of hepatitis C are diverse from needle and syringe programs to the liver transplant unit.

Hepatitis C affects more than a person’s health. It can effect employment prospects and relationships with families and friends. It is widely acknowledged hepatitis C is associated with a high level of stigma and discrimination. This can be very debilitating. A section of this Strategy is dedicated to this important issue.

In February 1999, the CSAHS (now SSWAHS (Eastern Zone)) became a leader through launching the CSAHS Hepatitis C Business Plan 1999. It was one of the first strategic documents to pull together a multidisciplinary approach to address the many significant challenges caused by hepatitis C.

The SSWAHS (Eastern Zone) Hepatitis C Strategy 2005-2008 presents strategies to meet the emerging and ongoing challenges of the hepatitis C epidemic. Significant developments in the response to hepatitis C have occurred during the implementation of the CSAHS Business Hepatitis Plan 1999. The developments include the release of National and State Hepatitis C Strategies and a significant improvement in anti-viral therapy treatment outcomes.

The SSWAHS (Eastern Zone) Hepatitis C Strategy 2005-2008 builds on the areas for action developed in National and State Plans and brings them to the local level. It also carries on with the successful partnerships and experiences of the CSAHS Hepatitis C Business Plan 1999.

The main objectives of the SSWAHS (Eastern Zone) Hepatitis C Strategy 2005-2008 are:

• To minimise the transmission of hepatitis C
• To maximise the health status of people with hepatitis C
• To reduce the incidence of hepatitis C related stigma and discrimination in health care settings
• Improve monitoring and surveillance of hepatitis C and support multidisciplinary research capacity that incorporates basic virology, clinical research, epidemiology and social research.

During the development of the SSWAHS (Eastern Zone) Hepatitis C Strategy 2005-2008 the issues related to hepatitis B were raised. The Area Hepatitis Advisory Committee had previously agreed to the incorporation of hepatitis B into the Committee’s brief. However it was decided hepatitis B should not be incorporated into the SSWAHS (Eastern Zone) Hepatitis C Strategy 2005-2008. The Committee agreed it was more appropriate to develop a separate Hepatitis B public health response with education focused on vaccination (and other prevention strategies), health maintenance (inc treatment) and case finding. It is hoped this response will be developed in 2005-2006.

Dr Dianna Horvath AO
Chief Executive Officer
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Hepatitis C Council of NSW
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Introduction

The Plan is divided into four sections:

Section 1: **Background.** This section describes how the Strategy was developed, identification of priority groups and an overview of hepatitis C.

Section 2: **Hepatitis C related services in SSWAHS (Eastern Zone).** This section describes services who are major service providers to people living with and at risk of hepatitis C.

Section 3: **Strategic Directions: Areas for Action.** This section describes the framework and direction of the Strategy, implementation, performance indicators and evaluation. It is further divided into four sections related to the four objectives of the Strategy.

Section 4: **Appendix**
Section 1: Background

The Planning Process of the SSWAHS (Eastern Zone) Hepatitis C Strategy 2005-2008

Hepatitis C presents many challenges. The development of this Strategy took over 2 years. The process involved:

- A review of the implementation of CSAHS Hepatitis C Business Plan 1999 since its launch in 1999 (see appendix A).

- Review of National, State and other AHS Plans, Public Enquiries and Reports (see Appendix B):
  - Draft National Hepatitis C Strategy 2005-2008
  - Draft NSW Hepatitis C Strategy 2005-
  - NSW Treatment and Care Plan
  - Other AHS Plans
    - South East Health 2000-2003
    - Hunter AHS
  - Policies
    - National Hepatitis C Testing Policy

- Reports
  - C Change Report
  - Return On Investment In Needle And Syringe Programs In Australia
  - Senate Inquiry Into Blood Supply

- Review of NSW Health Projects
  - Projects aimed at CALD and Aboriginal people
  - Public Awareness Campaign
  - EPC Project
  - ASHM pilot community prescribing project

- Formation of multidisciplinary planning sub-committees (Health Promotion and Prevention; Treatment and Care). The committees were overseen by Area Hepatitis Advisory Committee.

- Consultations with NGOs:
  - WHO’S - We Help Ourselves – (Non government drug and alcohol rehabilitation service)
  - Haemophilia Association
  - Hepatitis C Council

- A literature review of health promotion and treatment strategies

- A review of relevant services and their hepatitis C related issues

- Development of Areas for Action to identify key strategic directions

- Approval of Strategy by the Area Hepatitis Advisory Committee

- Approval by the SSWAHS (Eastern Zone) Clinical Council (formerly CSAHS)
The essential components of the SSWAHS (Eastern Zone) response

Since the launch of the previous CSAHS Hepatitis C Business Plan 1999, the National Hepatitis C Strategy 1999-2000 to 2003-2004 and the NSW Hepatitis C Strategy 2000 – 2003 were released.

The components that underpinned the development of the SSWAHS (Eastern Zone) Hepatitis C Strategy 2005-2008 are a combination of what has been identified in the National Hepatitis Strategy 1999-2000 to 2003-2004 and the NSW Hepatitis C Strategy 2000 – 2003. They are:

• Access and Equity
• Harm reduction
• Health Promotion
• Research and Surveillance
• Linked strategies and infrastructures
• Developing partnerships
• Involving affected communities
• Transparency and accountability
• An enabling environment
• Evidence based approach
• Effectiveness, safety and cost effectiveness
• Health service planning principles

A summary of the essential components is provided in Appendix B.

The National Hepatitis C Strategy, NSW Hepatitis C Strategy, and Care and Treatment Services Plan are currently being renewed. They are expected to be finalised by early 2005.

Objectives of the SSWAHS (Eastern Zone) Hepatitis C Strategy

The main objectives of the SSWAHS (Eastern Zone) Hepatitis C Strategy 2005-2008 come from the strategic intent of the National and NSW Plans. The objectives are:

• To minimise the transmission of hepatitis C
• To maximise the health status of people with hepatitis C
• To reduce the incidence of hepatitis C related stigma and discrimination in health care settings
• Improve monitoring and surveillance of hepatitis C and support multidisciplinary research capacity that incorporates basic virology, clinical research, epidemiology and social research.

Priority Groups in SSWAHS (Eastern Zone)

The priority groups are based on risk factors for transmission; education, care and treatment needs. The following groups have been given high priority for strategic response in SSWAHS (Eastern Zone):

• People who inject drugs
• Young people
• Prisoners and young offenders
• People from Culturally and Linguistically Diverse (CALD) backgrounds
• Aboriginal People
• Health care workers
• People with mental health issues
• People living with hepatitis C
• People co-infected with HIV or HBV

People who inject drugs
• Injecting drug use continues to be the greatest risk factor for transmission. In 2001 the estimated number of new infections of hepatitis C was 16,000. Approximately 90% of these new infections are estimated to have occurred through the sharing of injecting equipment. Not all drugs that are injected are illicit.
• A relatively high pool of hepatitis C infection (50-60%) exists within the injecting community. This contributes to the high level of risk.
• Due to the often illicit nature of injecting drug use access to both past and current injecting drug users is difficult. Injecting drug users are a marginalised group in society.
• There is a need to be able to respond to changes in drug use. In recent years changes have occurred in
Australia. A number of studies have consistently suggested that between 2000 and 2003, there was a sizeable decrease in both prevalence and frequency of heroin injection. This information is collected through several sources by the Illicit Drug Reporting System (IDRS). It is Australia’s national illicit drug monitoring system, which is funded by the Australian Government Department of Health and Ageing and the National Drug Law Enforcement Research Fund. The IDRS is conducted each year in every state and territory by participating research institutions throughout the country, and is coordinated by the National Drug and Alcohol Research Centre. This information needs to be regularly reviewed.

• There is only a modest level of community support for NSPs and drug treatment services such as methadone clinics.

• Hepatitis C management is often not a priority of drug treatment and drug education services such as detoxification treatment, pharmacotherapy services, ambulatory care/community based services and residential rehabilitation. Few current injectors access hepatitis C treatment services in SSWAHS (Eastern Zone). There is increasing evidence that people who are actively injecting can be successfully treated for drug dependence and hepatitis C with anti-viral therapy concurrently.

Young People
• There are approximately 100,000 people aged 10-24 years in SSWAHS (Eastern Zone). There is also a high transient youth population.

• A high level of drug use among young people is often experimental, social and influenced by peers. Injecting drug use often occurs in a sharing situation. The first injecting experience often then becomes the first experience of sharing injecting equipment and of potential contact with blood borne viruses. A body of research is emerging to suggest that injecting behaviour is greatly influenced by the information and lessons learnt at the initiating stage and that patterns, rituals and processes adopted at the start of injecting continue to influence behaviour.

• A national survey of Australian secondary school students clearly demonstrated that knowledge relating to hepatitis C was extremely poor, with barely half the students in Years 10 and 12 knowing the disease could be spread by injecting.

• A recent survey of school teachers reported that there was little being taught about hepatitis C in their schools and few of the teachers surveyed taught about this topic. Teachers were reasonably well informed, although there was evidence of conflating HIV and hepatitis C issues. They believed that it was important for schools to include hepatitis C in the curriculum. Teachers reported there were few opportunities for professional development and few appropriate curriculum resources to assist in teaching about hepatitis C. Barriers to including this issue in the curriculum were perceived to be structural.

• Recent research has also shown for some young people injecting is a familial pattern. In a study in Wentworth Area, 76 (53.3%) of the participants reported that other family members injected drugs. Of the 76, 21 (27.6%) reported that the family members were parents.

• There is also evidence of high levels of other practices (tattooing, body piercing) among young people, which may carry the risk of hepatitis C infection if not carried out safely.

• Injecting appears to be becoming a more favoured route of administration for non-prescribed and illicit drugs and could be increasing among younger people.

Prisoners and Young Offenders
• Exposure to custodial settings is an independent risk factor for hepatitis C. This fact acknowledges the level of injecting and other risk activities that occur within prisons and the lack of harm reduction measures available (e.g. access to new injecting equipment or safe tattooing means). Although no national assessments of hepatitis C infection in prisons have been undertaken it is estimated that in 2001, 30-40% of all prisoners were infected with hepatitis C. However, rates of hepatitis C infection in female prisoners are thought to be much higher, between 50-70%. This probably reflects a greater proportion of women than men imprisoned for drug related offences. Hepatitis C incidence amongst prison inmates is age dependent, with much higher rates in young prisoners compared to those aged above 40.

• While SSWAHS (Eastern Zone) contains no adult prisons within its boundaries it is responsible for the provision of health care and prevention services post release from prison. SSWAHS (Eastern Zone) houses a number of organizations that offers accommodation, rehabilitation and services to ex offenders or newly released prisoners. Ensuring adequate referral, medical follow-up and support requires further development.

• The Area Health Service contains a juvenile justice centre and has a collaborative role in the provision of services. Young people exposed to the juvenile justice system will have or be at risk of injecting drugs thus placing them at transmission risk.

People from Culturally and Linguistically Diverse (CALD) backgrounds
• SSWAHS (Eastern Zone) is culturally diverse, with 39.6 per cent of residents born overseas, compared with 23.1 per cent of the population of NSW. A large proportion of residents born overseas were born in non-English speaking countries (81.9%), and 41.3% of the SSWAHS (Eastern Zone) population, speak a language
other than English at home. SSWAHS (Eastern Zone) is committed to providing a range of services that reflect and respect the diversity within the Central Sydney population.

- A number of CALD populations are assumed to have high prevalence rates associated with country of birth having high prevalence rates of hepatitis C. Medically acquired hepatitis C is a significant element within these populations. Many have been infected for 20 years or more placing them at greater risk of cirrhosis or other complications.

- Language and culture are two of the significant social determinants of health which can impact on issues including understanding of health promotion messages around hepatitis C transmission risks; access to hepatitis C testing and specialist hepatitis C treatment services; choice of general practitioner; and the potential to experience discrimination on the basis of race or ethnicity in addition to hepatitis C-related discrimination. Culturally sensitive and appropriate hepatitis C health promotion and prevention work needs to acknowledge the extra barriers that people from CALD backgrounds face in terms of access to health services and the added stigma and apprehension around the connections between hepatitis C and injecting drugs.

- A large percentage of the patients attending the hepatitis C treatment services at RPAH and Concord Hospital come from a CALD background. A difficulty in accessing interpreters is an ongoing issue especially at Concord.

- For those from CALD populations who also inject drugs, access to services is problematic either in terms of accessing mainstream services or from fear of disclosure within specific communities. Collaboration, consultation and work that involve affected communities are essential within these contexts. To date information resources targeted at this population are limited. The first bi-lingual resource has only recently been developed by MHAHS.

- A study published in 2001 by the Multicultural HIV/AIDS and Hepatitis C Service (based in SSWAHS (Eastern Zone)) has made numerous recommendations on how to improve prevention and education strategies aimed at people from CALD background.

Aboriginal People

- At 2001 census, of SSWAHS (Eastern Zone) residents, 4,112 persons identified themselves as Aboriginal. The Redfern and Waterloo areas of SSWAHS (Eastern Zone) are characterised by high mobility of Aboriginal people, particularly around “the Block”, Redfern.

- In 2001, Aboriginal people were twice as likely to smoke, drink alcohol at harmful levels and use illicit drugs as non-indigenous Australians. Aboriginal people have experienced and experience systemic and continual marginalization and discrimination in almost all levels of Australian society. Priority group status within the hepatitis C plan attempts to recognize the social, economic and structural disadvantage that Aboriginal populations face as well creates an environment that acknowledges the importance of self determination.

- In 2003, a comprehensive state wide consultancy into blood borne viruses amongst Aboriginal people was conducted. The recommendations of this consultancy will be reviewed in SSWAHS (Eastern Zone).

- At the Block, (in Redfern) in particular, injecting drug use has become a serious concern and health threat to the Aboriginal people living in this area and to visiting Aboriginal persons or temporary residents.

- The potential for interactions between different risk factors in Aboriginal individuals is large. Alcohol, obesity and hepatitis C are independent contributors to liver disease and two or more of these risk factors often coincide.

- Aboriginal persons were 16 times more likely than non-Aboriginal persons to be in prison in 2003. Alcohol has been reported to be third among six major factors underlying the high rates of arrest amongst Aboriginal people. Imprisonment may in turn result in introduction to illicit drug use and infection with hepatitis C.

- There is no data on the number of Aboriginal people who access hepatitis C treatment services. The number is thought to be very low.

- Aboriginal people in SSWAHS (Eastern Zone) have expressed a strong concern about alcohol and other drug related harm. This is addressed within the Drug Health Plan.

Health Care Workers

- Healthcare workers have a significant role in the delivery of non-discriminatory and accessible health services; and prevention. Adequate levels of training, education and system support is necessary to reduce levels of discrimination experienced by people with hepatitis C and to improve access and service to people affected by hepatitis C.

- Healthcare workers have the significant role in identifying people with hepatitis C and offering appropriate care and support.

- Health care workers are also at some risk of needle stick or blood splash exposure to hepatitis C and spreading of hepatitis C through unsafe practices making knowledge and practice of standard and universal precautions essential in the both the training and ongoing professional practice of healthcare workers.

- Policies and practices for managing health care workers with blood borne viruses have been established by NSW Health. An understanding of these policies needs to be disseminated.

People living with hepatitis C

- Around 75% of people who get exposed to hepatitis C will develop chronic (long term) infection.

- People affected by hepatitis C are often faced with confusion and ignorance about their condition.
• Many people do not know they have hepatitis C infection despite having the infection for many years, possibly since the 1960s. The number of people with hepatitis C in SSWAHS (Eastern Zone) is unknown however it is thought to have one highest prevalence rates in Australia.
• The number of new infections especially amongst young people is increasing.
• The number of people presenting with significant symptomatic illness is increasing. These people are often unable to carry out ordinary, everyday functions, including employment and home duties. Most will require access to a multitude of health services.
• People with hepatitis C come from diverse backgrounds and factors such as age, disability, socio-economic status, education, literacy, culture and language. Their knowledge and need and ability to access services is very variable.
• Hepatitis C affects different people in different ways and impacts both on social, mental and physical health and the health services they require.
• It is important that people with hepatitis C are linked with a health service, preferably a well informed GP who can support all their health care needs.
• People with hepatitis C need to be informed and assisted to adopt healthier behaviour to reduce risks for progressive disease.
• People with hepatitis C need to be well informed about treatment and the recent improvements in efficacy. Over the last five years anti-viral treatment of hepatitis C has substantially improved. However the number of people seeking treatment has not substantially increased. Access and side effects of treatment remain a problem.
• The level of discrimination and stigmatisation, from health care workers towards people with hepatitis C is high. Ignorance, and misplaced fear of infection, are two of the reasons for this discrimination. Injecting drug use - an illegal behaviour - is the most common cause of hepatitis C infection this adds another level of stigmatisation for all those affected.
• For people post transplant with previous or ongoing drug/alcohol dependency problems and hepatitis C it is evident that there is a need for some ongoing social support structures. Many of these people need assistance to regain social skills to help them to form links and friendships in the community (these have often been lost through long periods of illness and unemployment). Quite a few of this group are often single men with few social supports. It appears because of these ongoing difficulties in re-establishing a "life" for themselves post transplant and the social isolation they encounter, this group of people may be prone to recidivism of alcohol/drugs, depression and in extreme cases suicide. Those without particular work skills find it extremely difficult to regain employment and are disheartened at their inability to gain employment. The problems are exacerbated in rural areas where disclosure, confidentiality and discrimination issues are more profound. At RPAH the number of people with these issues is likely to increase.

People with mental health issues
• The link between mental health problems and problematic substance use has been identified in a number of studies. People with a psychiatric illness are more likely to have a substance abuse disorder than people without a psychiatric illness (therefore more hepatitis C risk). It is therefore likely that a proportion of people with hepatitis C will also have mental health concerns or dual disorders. They may also face particular barriers to treatment and care17.
• Hepatitis C infection itself can have a negative impact on mental health.
• An increasing number of patients referred for anti-viral therapy or transplant assessment have mental health issues. There is no standardised mental health assessment.
• Anti-viral therapy is strongly associated with a having a detrimental effect on mental health causing depression and/or behavioural changes. People with a history of depression may be denied access to anti-viral because of this relationship. Evidence based strategies need to be developed to guide management of this group.
• Mental health services are a vital component in provision of care treatment and support needs of people with hepatitis C.

People co-infected with HIV or HBV
• Both hepatitis B virus (HBV) and hepatitis C virus are more common in people with HIV infection than in the general population because of shared risk factors for viral acquisition. In Australia there are almost 13,000 people living with HIV. Differing rates of hepatitis C and HIV co-infection are in different population groups. There is a higher probability of co-infection if a person who injects drugs is also at high risk of HIV infection. In Australia up to 2000 approximately 0.8% of people with hepatitis C were co-infected with human immunodeficiency virus (HIV) and about 14% of people with HIV were co-infected with hepatitis C.
• In the setting of hepatitis C coinfection with HIV the results are a greater likelihood of chronicity and enhanced viral replication. HIV infection hastens hepatitis C-related liver disease with faster progression to cirrhosis, decompensated liver disease and earlier occurrence of hepatocellular carcinoma. Morbidity and mortality from end-stage liver disease in people with HIV infection are increasing therefore it is recommended every effort should be made to identify, educate and treat appropriately those people with coinfection4.
• An estimated 90,000 Australians have hepatitis B. The role of hepatitis B virus as a cofactor in the development of hepatitis C related cirrhosis and hepatocellular carcinoma (HCC) has been well documented and the use of hepatitis B vaccine, risk assessment and treatment in all hepatitis C-infected patients is advocated.
**Hepatitis C Overview**

Hepatitis is a term that means inflammation of the liver. The hepatitis C virus was discovered in 1989 although a separate virus distinct from hepatitis A and B had been suspected for years.

Alcohol, chemicals, drugs and viruses can all cause hepatitis. Hepatitis is described as either an acute or chronic illness. Each of the hepatitis viruses may produce similar symptoms and they can all infect and inflame the liver. The main difference between the viruses is how they are transmitted, the way they cause liver damage and the length of time they cause damage to the liver. At least 75% of patients infected with hepatitis C will develop chronic infection.

Because the hepatitis C virus mutates rapidly, this helps it evade the immune system. This also makes vaccine development difficult. At least 6 genotypes of hepatitis C and more than 50 subtypes have been described. There is little difference in the severity of disease or outcome of patients infected with different genotypes. However, patients with genotypes 2 and 3 are more likely to respond to anti-viral treatment than those with genotypes 1. The different genotypes have different geographic distributions. Genotype 1b is the most common in Australia and is followed in frequency by type 3a.

**Prevalence and Incidence**

*Estimates and Projections*

Measuring prevalence and incidence is difficult. Due to lack of symptomatology many people do not know they infected. Antibody testing does not differentiate between new or existing infections.

A working group consisting of representatives of the Australian National Council on AIDS, Hepatitis C and Related Diseases (ANCAHRD), the Australia Hepatitis Council, the Australian Injecting and Illicit Drug Users League, Commonwealth, State and Territory Health departments, clinicians, epidemiologists, drug researchers and statisticians was established to develop reliable estimates and projections of the rates of hepatitis C infection in Australia. In 1998 and again in 2002 the working group released a report investigating and discussing estimates and projections of the hepatitis C virus in Australia. These estimates and projections were based on available research data and knowledge of the progress of the virus and current trends in injecting drug use.

The following estimations were made:

- **Total Number of People Living With Hepatitis C**
  - In 2001 there were an estimated 210,000 people living with hepatitis C in Australia.
  - Of those affected 65% were aged 20-39 years and 35% were women including 133,000 with chronic hepatitis C infection and stage 0/1 liver disease.
  - 129,000 with stage 2/3 liver disease and 6,900 living with hepatitis C related cirrhosis.
  - A further 57,000 had hepatitis C antibodies without chronic infection.

- **New Infections**
  - During 2001 it was estimated that 16,000 new infections of hepatitis C occurred in Australia. It was estimated that during 1997 there were 11,000 new infections of hepatitis C. This is an increase of 45% over 4 years. These estimations are currently under review and in late 2004 it is believed this is an overestimate for the current year. It is believed injecting drug use is decreasing and subsequently hepatitis C transmission is also decreasing to around new 10,000 infections.

- **Notifications**

  - Hepatitis C has been a notifiable disease in all states and territories of Australia since 1995. The majority of notifications are pre-existing infections.
  - During 2001 there were approximately 20,000 notifications of hepatitis C in Australia. In 2003 the reported number of diagnoses of hepatitis C infection declined from a peak of 20,465 in 2000 to 15,953 cases in 2002. This is the lowest annual number of hepatitis C diagnoses notified in the past five years.
  - In 1998 – 2002, the male to female ratio of hepatitis C notifications remained stable at 1.7:1. However, in the 15 – 19 year age group, a higher number of cases was reported among females than among males.
  - In 2003 the reported number of diagnoses of newly acquired hepatitis C infection has declined from 672 cases in 2001 to 434 cases in 2002.
  - In 2003 the population rate of diagnosis of newly acquired hepatitis C infection is highest among people aged 20 – 29 years and 15 – 19 years. The per capita rate of diagnosis of hepatitis C infection was highest in the 20 – 29 and 30 – 39 year age groups.
  - In 2003 hepatitis C, 5,277 cases [79.5/100,000 population], were reported in NSW with the highest rates in Central Sydney, Far West, and Northern Rivers Area Health Services.
  - A recent history of injecting drug use is the predominant hepatitis C transmission risk factor.
Table 1: Hepatitis C Notifications in SSWAHS (EASTERN ZONE)20

<table>
<thead>
<tr>
<th>Year</th>
<th>Cases</th>
</tr>
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<tr>
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<td>2003</td>
<td>754</td>
</tr>
<tr>
<td>2004</td>
<td>659*</td>
</tr>
</tbody>
</table>

*Dec 14 incomplete ytd

The SSWAHS (Eastern Zone) Public Health Unit conducts enhanced surveillance of hepatitis C. In 2004 34 cases were reported as acute.

Currently there is no surveillance of the number of people developing advanced liver disease, number with cirrhosis, number with symptoms or extra hepatitis manifestations. This is a difficult area to address. NSW Health is attempting to establish a minimum data set database.

Australian NSP Survey National Data Report 1995 - 200321

The purpose of this cross sectional survey of clients at selected Needle and Syringe Programs (NSPs) is to monitor HIV and hepatitis C infection and related risk behaviours among injecting drug users (IDU) attending NSP services (see Appendix C for SSWAHS (Eastern Zone) data). The 2003 report found:

- HCV antibody prevalence remained stable at 58% with the proportion of young (44% to 39%) and new (38% to 21%) injectors testing hepatitis C antibody positive decreasing from 2002 to 2003.
- The proportion of participants reporting daily or more injection in the month prior to the survey decreased from 2002 (50%) to 2003 (46%).
- The proportion of participants reporting use of new or sterile needles and syringes for all injections in the month preceding the survey increased from 66% in 1999 to 75% in 2003.
- Reuse of someone else’s used needle and syringe in the month prior to the survey decreased from 19% in 1999 to 13% in 2003.
- Re-use of someone else’s used equipment other than needle and syringe in the month preceding the survey decreased from 1999 to 2003 (spoon: 40% to 28%; water: 28% to 21%; filter: 23% to 17%; drug mix: 18% to 13%; tourniquet: 17% to 11%).

Liver Cancer Notifications

NSW Cancer Council Report reports in the ten years from 1991 to 2001 the age-standardised incidence rates of primary liver cancer rose by 36% in males and 93% in females. The age-standardised mortality rates rose by 32% in males and 62% in females. The majority of these liver cancers are due to viral hepatitis.

Prevention

The continuing high incidence rates of hepatitis C is a major concern and a major challenge.

As there is no vaccine to prevent hepatitis C other prevention strategies such as harm reduction are vital.

Prevention strategies primarily need to focus on injecting drug users and those at risk of injecting. The strategies need to be multi-faceted and acknowledge the social, legal and cultural complexities as well as the stigma and discrimination associated with injecting drug use. Strategies need to encourage safe injecting, reduce the incidence and prevalence of injecting, improve access to sterile injecting equipment and enhance targeted education activities. NSPs are seen as a key component to minimise hepatitis C transmission. In 2000 the Commonwealth Department of Health and Ageing commissioned a report to assess the effectiveness of needle and syringe programs in preventing the transmission of hepatitis C and HIV in Australia from 1991 to 2000. It estimated NSPs prevented 21,000 hepatitis C infections and saved $783 million in treatment costs (see Appendix B for details). In the SSWAHS (Eastern Zone) Hepatitis C Strategy 2005-2008 there is strong support for harm reduction measures such as NSPs to be available and accessible to groups or communities at risk of exposure to infection.

Focus also needs to be given to the skin penetration industry, health care settings and correctional settings.

Transmission

Hepatitis C is transmitted by blood to blood contact only (see Appendix D). This means that blood infected with hepatitis C must enter the bloodstream of another person. Even the smallest amounts of blood can transmit hepatitis C.

Transmission can occur through:

- sharing contaminated injecting drug equipment
- unsterile tattooing, body piercing, medical procedures and skin penetration procedures
- household practices (such as sharing razor blades and toothbrushes)
• occupational procedures (e.g., needlestick and sharps injuries)
• certain sexual activities
• transfusion of contaminated blood/blood products
• mother to baby.

In Australia of the 210,000 people living with hepatitis C in 2001 it is estimated that:
• 83% were infected due to unsafe injecting,
• 5% due to receipt of blood or blood products, and
• 12% due to other transmission routes (including transmission from mother to child during birth, unsterile tattooing and body piercing, unsterile medical procedures performed in countries with high rates of hepatitis C and needle stick injuries).

Of the estimated 16,000 new incidents of hepatitis C that occurred during 2001:
• 91% were estimated to be a result of unsterile injecting drug use.
• Approximately 50% of regular injecting drug users, (people who have injected for at least 12 months, on an average of 10 times a month), were thought to be infected with hepatitis C over the period 1996 to 2000.

Natural History

The vast majority of reported hepatitis cases have been of unknown duration. Chronic infection with this virus is one of the most important causes of chronic liver disease and the most common indication for orthotopic liver transplantation in Australia.

The average incubation period for hepatitis C infection is 6-7 weeks, with a range of 2-26 weeks. Only a small proportion will develop symptomatic acute infection. Chronic hepatitis C infection develops in 75% of those infected. The course of chronic hepatitis C infection is prolonged and usually insidious, with few symptoms or signs, if any, for the first 20 years. Inflammation and hepatic cell necrosis may lead to bridging fibrosis, and cirrhosis develops eventually in 10% of infected people with chronic hepatitis C infection after 20 years.

There is little evidence that virologic factors, including viral load or viral genotype significantly affect the risk of progression of liver disease. However, many host factors increase this risk. Risk factors for that increase the likelihood of cirrhosis include:
• male gender
• age >40 years at time of infection
• daily alcohol consumption of >50 g/day
• other liver disease
• obesity
• associated medical conditions such as diabetes

Patients who develop cirrhosis may continue in a compensated state or decompensate over time with ascites, jaundice, hepatic encephalopathy, or variceal bleeding. Hepatocellular carcinoma may also occur. Hepatocellular carcinoma (HCC) occurs in 1% to 4% of patients per year during the first 5 years after cirrhosis has been established. The risk has been estimated to increase to 7% after 5 years of cirrhosis and 14% at 10 years; it is higher in men and in older patients. HCC is a highly malignant disease with a poor prognosis.

Diagnosis

The antibody test is the primary tool for detecting hepatitis C. However to diagnosis current infection status or prognosis further assessment and testing is required. Up to 30% of people with hepatitis C are thought to be undiagnosed. To improve this situation the National Hepatitis C Testing Policy was developed. It provides a comprehensive guide to testing and who should be tested. Strategies are needed to implement this policy and increase awareness in the community and amongst GPs.

Giving a person a hepatitis C diagnosis needs to be handled sensitively. Anyone who is tested should receive pre and post test counselling regardless of the result. Anyone who tests positive should receive information about hepatitis C and be given access to support services.

Care and support

The majority of people with hepatitis C require a range of clinical and social supports to maintain their health. The role of life-style modification in the improvement of hepatitis C prognosis is extremely important. Reduction in drinking, increased physical activity and weight loss are simple measures that significantly impact the natural history of hepatitis C.
People affected by hepatitis C can access support from a range of health care workers/services and organisations such as the hepatitis C councils, peer based drug user organizations (e.g. NUAA), GPs, liver clinics, drug health services, sexual health clinics, multicultural services and the Aboriginal Medical Services (AMSs). All health care workers/services providing support and care should provide appropriate evidence based information and have their resources, knowledge and skills regularly updated.

**Treatments**

**Pharmaceutical treatment - Anti-viral therapy**

Not all people with hepatitis C require anti-viral therapy and only a small minority a people with hepatitis C have received anti-viral therapy. It is only required when there is biopsy proven progressive liver disease, (or other evidence of liver disease) or significant extra hepatic manifestations of hepatitis C. Outcomes of hepatitis C anti-viral therapy has improved considerably over the past 4 years (see Appendix E). Pegylated interferon treatment in combination with ribavirin is now considered standard treatment. Cure rates are greater than 50%-80% depending on genotype (3a responds better 1b). To improve hepatitis C outcomes the number of people seeking anti-viral therapy needs to be increased. The information on improved cure rates needs to be more widely communicated to people affected by hepatitis C and health care workers. A National campaign to raise anti-viral therapy awareness is planned for May 2005.

Availability is constrained by PBS S100 criteria. The criteria changes every 12-18 months and it is now less restrictive than in previous years. This has opened up anti-viral to people with cirrhosis or HIV coinfection. Because of the improved cure rates the risk/benefit ratio has also improved and this has also opened up therapy to more people.

Because of the associated side-effects managing people on anti-viral therapy is resource intensive. Most people are managed within liver/gastroenterology/infectious disease services. Many of these services are at or near full capacity. Alternative strategies for managing people on anti-viral therapy are being developed eg. community based prescribing.

**Alternative Therapies**

Alternative therapies are a popular form of therapy for many people living with hepatitis C. The value of alternative therapies, such as Chinese herbs, vitamins is unknown and is currently being investigated in many clinical trials. RPAH is the site for the Hep573 study – a large multicentre herbal and vitamin study.

**Liver Transplant**

For patients with end stage liver disease, transplant remains the only treatment option. It carries a high rate of success. At the National Liver Transplant Unit, RPAH, the three-year survival is approximately 85%, which is equivalent to survival in patients transplanted with other forms of liver disease\(^2\). Care of the patients is resource intensive and life long. The waiting time for transplant is subject to donor availability and the wait can be lengthy.

**Liver Cancer (HCC) Treatment**

Hepatitis C related cirrhosis is considered a major risk factor for the development of HCC. Early diagnosis is an important factor in prognosis and treatment. Generally three to six monthly screening strategies are recommended. This includes a three monthly alpha-foetoprotein (AFP is a tumour marker) level and a six monthly ultrasound. A CT scan is recommended if either test is abnormal. Treatment outcomes have improved significantly over the last few years but are still not satisfactory. Only when there are small primary liver cancers can liver transplant or resection be viable. Liver transplantation or resection improves 5 year survival significantly. Some HCCs can also be treated with radio frequency ablation technique (RAF).

**Hepatitis C and Diet**

Diet plays an important role in the management of hepatitis C. The liver significantly influences nutritional status through its role in the intermediary metabolism of macronutrients, micronutrients and bile salts. Liver disease affects nutrient digestion and absorption, storage and metabolism, which can lead to vitamin and mineral deficiencies and protein energy malnutrition.

In people with advanced cirrhosis poor nutritional status has been associated with a higher risk of complications and mortality. People with advanced cirrhosis often have maldigestion and malabsorption, wasting of the muscle mass, bone disease and an emaciated appearance. Proper nutritional therapy can improve clinical outcomes and well-being. Nutritional therapy is becoming an increasingly important component of care for patients with cirrhosis. Optimal nutrition improves the ability to survive a liver transplant.

Obesity is another problem. Obesity can lead to steatosis (fatty liver). This accelerates fibrosis. Clinical studies suggest obesity could lead to a more rapid disease progression in people with hepatitis C. Additionally studies have
shown weight reduction can lead to normalization or improvement in liver enzymes. Weight reduction may provide an important adjunct treatment strategy for people with chronic hepatitis C.

**Hepatitis C and Alcohol**

Alcohol is the most widely used drug in Australia. Its misuse causes significant harm to people with hepatitis C. Clinical studies have identified heavy alcohol use as an independent risk factor for progression of fibrosis. Alcohol also contributes to steatosis (fatty liver), which is also an independent risk factor for fibrosis.

Alcohol may exacerbate side effects associated with current anti-viral treatment and interfere with the efficacy of anti-viral treatments. Significantly better treatment outcomes have been reported among abstainers than among drinkers.

Interventions to reduce alcohol consumption are an important treatment strategy.

**Discrimination**

The National Hepatitis C Strategy 2003-2004, the NSW Hepatitis C Strategy 2000-2003 and the NSW Hepatitis C Care and Treatment Services Plan 2001-2003 all recognise discrimination against people with hepatitis C as a significant issue. The NSW Hepatitis C Care and Treatment Services Plan states "all people with hepatitis C should have the same rights to comprehensive and appropriate health care as other members of the community, on a non-discriminatory basis". Coinciding with these Plans in 2001 the Anti-Discrimination Board of New South Wales conducted the C-Change Enquiry into Hepatitis C Related Discrimination. The Enquiry was followed by the release of the C-Change Report. It reported discrimination had a profound impact on the lives of many people with hepatitis C. It frequently had damaging health, financial, social and emotional consequences both for people with hepatitis C and for the community in which they live. It found that discrimination against people with hepatitis C was widespread and often motivated by fear and ignorance and was often based on the stigma associated with injecting drug use and associated stereotypes.

It also found health care settings were the most frequently reported context for hepatitis C related discrimination.

Partially in response to the relevant recommendations in C-Change, NSW Health funded the Hepatitis C Workforce Development Program to undertake the NSW Hepatitis C Anti-Discrimination Project in 2003. The Project aimed to reduce the incidence of hepatitis C related discrimination in health settings. In SSWAHS (Eastern Zone) a formal Advisory Committee was established to guide local initiatives to address hepatitis C related discrimination. With the support of Workforce Development Project staff and guidance from the Committee, a best practice forum was conducted. The main aim was to map strategies that work towards preventing discrimination. Some of the strategies identified inform the Areas of Action section of this Plan.

**Economic Costs**

The exact health costs associated with hepatitis C are unknown. No recent studies estimate both the direct and indirect costs of hepatitis C. Direct costs are those associated with direct action taken and include research, prevention, diagnosis, treatment and care. Indirect costs are related to loss of workplace production resulting from premature death and ill health. In the 1996/97 year, conservatively calculated direct costs were $75 million (this included costs of interferon monotherapy), and similarly understated indirect costs were $32.5 million, making a total of almost $110 million. The costs have risen significantly since this time. Combination therapy with pegylated therapy is much more expensive as is other costs such as admission for treatment related to advanced disease. Health costs per infection continually rise as treatments become more expensive and complex.

The personal costs, through inability to work and/or relationship breakdowns due to illness or discrimination, stigmatisation and vilification are great.

**Future Projection Of Disease Burden**

The ANCARD Virus Projection Working Group are currently re-estimating the disease burden.

Projections over the long-term of the disease outcomes associated with hepatitis C are difficult to determine and are sensitive to assumptions about ongoing patterns of behaviour of injecting drug users and advances in hepatitis C treatments.
Section 2: Overview of SSWAHS (Eastern Zone) Services related to Hepatitis C

Sydney South West Area Health Service (Eastern Zone) (formerly CSAHS) is dedicated to protecting, promoting and maintaining the health and independence of residents and the wider community. SSWAHS (Eastern Zone) includes local government areas of Ashfield, Burwood, Canada Bay, Canterbury, Leichhardt, Marrickville, Strathfield and parts of the City of Sydney.

At the 2001 Census there were 475,751 residents of the SSWAHS (Eastern Zone). These people represented 7.5% of the NSW population. Compared with NSW, SSWAHS (Eastern Zone) had a higher proportion of residents aged between 20 and 39 years, and fewer young people aged less than 20 years.

SSWAHS (Eastern Zone) is culturally diverse, with 39.6 per cent of residents born overseas, compared with 23.1 per cent of the population of NSW. Of the SSWAHS (Eastern Zone) population, 196,365 persons (41.3%) speak a language other than English at home, compared with 18.7 per cent in NSW as a whole (2001 data).

Key Hepatitis C Services
Successful partnerships between key services and the community are recognised as a key component in the success of the SSWAHS (Eastern Zone) Hepatitis C Strategy 2005-2008. The services listed below can have a significant impact on hepatitis C prevention, treatment and care.

- GPs
- Public Health Unit
- Health Promotion Unit
- HIV/AIDS Service
- Sexual Health Service
- Drug Health Services
- Gastroenterology and Liver Services
- National Liver Transplant Unit (based at RPAH)
- Mental Health Services
- Nutrition and Dietetics
- Social Work

For the purpose of the SSWAHS (Eastern Zone) Hepatitis C Strategy 2005-2008 all the services listed above provided a submission which described their service/s and how they relate to hepatitis C. They also identified issues/gaps and developed strategies. These strategies were built into the Area for Action section of the SSWAHS (Eastern Zone) Hepatitis C Strategy 2005-2008.

Other services

- Dental Services
- Radiology Services
- Cancer Services
- Palliative Care
- Endocrinology Services
- Staff Health

Other partners

- Advocacy and support groups eg. the Hepatitis C Council and NUAA.
- Local government
- Community groups
- Multicultural HIV/AIDS and Hepatitis C Service

General Practitioners
People with hepatitis C should seek a well informed GP for assessment and ongoing management. General practitioners (GPs) have the skills and experience to provide whole person, comprehensive, coordinated and continuing medical care; and maintain professional competence. A GP can work as the coordinator of an individual’s overall health care and attempt to provide the patient with appropriate, timely and cost-efficient management, involving other health professionals as appropriate. RACGP defines the roles for GPs in management of hepatitis C as detection, investigation, referral, counselling, education and shared care of people with hepatitis C.

Access to General Practitioners is an important social determinant of health. Economic access to GPs is becoming
an increasing problem for poorer people with the decline in bulk billing rates especially in rural areas where it can be very difficult to find a bulk billing GP practice. This has implications for many people with hepatitis C.

RPAH has been involved in GP shared care of people on anti-viral therapy or with advanced disease/post liver transplant for sometime. It is anticipated this will increase. In 2004 RPAH will take part in the hepatitis C prescribing pilot project it should lead to greater linkages between GP and specialist services. One of the issues for this project could be the complexity of managing patients and the lack of community based services to deal with their needs.

Both specialist units at Concord and RPA Hospitals have been involved in GP education through the two Divisions of General Practice. The Royal Australian College of GP (RACGP) and ASHM have also been extensively involved in education of GPs. Numerous print and electronic resources are available and seminars are conducted on a regular basis.

Public Health Unit
The role of the Public Health Unit and hepatitis C surveillance

Hepatitis C is a notifiable disease in NSW under the Public Health Act 1991. Positive hepatitis C antibody tests in NSW are routinely notified by laboratories to the local Public Health Unit. The inclusion of basic non-identifying demographic data allows duplicate notifications to be removed and a snapshot of hepatitis C infection to be collated. In addition to passive notification, doctors are legally required to notify cases of ‘acute viral hepatitis’ to the Public Health Unit. This system has several limitations. Because hepatitis C infection is often asymptomatic, passive notification is likely to seriously underestimate its true prevalence. In addition, because there are no diagnostic tests that accurately identify acute hepatitis C infection, incidence cannot be estimated.

The recent Australian Hepatitis C Surveillance Strategy recognized the importance of improving notification protocols and mechanisms for monitoring and surveillance in Australia. A good surveillance system for hepatitis C should:

- identify new cases and determine disease incidence and trends;
- determine risk factors for infection and disease transmission patterns;
- estimate disease burden; and
- identify infected persons who can be counselled and referred for medical follow up.

Within different parts of Australia, the passive notification system is augmented by:

- Enhanced surveillance for acute hepatitis C
- Review of notifications
- Sero-prevalence and risk factor studies
- Population surveys
- Surveys in high risk populations
- Surveillance for chronic liver disease

A system of enhanced surveillance to detect acute cases of hepatitis C was implemented across NSW Public Health Units in 2000. After 12 months, this system was found to be relatively ineffective, requiring substantial resources and providing poor quality information. Suggestions to improve the system were that surveillance be:

- implemented in selected Area Health Services only;
- conducted on a sample of notifications;
- undertaken for a short, defined period each year;
- targeted to high risk groups such as youth; or
- replaced with specific research projects in high prevalence populations.

It was also recommended that more effort be directed towards improving the quality of hepatitis C data through strengthening links with physicians and encouraging passive reporting.

Sero-prevalence surveys, conducted by the Australian National Needle and Syringe Program Survey, have been conducted at both Redfern (1997-2003) and Canterbury (1998-99, 2001-03). In 2001, these surveys revealed that up to 30% of the injecting community surveyed were sharing some form of injecting equipment, at least 50% were antibody positive for hepatitis C and the vast majority of these had received no treatment for their illness.

In addition to surveillance, the Public Health Unit, in association with local councils, implements the NSW Skin Penetration Guidelines. These guidelines apply to tattooists, ear and body piercers, acupuncturists and other people undertaking any other activity that pierces the skin. Local councils are required to keep a register of these premises and the Public Health Unit assists with compliance audits. The Public Health Unit is currently reviewing the regulatory system for skin penetration to ensure that it best addresses the potential infection risks through these practices, including the risks of transmitting hepatitis C.
There is a clear need within SSWAHS (Eastern Zone) that in addition to providing targeted prevention projects, high quality surveillance data is collected. Given that the majority of new hepatitis C infections in Central Sydney occur in intravenous drug users, the specific aims of surveillance within the AHS are to:

- determine risk factors for hepatitis C infection in intravenous drug users (ie transmission through sharing needles or other equipment and other possible mechanisms)
- determine unidentified mechanisms of transmission for hepatitis C.

A number of strategies for hepatitis C surveillance are proposed for the period 2003-2004 (see Areas for Action). These include reintroducing and improving the system of enhanced surveillance for a defined period annually, improving GP notifications of ‘acute viral hepatitis’ and supporting more intensive application of the Needle and Syringe survey at the Redfern and Canterbury REPIDU.

**HIV/AIDS Service**

SSWAHS (Eastern Zone) has a substantial and well-integrated HIV/AIDS service.

Current Services Provided by the Area HIV/AIDS Services:
- Designated inpatient /ambulatory facility at RPAH
- Inpatient/ambulatory care services at Concord.
- Haemophilia services. The Haemophilia population now has to cope with a high incidence of Hepatitis C as well as HIV. The provision of the HIV funded Hepatitis C medical and nursing support is essential to the haemophiliac’s treatment and care. The centre is staffed by a CNC and a full time social worker; HIV Outpatient clinic operates at this venue on a weekly basis.
- Specialist Psychiatry services
- HIV Dementia Residential -The Bridge
- Allied Health Services
- Community Based Services
- Palliative Care Services
- Home Based Care Services
- Extensive health promotion activities

The Area HIV/AIDS Coordinator oversees the funding and functioning of these services as well as auspiced services. The Service also has a strong commitment to incorporating hepatitis C activities into the HIV activities as well as funding several dedicated hepatitis C positions.

**Cellblock**

Cellblock Youth Health Service is a facility of the Community Health Services of the Division of Population Health, SSWAHS (Eastern Zone). It is located at 142 Carillon Ave, Camperdown. The service comprises a multidisciplinary staff establishment of 7.8 FTE positions made up of health promotion workers (focusing on Aboriginal Visual Arts & Cultural, Music & HIV/Hepatitis C), counsellors (a psychologist and a social worker), a program manager and administrative officer. Medical officers (0.2 FTE) and a dental therapist (0.05 FTE) from other health services provide clinical services for which no Medicare card is required.

Cellblock promotes the health and well being of young people aged 12-20 and their communities (in the Eastern Zone) who have experienced homelessness, marginalisation or who are at risk. Young people join with the Cellblock team using creative and innovative processes to improve their physical, mental, emotional, cultural, spiritual and environmental health. The service is safe, free and confidential.

**Sexual Health Service**

Activities of the unit are diverse and include professional and community education programs, resource development, media campaigns, client advocacy, consultancy, community outreach, policy development, research and evaluation.

The Sexual Health Service provides a broad spectrum of services:
- Clinical care and treatment of sexual health problems.
- Surveillance of patterns of sexual health infection transmission.
- Research into sexual health clinical and health promotion issues.
- Professional education for general practitioners and other healthcare workers.
- Hepatitis C testing and treatment including availability of registered S100 hepatitis C Treatment Prescribers.
- Hepatitis C case management including counselling and referral.
- A secondary needle and syringe program (NSP) outlet.
- Weekly male and female clinics for Aboriginal clients.
- An outreach clinic at Rozelle Hospital.
In addition to the clinical activities described above, the service is involved in a range of health promotion activities:

- Inclusion of Hepatitis C in all sexual health related community education programs.
- Regular outreach, in conjunction with REPIDU, to residents of Riverwood.
- A range of health promotion activities and education by a full-time hepatitis C specific health promotion officer.
- Health promotion peer education project targeting Vietnamese IDU.
- Aboriginal men prisoner's project.
- Development and distribution of Hepatitis C resources for PLWHA.
- Professional Hepatitis C education for GPs.

**Health Promotion Unit**

The Health Promotion Unit is part of the Division of Population Health along with Community Health, Public Health, NAHOU, Multicultural Health and Women's Health.

The Mission statement is: “To implement sustainable evidence-based strategies to improve population health outcomes and advocate for equity of health outcomes in Central Sydney”.

The key strategic directions for the Central Sydney Health Promotion Unit over the next five years are to:

- Demonstrate improvements in population health outcomes in priority areas through the implementation of evidence-based health promotion strategies in collaboration with key stakeholders
- Build the organisational capacity for health promotion within SSWAHS (Eastern Zone)
- Advocate for a greater focus on addressing inequalities in health outcomes

There has been a Hepatitis C Health Promotion Officer (HPO) within SSWAHS (Eastern Zone) since late 1999. It was the first AHS in NSW to appoint a dedicated full-time position. The unit is committed to maintaining this position dependant on available funding. The principal role of the hepatitis C HPO in 1999 was to implement the prevention strategies identified in the Hepatitis C Business Plan. Due to the sensitivities around injecting drug use many of the strategies proved difficult to implement. Subsequently the Hepatitis C Health Promotion Co-ordination Steering Committee was formed to assist and advise on the development of other strategies. One of the major achievements of the HPO was the creation of a mural piece in Marrickville. The aim of the mural is to create awareness of hepatitis C issues within the youth in the Marrickville Area and to build capacity within the youth care workers to continue Hepatitis C education with their clients. The mural contains messages around safe injecting and contact numbers for more information. The mural has been well received by the community and the artwork has since been used to make the cover of the Hepatitis C Review. The HPO has also had responsibility for media campaigns, workforce development projects and training, and production of fit pack stickers.

Another important role of the HPO has been to ensure effective liaison and education with community based services, non-government organisations (NGOs), Cellblock and other youth services, the Hepatitis C Council, NUAA and Drug Health services.

In 2002/2003 the Hepatitis C position participated in an anti-discrimination project, a media campaign using Arabic radio, a youth peer education project and a number of education and training sessions for a variety of organizations. This ensured the inclusion of hepatitis in all sexual health related community education programs and involvement in REPIDU activities.

The position is currently managed by the Manager of the Sexual Health Promotion Team and is supported and advised by Area Hepatitis Coordinator and a small committee. The position is funded on a temporary basis under COAG (Commonwealth Organisation Of Australian Governments).

**SSWAHS (Eastern Zone) HIV/AIDS Auspiced Programs**

In addition to these programs, the Area administers seven non-government organisations that are specifically funded through the HIV/AIDS program. These non-government organisations are We Help Ourselves, Stanford House, the Gay and Lesbian Counselling Service, Haemophilia Foundation, The Gender Centre, FPA Health (formerly Family Planning NSW) and Leichhardt Women’s Health Centre. Several of these agencies provide hepatitis C and HIV/AIDS health promotion services across the state, including SSWAHS (Eastern Zone).

The Multicultural HIV/AIDS and Hepatitis C Service is a state-wide service funded by NSW Health and also auspiced by SSWAHS (Eastern Zone). The Service employs its core staff and more than 70 bilingual/bicultural workers from 20 language groups to provide support, education, health promotion, community development, and media initiatives targeting people from culturally and linguistically diverse backgrounds. The Service also receives Federal funding to carry out specific national projects. The Service has links with the Area Hepatitis Coordinator.
and the RPAH based HCV CNCs. The Area Hepatitis Coordinator and the CNCs have provided education and training to MHAHS workers and have also provided advice on the development of resources.

**Aboriginal Services**

A range of strategies are underway to address issues related to hepatitis C in SSWAHS (Eastern Zone).

SSWAHS (Eastern Zone) is currently developing the Aboriginal Health Strategic Plan 2004-2006. It sets out priority issues identified through consultation with Aboriginal people and clinical experts in the field, and provides a plan of action for addressing these issues in Central Sydney over the next three years. Drug and alcohol use and related disorders is one of the key priority areas for action in the Plan. Local Aboriginal people have expressed a strong desire to be actively involved in addressing drug and alcohol issues within their community, and Drug Health Services is committed to supporting the community in their efforts. Drug Health Services recognises the importance of working collaboratively and on an ongoing basis with Aboriginal communities on a range of prevention, harm reduction, early intervention and community development programs. Drug Health Services embraces changes in service provision which will increase accessibility and quality of care for Aboriginal people.

The Aboriginal Health and Medical Research Council (AHMRC) is conducting a project to increase access to services for Aboriginal people at risk of or who have blood borne infections. One of the key areas they are exploring is services in education, prevention and treatment. Findings of the project will contribute to the development of the NSW Sexual Health Implementation Plan for Aboriginal and Torres Strait Islander People.

The Area employs Aboriginal staff to improve assess for Aboriginal people. The Aboriginal staff work in a variety of areas relevant to hepatitis C such as REPIDU, sexual health, health promotion and midwifery.

The Redfern Aboriginal Medical Service (AMS) has an important role in providing community controlled health care in the Area. There are also several other NGOs and community organisations working with the community. AMS medical staff report due to the lifestyle of their hepatitis C patients very few Aboriginal people are thought suitable for anti-viral therapy. As a result, the number of referrals to liver clinics is low.

**Drug Health Services (DHS)**

Drug Health Services (DHS) is a division of Population and Drug Health clinical stream of SSWAHS (Eastern Zone). DHS primarily assists people who use licit and illicit substances to reduce their use of substances and/or reduce the resultant harms to themselves and others. DHS also supports the carers of people with drug use and other services that interact with people with drug use. DHS is established at each of the hospitals of SSWAHS (Eastern Zone) as well as in a number of sites in the community. The Drug Health Services Plan 2002-2005 was formulated in collaboration with other services both within and external to SSWAHS (Eastern Zone) and in sympathy with relevant National and State policies. Like the National Drug Strategy, it focuses on harm minimisation. The plan strengthens partnerships between health, law enforcement, education and non-government sectors. The Area hepatitis plan and Area DHS Plan are closely related.

Hepatitis C infection is one of the major harms associated with injecting drug use and in Australia, 80-90% of newly acquired hepatitis C infections occur among injecting drug users. These infections occur in diverse clinical and community settings and are seen in the context of other health and social problems arising from injecting drug use. DHS supports several services of particular relevance to viral hepatitis:

**Resource and Education Program for Injecting Drug Users (REPIDU)**

The program’s range of harm reduction services includes provision of clean injecting equipment, recovery of used injecting equipment, provision of needle disposal containers, brief health interventions, referral to health and welfare services and education on safer injecting and sexual practices including safe tattooing and piercing. There are primary outlets at Canterbury and Redfern, a mobile outreach service at Redfern in ‘the Block’, and secondary outlets (services with another primary function e.g. sexual health, Cellblock but also distribute injecting equipment). REPIDU is part of the New South Wales Needle Syringe Program (NSP) established in 1988 to reduce transmission of HIV and Sexually Transmissible Infections (STIs) among people who inject drugs. The National report, entitled “Return on Investment in Needle and Syringe programs” (2002) indicates that Australia’s needle and syringe programs have prevented 25,000 new HIV infections and 21,000 hepatitis C infections in 10 years, saving an estimated $2.4 billion in public health funding.

DHS places a high priority on the quality and availability of REPIDU services. Advocacy for REPIDU services is an important role and involves interactions with diverse services such as local councils, community groups, NSW Police, NSW state government, Department of Housing and Department of Community Services.

Injecting equipment is also distributed through the pharmacy fit pack scheme.
Drug treatment programs
These include assessment, counselling, detoxification, rehabilitation and pharmacotherapies and court diversion program (MERIT). Priority areas for drug related health include the prevention and early detection of the harms associated with drug use, particularly alcohol and tobacco in young people, and greater emphasis on strategies to reduce the incidence of blood borne viruses. It is often a challenge to manage chronic HCV infection in this complex clinical context.

Hepatitis services within the pharmacotherapy program
DHS offers hepatitis B vaccination, hepatitis testing and viral hepatitis treatment, if required, on both Canterbury and RPA Hospital sites for people on pharmacotherapy for opioid dependence (methadone and buprenorphine programs). A continuing challenge is to optimise the uptake and completion rates.

Liaison clinical support to the AW Morrow Gastroenterology and Liver Centre at RPAH
DHS provides clinical support for the management of people with chronic hepatitis C who have ongoing problems with drug use, particularly alcohol use. In addition, support is provided to the Australian National Liver Transplantation Unit (RPAH) for the assessment of people with significant past drug and alcohol use and ongoing management of those who receive liver transplants. This is a significant and increasing commitment due to the rising number of cases with advanced hepatitis C and increasing uptake of anti-viral treatment for hepatitis C. Clinical decision making in this context is difficult and is continually being refined.

Outreach hepatitis clinical service to Justice Health (JH)
DHS has provided a regular clinic to the Silverwater prison complex since 1998 and supports the CHS hepatitis working group to develop prevention and treatment services across the 35 prisons within NSW.

Education
Recent staff surveys reveal a lack of confidence amongst DHS staff in advising clients about their viral hepatitis. To address these concerns, DHS provides education to its own and other health care staff including GPs in relation to viral hepatitis. These activities are supported by core staff as well as grants from NSW Health (teaching grant and GP support project).

Research
Current projects involve a study of transmission of viral hepatitis within prison inmates, a study of management of recently acquired hepatitis C, and a survey concerning hepatitis C status amongst pharmacotherapy clients. These projects are funded by grants from NHMRC, NIH and Central Sydney Division of General Practices’ public health trainee.

Summary of key challenges with respect to viral hepatitis
- Maintenance of adequate REPIDU services to meet the clinical need.
- Identifying and overcoming the barriers to hepatitis treatment amongst clients of public and private opioid pharmacotherapy services.
- Maintaining and improving clinical support to the Australian National Liver Transplantation Unit.
- Maintaining high levels of staff training concerning their respective roles in the management of people with viral hepatitis or at risk of these infections.
- Developing and maintaining clinical systems to ensure implementation of SSWAHS (Eastern Zone) hepatitis plan within DHS clinical services.

Action plan within DHS
Implementation of this plan will be guided by the Area Harm Minimisation Manager and an Implementation Committee within DHS, to meet 3 times per year, whose members will include clinicians and managers from various sites of DHS and the Area Hepatitis Co-ordinator.
Both sites are involved in anti-viral therapy S100 prescribing as well as treatment/clinical trials (funded and unfunded). The number and complexity of patients seeking anti-viral therapy has increased at both sites. This is mainly due to the advent of Pegylated interferon on the PBS. People on combination therapy need careful and regular monitoring. They need to be seen at least at weeks 1, 2, and 4 and at 4 week intervals thereafter for physical and psychological assessment and blood tests. Managing people on therapy is resource intensive. Each service uses a different management strategy for patients on anti-viral therapy. The majority of patients require a liver biopsy as part of the assessment process.

Both sites also see a large number of patients with cirrhosis and/or other complications. The number of patients who are undergoing anti-viral therapy with these conditions has increased significantly. S100 access anti-viral therapy has only become available in the last 2-3 years for people with cirrhosis. They require much closer monitoring and more frequent visits. This has impacted significantly on workloads in ambulatory care.

Both centres partake in education of GPs and other HCWs.

Both centres are involved in clinical trials.

Both services have websites accessible to the public.

Neither site has a database to assess number of patients or outcomes.

Both services have recently relocated to new expanded facilities. Even though both sites see only a small percentage of the overall hepatitis C population the services are working at almost full capacity and need extra resourcing in order to meet the escalating demand. Service provision is largely site dependent and there is little clinically-focused coordination or planning between the two services.

Royal Prince Alfred Hospital (RPAH)

A.W. Morrow Gastroenterology and Liver Unit (inc Liver Transplant) Ambulatory Care

Being a quaternary referral centre a large number of patients seeking anti-viral therapy or with advanced liver disease, liver failure or/and HCC are referred to the liver clinic. Between 2000-2003 approximately 60 patients were treated each year with anti-viral therapy. In 2004 the number has increased to almost 85. This number is expected to increase by 25-50% in the next 2 years. Response rates are comparable to clinical trials. Treatment completion rates are around 90%. Patients are primarily managed by the clinical nurse consultant (CNC) under the guidance of the staff specialist.

Table 2: Numbers of patients who commenced anti-viral therapy at RPAH

<table>
<thead>
<tr>
<th>Year</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000</td>
<td>56</td>
</tr>
<tr>
<td>2001</td>
<td>60</td>
</tr>
<tr>
<td>2002</td>
<td>56</td>
</tr>
<tr>
<td>2003</td>
<td>58</td>
</tr>
<tr>
<td>November 2004</td>
<td>81</td>
</tr>
</tbody>
</table>

Table 3: Number of patients with liver cirrhosis who commenced anti-viral therapy at RPAH

<table>
<thead>
<tr>
<th>Year</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>2002</td>
<td>14</td>
</tr>
<tr>
<td>2003</td>
<td>15</td>
</tr>
<tr>
<td>November 2004</td>
<td>17</td>
</tr>
</tbody>
</table>
Advanced liver disease, liver failure or/and HCC are difficult and complicated to manage. The patients require highly specialised care. The complexity of managing these patients is growing as more treatments become available. A large number of patients will be managed over a long period of time – many will have life long care. Most of these patients require regular visits to the department’s ambulatory care service. There is no data base at RPAH to record number of patients with hepatitis C. To measure hepatitis C activity a survey over a 3 month period is conducted every 4 years. In this survey staff specialists record the number of occasions of service they provide within ambulatory care and the status of the patient.
The number of patients with HCC has increased substantially over the last 10 years. Since 1998 to March 2004, 120 definite cases of HCV, and 39 possible cases have been referred (Total HCC referrals - 295 confirmed HCC patients referred + 103 possible cases). If patients’ tumour size is small, patients may qualify for transplant however these patients often die or deteriorate beyond transplantation whilst waiting for transplant (tumour grows too large). Currently the service is not integrated with other cancer programs e.g., Sydney Cancer Centre. Strategies to improve integration are being developed.

<table>
<thead>
<tr>
<th>Demographics and Underlying Cause</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
</tr>
<tr>
<td>Male, n (%)</td>
</tr>
<tr>
<td>Female, n (%)</td>
</tr>
<tr>
<td>Age</td>
</tr>
<tr>
<td>median (range)</td>
</tr>
<tr>
<td>Ethnicity</td>
</tr>
<tr>
<td>Caucasian, n (%)</td>
</tr>
<tr>
<td>Asian, n (%)</td>
</tr>
<tr>
<td>Middle Eastern, n (%)</td>
</tr>
<tr>
<td>Polynesian/Pacific Islander, n (%)</td>
</tr>
<tr>
<td>African, n (%)</td>
</tr>
<tr>
<td>Cause</td>
</tr>
<tr>
<td>HCV, n (%)</td>
</tr>
<tr>
<td>HBV, n (%)</td>
</tr>
<tr>
<td>Alcohol, n (%)</td>
</tr>
<tr>
<td>Other, n (%)</td>
</tr>
<tr>
<td>None apparent, n (%)</td>
</tr>
</tbody>
</table>

Many of the patients have complications brought about by their liver disease e.g., endocrine e.g., diabetes bone disease; cardiovascular e.g., renal, heart; malnutrition; psychological; gastrointestinal e.g., bleeding and haematological. Therefore patients require access to other specialist medical services e.g., Endocrine, Psychiatric, Drug Health, Palliative, Dental, ICU, Radiology and Allied Health e.g., Dieticians, Psychologist, Social Workers. Some of the services such as Occupational Therapy or ambulatory care Physiotherapy are often difficult to access or not available.

In December 2004 the waiting time for a new appointment in the staff specialist clinic is 12-14 weeks. This has increased by 6-8 weeks since 2000 (prev 6 weeks). In December 2004 in addition to existing heavily fully booked clinics 2-3 urgent patients are seen per week. These patients are complex and are either for urgent transplant
assessment or liver cancer management. The waiting time for a new appointment in the VMO liver clinic is 8 weeks. This has increased by 2 weeks since 2000 (previously 6 weeks).

Australian National Liver Transplant Unit (ANLTU)
The unit at RPAH is a super-speciality state wide unit. Medical pre and post liver transplant clinics are linked to AW Morrow Gastroenterology and Liver Unit Clinics. The unit provides the sole liver transplantation service in NSW, the ACT and for some overseas patients.

Annually, an average of 50 liver transplants are performed. To November 30, 2004 59 transplants have been performed. Of these 22 (37%) had hepatitis C. The average waiting time for blood group O and A patients is now approximately 250 days (8 – 9 months). The current waiting list in November 2004 is 24 adults, of these 9 (37%) have hepatitis C and the hospitalisation stay can range from 10 days to several months.

Table 5: ANLTU Number of Liver Transplants 2002-2004

<table>
<thead>
<tr>
<th>Year</th>
<th>Total Number Of transplants</th>
<th>HCV Transplants</th>
</tr>
</thead>
<tbody>
<tr>
<td>2002</td>
<td>41</td>
<td>17 (41%)</td>
</tr>
<tr>
<td>2003</td>
<td>41</td>
<td>13 (32%)</td>
</tr>
<tr>
<td>November 2004</td>
<td>59</td>
<td>22 (36%)</td>
</tr>
</tbody>
</table>

Liver transplant – patient and organ survival
In 2002 the RPA Liver Transplant Unit had a higher patient survival rate (100 per cent of patients) after 12 months as compared to the Australian and New Zealand Liver Transplant Registry (ANZLTR) rate of 96 per cent. Patient and organ survival are measured as a patient may need more than one liver transplant over a lifetime.

Table 6: Liver transplant patients/organs surviving after 12 months

<table>
<thead>
<tr>
<th>ANZLTR RPA</th>
<th>RPA patients</th>
<th>ANZLTR patients</th>
<th>RPA organs</th>
<th>ANZLTR organs</th>
</tr>
</thead>
<tbody>
<tr>
<td>1999</td>
<td>89%</td>
<td>93%</td>
<td>87%</td>
<td>90%</td>
</tr>
<tr>
<td>2000</td>
<td>90%</td>
<td>92%</td>
<td>83%</td>
<td>90%</td>
</tr>
<tr>
<td>2001</td>
<td>82%</td>
<td>86%</td>
<td>79%</td>
<td>80%</td>
</tr>
<tr>
<td>2002</td>
<td>100%</td>
<td>96%</td>
<td>96%</td>
<td>94%</td>
</tr>
</tbody>
</table>

Liver transplant patients require intensive pre and post transplant management. Patients who are referred to RPAH for liver transplantation undergo an extensive assessment. This is mainly carried out on an ambulatory care basis. They are seen by the hepatologist, transplant surgeon, transplant CNC, psychiatrist, social worker, dietitian, endocrinologist and other specialists. Patients have extensive testing including numerous radiological examinations, bone studies, blood tests, nutritional status, and dental examination. Many patients have complications associated with their liver disease resulting in frequent admissions.

Post operatively care is intensive. Recurrence of hepatitis C is an additional problem leading to early graft cirrhosis and liver failure. Treatment of recurrence is difficult however a trial offering anti-viral therapy for these patients began in 2004.

The numbers of donors is very low. For many years different strategies have been implemented to improve donor numbers. The majority of donor livers are now split at the time of transplantation – with half the liver going to a child the other half going to an adult. On a National level in April, 2004 Australian health ministers agreed to change organ donation legislation to reflect the expressed wishes of donors in the event of death and that there not be any need to seek consent from the family at the time of the donation if the persons donor status is known.

Ambulatory care services include:
- Staff Specialist liver clinics
- Public Liver Clinic
- Hepatitis C Nurse Clinic
Liver Disease and Transplantation Nurse
Clinical Trials/Research nurses
Allied Health and other services who attend Clinics:
  Dietician
  Psychiatrist
  Endocrinologist
  Drug Health Service
  Social worker
  Psychologist

Clinics are conducted daily.

Inpatient services
The reason for an admission to RPAH for hepatitis C patients excluding transplant assessment and post transplant is usually related to complications of advanced liver disease e.g. variceal bleeding, sepsis and HCC. These patients usually require repeated admissions. It is often difficult to access beds even day stay beds e.g. ascites (when paracentesis is performed). This is problematic as delays can impair patients’ health further.

For people with relatively mild disease the main reason for admission is liver biopsy.

It is difficult to compare the number of hepatitis C admissions prior to 1998 with the present time as the patient information system in SSWAHS (Eastern Zone) was not in place. When comparisons have been made over the last three years there has been a significant increase (approx 20%) in the number of people admitted with hepatitis C. Complexity of admitted patients has also increased as has the number of procedures performed.

Table 7: Royal Prince Alfred Hospital - Number of Hepatitis C Discharges from Gastroenterology and Liver Directorate for Feb 2001 to April 2001 and Feb 2003 to April 2003 inclusive

<table>
<thead>
<tr>
<th>Year</th>
<th>Number of Discharges</th>
</tr>
</thead>
<tbody>
<tr>
<td>2001</td>
<td>76</td>
</tr>
<tr>
<td>2003</td>
<td>94</td>
</tr>
</tbody>
</table>

Laboratory services
Routine antibody testing and all three molecular tests for hepatitis C are available.

Concord Repatriation General Hospital (CRGH)

Gastroenterology and Liver Unit
At Concord Hospital, care is primarily provided by the staff specialists and is supported by the registered nurse and specialists working in private practice. CRGH treats over 100 patients per year.

Ambulatory care services
Staff Specialists in the liver clinic are supported by the hepatitis C RN and clinical trials/research nurses. The staff specialist and RN position only have temporary funding.

Allied Health and other services are accessed but there are no dedicated positions:
  Dietician
  Psychiatrist
  Drug Health
  Social worker
  Psychologist

Currently, there are three clinics per week, attending to 30-50 patients per week. Due to staffing issues, with insufficient nursing supports, much of the counselling for patients are carried out by staff specialists. The clinics are under funded with increasing numbers of patients seen and treated without an appropriate increase in funding for both medical and allied staff.
In addition to the increased numbers of patients seen in clinic, there has been a increase in complexity of patients treated and managed. Thus, further strains on the existing workload.

A significant proportion of the patients come from a non-English speaking background. Additional interpreters are required to service this population. Other strategies are being pursued to reduce the negative impact of language barriers. These include close collaboration with GP’s who have specific language skills and preparation of patient educational materials in different languages.

Almost all the referrals come from GPs or other specialists. Only a small number of the patients have acquired the infection through IDU. This pattern is starting to change as a result of some collaboration between the Gastroenterology and DHS and Infectious Diseases Unit. As a result, more patients with substance abuse and psychiatric background are offered therapy and require intense support.

In May 2004 the waiting time for a new appointment in the staff specialist clinic was 2-4 weeks. This has remained stable since 2000.

**Infectious Disease Unit**
The Infectious Disease Unit conducts 3-4 clinics per week and they see patients with hepatitis C especially after needle stick etc. They review an average of 30-40 patients per year.

**Mental Health Services (MHS)**
At RPAH the major specific clinical service to hepatitis C in the Area is provided at by the Consultation-Liaison (C-L) Psychiatry Service. This service is provided by a C-L Clinical Psychologist (0.5FTE) and a C-L Psychiatrist. The Psychiatrist (0.5FTE) primary attachment is to the Liver Transplant Unit; the hepatitis C time is effectively “borrowed” from this role. There are two main clinical foci, firstly the management of patients on hepatitis C anti-viral therapy within the AW Morrow Gastroenterology and Liver Unit and secondly the hepatitis C patients referred to the Liver Transplant Unit. Both patient groups are increasing in size and complexity. Patients are also referred to the clinical psychologist from Concord Liver Clinic, other related services, the hepatitis C Council and some patients self-refer. The clinical psychologist has also been involved in conducting support groups. At times the clinical psychologist has been involved in activities at REPIDU and the Sexual Health Clinics.

Within the liver clinics at RPAH, Hepatitis C CNCs provide very important non-specialist support for patients (and their families and carers) during treatment but they need MHS specialist backup. At most recent count, 70% of patients assessed or treated with anti-viral therapy are seen at some point be one or both C-L clinicians and may be followed up throughout treatment. When needed general and specific groups are established to support individuals through treatment.

The majority of potential liver transplant recipients who have hepatitis C as a significant aetiological factor are assessed psychiatrically and a significant proportion are then seen peri operatively or during recovery and rehabilitation phases of treatment.

Specific hepatitis C Mental Health expertise is not equally available across all Area hepatitis C treatment sites, and where it is available there are limitations to availability. Service provision is largely site dependent and there has been little clinically-focused coordination or planning across the Area by Mental Health. There is no hepatitis C specific Mental Health services provided on site at Concord for the liver clinic. Patients are occasionally referred to see the Clinical Psychologist at RPAH. Psychiatric assessment is also sought through the general psychiatric outpatient clinics if necessary or patients are referred back to their GPs. An attempt to link the clinic with an external psychiatrist was not successful. At RPAH there can be extended waiting periods for specific psychiatric assessment.

If there is significant past psychiatric history, the prescribing criteria requires psychiatric assessment (and possibly ongoing monitoring during anti-viral therapy). This requirement for specialist psychiatric/psychological assessment treatment and education is likely to increase considerably as more individual seek or are referred for treatment (both interferon based treatments and transplantation) – the demand is likely to parallel the number of patients in treatment. This reflects the epidemiology of hepatitis C, the increasing awareness treatment and its increasing success rate, and a preparedness to take on increasingly complex patients. Locally it may also be influenced by the Community Prescribing project which is aimed at widening the access to treatment through shared care arrangements with GPs, Canterbury D&A etc. Additionally patients within Mental Health settings are an at risk group for hepatitis C acquisition, awareness of the clinical issues and testing is gradually increasing, and referral rates for treatment consideration should follow.
Service provision is largely site dependent and there has been little clinically-focused coordination or planning across the Area by Area Mental Health Services. In the past there were 4 HIV/HCV funded nursing positions in CSAHS whose roles focused on Rozelle and Community Mental Health. Two positions remain, one based at Rozelle and attending Redfern CHC for one day a week, the other based at Canterbury and also attends Marrickville CHC and Ashfield. The nurse based at Rozelle has helped to coordinate two hepatitis educational sessions for Area Mental Health staff over the last 2 years and will continue to do so. She offers some client consultation focused on awareness of hepatitis resources. The nurse based at Canterbury case manages a number of mental health clients with hepatitis C, although HIV is the main part of her work. For most of her patients the immediate mental health issues are her clients’ priority rather than hepatitis C and giving hepatitis C some attention is a goal. Mental health activities still focus significantly on infection control, but awareness of clinical issues has increased. Few patients are currently referred for treatment.

**Nutrition and Dietetic Services**

The service provides assessment and counselling for patients with general and specific nutritional concerns; nutritional assessment and therapeutic dietetics such as management of malnutrition; development of educational resources and research into impact of dietary interventions on outcome. An increasing amount of research is showing nutritional interventions is important in improving survival in patients with advanced disease. The service is provided by two part-time dieticians to inpatients and patients attending ambulatory care.

Providing appropriate nutritional interventions for patients who live in regional or rural areas has been identified as an area of need.

**Social Work Service**

The Social Work Department provides a part-time 0.6 hepatitis C social worker which is based at RPA. The social worker offers a consultation service as well as coordinating activities such as education and a support group.

A 1 FTE Social Worker is also attached to the Liver Transplantation Unit. They also offer consultation, education and a support group.

Like other services as the complexity of the patients has increased the demand on social worker services as subsequently increased.

**Other services where hepatitis C case load will increase**

- **Dental Health Services**
  
  An Australian study has shown an urgent need for priority delivery of dental care for people with hepatitis C infection. In this comparative study the number of decayed and missing teeth was greater in those infected with hepatitis C for all patients aged between 25 and 50 years and there was marked trend for poor periodontal health in people with hepatitis C. Hepatitis C is also implicated in two important oral conditions, namely Sjogren’s syndrome and lichen planus.

  As the number of people with hepatitis C increases dental services are likely to face a growing number of patients with hepatitis C. For this reason it is essential for dental health care workers to be offered an appropriate education strategy on the principal features of the disease and of its oral and dental implications.

- **Endocrinology**
  
  Hepatitis C infection can induce insulin resistance irrespective of the severity of liver disease, the effect appears to be genotype specific. Increased insulin resistance contributes to fibrotic progression and can also increase the risk of developing type 2 diabetes (diabetes mellitus).

- **Radiology**
  
  As an increasing number of people have developed advanced disease the demand on radiological services has increased. This is related to liver cancer screening and treatment of liver cancer. At RPA demand exceeds the capacity of hospital base service for routine screens therefore patients are referred to private facilities. This is inefficient and expensive and makes it difficult to access actual films (rather than reports) for comparisons on tumor size. More importantly at RPA the limited access to interventional radiology for diagnosis and treatment leads to long therapy delays. This subsequently worsens prognosis/treatment responses.

- **Cancer Services**
  
  The Sydney Cancer Centre is based in SSWAHS (Eastern Zone). It is the largest cancer treatment centre in Australia. Currently there are few links between the liver clinics and the Cancer Centre. In response to the increase in the number of patients managed by the liver clinics with cancer a need to create linkages between the services
• Palliative Care
Palliative care is now recognised as an integral and essential part of a comprehensive health care system. Links to palliative care must exist but will need to be increased.

• Anaesthetics
The RPAH Anaesthetics Department provides a range of services from liver transplant to assisting in blood collection. Difficulties with venous access for blood collection have been identified as a more commonly occurring problem in patients referred with hepatitis C. To address this issue an ongoing partnership with the Hepatitis C CNCs and the Anaesthetic Department has developed a protocol for nurses to access blood from the external jugular. As the number of referrals increases the protocol will need to be taken up by other services such as blood collection.

• Staff Health
Health care workers face a small risk of acquiring serious blood borne infections from needle stick injuries. The transmission rate for Hepatitis C is 3% to 10% following a percutaneous injury. Staff Health is responsible for monitoring needle stick injuries and providing appropriate follow-up testing, counselling, occupational guidance and referral for all CSAHS employees.

Education
The Area Hepatitis C Coordinator, Hepatology staff specialists, CNCs and RNs within the Gastroenterology and Liver Department, the Hepatitis C Health Promotion Officer, members of the HIV, Drug Health, Dietetics, Mental Health and Sexual Health teams and the hepatitis C social worker have provided hepatitis C education. This has involved a range of seminars and the development of a range of resources. Collaboration occurs with organisations outside the AHS such as Hepatitis C Council, ASHM and NUAA.

In addition to many small seminars each year, half day seminars for health care workers on hepatitis C are conducted in at least one of major hospital sites within SSWAHS (Eastern Zone). These seminars have had documented success for those who are able to attend, however there remains an ongoing challenge in accessing those health care workers who have difficulty in arranging release from wards/other work places to attend such seminars. In response to this challenge, in 2001-2002 the SSWAHS (Eastern Zone) Hepatitis C staff worked in collaboration with the NSW Hepatitis C Workforce Development Project team to facilitate a series of hepatitis C related in-services for staff in clinical areas that have a high caseload of patients living with hepatitis C. The focus of this strategy was to assist non-hepatitis C specialist staff within work settings to develop or enhance locally based client-driven services through team process of action learning and problem solving. The methodology was both theory informed and evidence based (Hepatitis C Council Project Report, 1999). By addressing hepatitis C related issues in the context of individual workplaces learning was situated and informed by organisational goals, work practices and professional relationships. Tailored case presentations and strategic questioning were used to promote enquiry and dialogue within team settings. This project evaluated very well and has been taken up by other AHS, however problems remain with accessing staff.

In 2003 two OPSCA programs to enhance the knowledge and skills of nurses within and external to RPAH Gastroenterology and Liver Service in the areas of viral hepatitis and liver transplant were successfully conducted.

In 2004 a more extensive program offering a range of education opportunities has been developed. It was extensively advertised but the uptake has been disappointing. The attendance at the community based seminar in Newtown was low and the seminar at Concord had to be postponed because of staff shortages.

Area Hepatitis Advisory Committee (HAC)
The Area Hepatitis C Advisory Committee (HAC) was first formed in 1997. The members are primarily managers or representatives of services which have a high hepatitis C caseload/workload. Implementation of the Plan is the responsibility of the HAC. The Area HAC meets tri-annually. The role of the Committee is to oversee the implementation of the SSWAHS (Eastern Zone) Hepatitis C Strategy 2005-2008, respond to National and State Strategies and improve the coordination between services in order to provide a multidisciplinary approach to both hepatitis C and hepatitis B.

Research
An extensive amount of hepatitis C research has been conducted in SSWAHS (Eastern Zone) and it is expected to increase. Current and recent research initiatives extend over a number of disciplines incorporating basic scientific research, social, behavioural, epidemiological, virological and clinical trials. Partnerships have been developed with local, national and international researchers.
Funding

The Commonwealth Government provides some funding under COAG (Council of Australian Governments). This funding was recently renewed and is limited to three years. There are restrictions on how the funding can be utilised. Most of the funding is tied to prevention/health promotion projects. The Commonwealth is currently developing the 2nd National Hepatitis C Strategy. It is unclear if the guidelines for COAG funding will be altered when it is released or if funding will be increased.

NSW Health provides a small amount of enhancement funding (2004-2005 approx $151,000). This is provided through the AIDS Program funding. Approximately eight percent is given to the Public Health Unit for enhanced surveillance. NSW Health is currently developing its second Strategy. It is unclear if funding for the implementation of these will be increased.

The Area HIV/AIDS service funds several positions which are dedicated hepatitis C positions. Over the next three years the AIDS RDF will be progressively implemented. It is anticipated that under the RDF, SSWAHS (Eastern Zone) funding will reduce. This will have implications for all AIDS unfunded services including Hepatitis C Services.

A NSW Health Department policy direction is that AIDS funding for Hepatitis C is directed at prevention/education rather than treatment and care.

From mainstream funding the Area provides funding through the RPAH Gastroenterology and Liver Service.

There are many employees in SSWAHS (Eastern Zone) who now have hepatitis C related activities incorporated into their workload. This includes staff in the Public Health Unit, Health Promotion Unit, Sexual Health Service, Drug Health Service, Gastroenterology and Liver Service and other services.

The RPAH Hepatitis C CNC position was the first dedicated Hepatitis C position in SSWAHS (Eastern Zone) (also the first in NSW). It was created in 1994. In the last three years no new positions have been created.

Some funding is dispensed by Drug companies to support clinical services and education activities. It is anticipated only some of the funding will continue. Research is funded from a variety of sources but primarily through NHMRC grants.

Table 8: Dedicated Hepatitis C Positions

<table>
<thead>
<tr>
<th>Position</th>
<th>Hours</th>
<th>Location</th>
<th>Funding Source 2004</th>
</tr>
</thead>
<tbody>
<tr>
<td>Area Hepatitis Coordinator</td>
<td>1 FTE</td>
<td>Area Based at RPAH</td>
<td>Area HIV/AIDS</td>
</tr>
<tr>
<td>Hepatitis C CNC</td>
<td>1 FTE</td>
<td>G&amp;L, RPAH</td>
<td>General Funds</td>
</tr>
<tr>
<td>Hepatitis C RN</td>
<td>1 FTE</td>
<td>G&amp;L, Concord</td>
<td>Area HIV/AIDS</td>
</tr>
<tr>
<td>Hepatitis C RN</td>
<td>0.4 FTE</td>
<td>G&amp;L, RPAH</td>
<td>Area HIV/AIDS</td>
</tr>
<tr>
<td>Hepatitis C RN</td>
<td>0.3 FTE</td>
<td>G&amp;L, RPAH</td>
<td>Drug Company</td>
</tr>
<tr>
<td>Hepatitis C Health Promotion Officer</td>
<td>1 FTE</td>
<td>Health Promotion Sexual Health</td>
<td>Temporary COAG funding has been used to fund this position</td>
</tr>
<tr>
<td>Liver Transplant RN</td>
<td>0.3 FTE</td>
<td>G&amp;L, RPAH</td>
<td>Area HIV/AIDS</td>
</tr>
<tr>
<td>Administration Officer</td>
<td>1 FTE</td>
<td>G&amp;L, RPAH</td>
<td>Area HIV/AIDS</td>
</tr>
<tr>
<td>C-L Psychologist</td>
<td>0.5 FTE</td>
<td>MHS</td>
<td>Area HIV/AIDS</td>
</tr>
<tr>
<td>Social Worker</td>
<td>0.6 FTE</td>
<td>Social Work</td>
<td>Area HIV/AIDS</td>
</tr>
</tbody>
</table>

Some funding is dispensed by Drug companies to support clinical services and education activities. Research is funded from a variety of sources but primarily through NHMRC grants.
The Areas for Action has been developed after a widespread consultation and planning process. The purpose of the Areas for Action is to develop a framework which identifies strategies to manage key issues, performance indicators, responsibilities and an implementation timeframe.

- **Area for Action 1:** To minimise the transmission of hepatitis C
- **Area for Action 2:** To maximise the health status of people with hepatitis C by improving care, treatment and support
- **Area for Action 3:** To minimise the negative health and social and economic impact by reducing stigma and discrimination
- **Area for Action 4:** Improve monitoring and surveillance of hepatitis C and support multidisciplinary research capacity that incorporates basic virology, clinical research, epidemiology and social research.
**Areas for Action 1:**

To minimise the transmission of hepatitis C

Health Promotion/Prevention Working Group

<table>
<thead>
<tr>
<th>Name</th>
<th>Position</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dr Chris Rissel (Chair)</td>
<td>Director, Health Promotion Unit</td>
</tr>
<tr>
<td>Mr Michael Arnold</td>
<td>NUAA representative</td>
</tr>
<tr>
<td>Mr Peter Todaro</td>
<td>Area HIV Coordinator</td>
</tr>
<tr>
<td>Ms Janice Pritchard-Jones</td>
<td>Area HCV Coordinator</td>
</tr>
<tr>
<td>Mr David Dash</td>
<td>Area HCV Health Promotion Officer</td>
</tr>
<tr>
<td>Mr Anthony Stralow</td>
<td>Area HIV/AIDS Health Promotion Officer</td>
</tr>
<tr>
<td>Ms Miranda Shaw</td>
<td>Senior Sexual Health Promotion Officer</td>
</tr>
<tr>
<td>Ms Sallie Cardiff</td>
<td>Hepatitis C Council representative</td>
</tr>
<tr>
<td>Ms Angie Campillo</td>
<td>Community Services Worker/Clinician, DHS</td>
</tr>
<tr>
<td>Strategies</td>
<td>Performance Indicators</td>
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</table>
| 1. Increase accessibility to a range of injecting equipment and increase HCV education for injecting drug users | a. Networks and partnerships strengthened between primary and secondary NSP services to provide coordinated HCV prevention initiatives  
b. Needle distribution outlets (secondary services, vending machines, outreach services) increased by 10%  
c. Number of pharmacies that participate in needle syringe distribution as part of the Pharmacy Guild Scheme, increased by 10% (currently 25)  
d. A HCV prevention needs assessment undertaken at all DHS sites to determine local HCV prevention initiatives  
e. Targeted HCV education and support program (eg nutrition, HBV vaccinations, drug treatment options) for clients, implemented through REPIDU, in conjunction with key service partners | a. Harm Minimisation Manager; DHS; Manager, REPIDU; HCV Health Promotion Officer, HIV Health Promotion  
b. Harm Minimisation Manager, DHS  
c. Harm Minimisation Manager, DHS; Clinical Projects Manager, DHS  
d. Harm Minimisation Manager, DHS; Manager, REPIDU  
e. Harm Minimisation Manager, DHS; Manager, REPIDU, Area Hepatitis Coordinator | a. Ongoing  
b. 2007  
c. 2007  
d. 2005  
e. 2005-6 |
| 2. Increase support for HCV prevention initiatives and needle syringe programs across the Area Health Service | a. HCV workforce knowledge of harm minimisation developed through a coordinated HCV workforce development program  
b. Community stakeholders knowledge and understanding of HCV issues increased through coordinated HCV community education initiatives  
c. Biannual articles published in the Area newsletters (HPU Healthy Happenings; HIV publications; Hepatitis newsletter)  
d. Data published annually by the PHU in yearly HCV Communicable Disease Report | a. HCV Health Promotion Officer; Area Hepatitis Coordinator; Harm Minimisation Manager, DHS  
b. HCV Health Promotion Officer; Area Hepatitis Coordinator; Harm Minimisation Manager, DHS  
c. HCV Health Promotion Officer; Area Hepatitis Coordinator  
d. Public health Unit  
e. Public health Unit | a. Ongoing  
b. Ongoing  
c. Ongoing  
d. Ongoing  
e. Ongoing |
| 3. Increase community safe needle disposal options | a. Public needle disposal units in areas of high injecting drug use increased by 20%  
b. Partnerships between SSWAHS (Eastern Zone) and local governments established in each LGA, to address the issues of publicly discarded needles at the local level  
c. Community education and training programs incorporating safe needle disposal delivered to communities on a planned basis | a. Harm Minimisation Manager, DHS  
b. Harm Minimisation Manager, DHS  
c. Manager, REPIDU  
d. Harm Minimisation Manager, DHS; Manager, REPIDU  
e. Director, DHS | a. 2007  
b. Ongoing  
c. Ongoing  
d. 2005  
e. Ongoing |
<table>
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<th>Strategies</th>
<th>Performance Indicators</th>
<th>Responsibility</th>
<th>Time Frame</th>
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</thead>
<tbody>
<tr>
<td>4. Increase HCV workforce development capacity building</td>
<td>d. Recommendations from the Marrickville Safe Disposal Report implemented</td>
<td>a. HCV Health Promotion Officer; Area Hepatitis Coordinator; Harm Minimisation Manager, DHS</td>
<td>a. start 2005</td>
</tr>
<tr>
<td></td>
<td>e. Needle Clean-up Contract Management Committee at DHS maintained</td>
<td>b. HCV Health Promotion Officer; Area Hepatitis Coordinator; Harm Minimisation Manager, DHS</td>
<td>b. start 2005</td>
</tr>
<tr>
<td></td>
<td></td>
<td>c. HCV Health Promotion Officer; Area Hepatitis Coordinator; Harm Minimisation Manager, DHS</td>
<td>c. Ongoing</td>
</tr>
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<td></td>
<td></td>
<td>d. Health Promotion Manager, DHS</td>
<td>d. 2005-2006</td>
</tr>
<tr>
<td></td>
<td></td>
<td>e. Network among the HCV workforce strengthened through the establishment of coordinated educational and networking forums</td>
<td>e. Start 2005</td>
</tr>
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<td></td>
<td></td>
<td>f. REPIDU and Area HIV and HCV Services coordinate collaborative health promotion projects around HCV and harm reduction</td>
<td>f. Start 2005</td>
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<td></td>
<td></td>
<td>g. A HCV educational program developed and delivered by REPIDU and partner services, to secondary NSP services, on a planned basis</td>
<td>g. Start 2005</td>
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<tr>
<td></td>
<td></td>
<td>h. SSWAHS (Eastern Zone) HCV HCV Update newsletter disseminated quarterly</td>
<td>h. Ongoing</td>
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<td></td>
<td></td>
<td>i. Dissemination of brochure promoting HCV education opportunities for HCWs and community</td>
<td>i. 2006</td>
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<td></td>
<td></td>
<td>j. Audit of the current provision of HCV education for undergraduate (medical, health, nursing, dental) students completed</td>
<td>j. Ongoing</td>
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<td></td>
<td></td>
<td>k. Links with related NGOs and Hepatitis services further developed</td>
<td>k. Ongoing</td>
</tr>
<tr>
<td>5. To increase community awareness about HCV</td>
<td>a. CSAHS actively involved in both State &amp; Commonwealth initiatives to increase community awareness</td>
<td>a. Area Hepatitis Coordinator, HCV Health Promotion Officer</td>
<td>a. Ongoing</td>
</tr>
<tr>
<td></td>
<td></td>
<td>b. HCV Health Promotion Officer, Area</td>
<td>b. start 2005</td>
</tr>
<tr>
<td></td>
<td></td>
<td>c. Ongoing</td>
<td>c. Ongoing</td>
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<tr>
<td>Strategies</td>
<td>Performance Indicators</td>
<td>Responsibility</td>
<td>Time Frame</td>
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</tbody>
</table>
| 6. Involve affected community in service development and awareness raising | a. Develop a partnership approach between relevant Area HCV services and relevant Non Government Organisations | a. All HAC members  
b. All HAC members  
c. HCV Health Promotion Officer, Area Hepatitis Coordinator | a. Ongoing  
b. Ongoing  
c. Ongoing |
|                                                                           | b. Representative(s) from Non Government Agencies included on relevant committees. Membership of committees reviewed. |                                                                                 |            |
|                                                                           | c. Area HCV interagency continues                                                      |                                                                                 |            |

7. Develop programs that target injecting drug users and those at risk of injecting to reduce harm especially young people

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<tr>
<th>Performance Indicators</th>
<th>Responsibility</th>
<th>Time Frame</th>
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</table>
| a. A range of evidence based strategies developed                                         | a. Drug Health Services, HCV Health Promotion Officer, Area Hepatitis Coordinator, Cellblock | a. Ongoing  
b. Ongoing  
c. Ongoing  
d. Start 2005  
e. Ongoing  
f. Ongoing  
g. Ongoing  
h. 2005  
i. Ongoing  
j. Ongoing  
k. 2006 |
<p>| b. Increased referrals from DHS to appropriate HCV services                               |                                                                                  |            |
| c. Optimise the uptake and completion rates of HBV vaccine                                |                                                                                  |            |
| d. Collaborative work with SSWAHS (Eastern Zone) and the Department of Education          |                                                                                  |            |
| e. Relevant articles published in target population publications                          |                                                                                  |            |
| f. Peer education initiatives conducted                                                  |                                                                                  |            |
| g. Partnership and collaboration with relevant service providers                          |                                                                                  |            |
| h. Complete distribution of fitpack stickers                                             |                                                                                  |            |
| i. Intersectoral partnership of YISHI[1] interagency members maintained                   |                                                                                  |            |
| j. Youth health promotion consultation provided to health services                       |                                                                                  |            |
| k. COAG funded projects completed                                                        |                                                                                  |            |</p>
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</table>
| 8. Implementation of Infection Control and Skin penetration guidelines    | a. Further compliance, monitoring and education of high risk skin penetration operators conducted in partnership with local councils | i. Cellblock HIV/HCV Health Promotion Officer (Arts & Cultural), NSW Justice Health – Juvenile Health Services YISHI members  
j. Cellblock HIV/HCV Health Promotion Officer (Arts & Cultural)  
k. Cellblock HIV/HCV Health Promotion Officer (Arts & Cultural), HCV Health Promotion Officer | a. Ongoing |
| 9. Secure permanent funding for HCV Health Promotion Officer              | a. Minimum of 1 FTE HCV Health Promotion Officer employed                               | a. Public Health Unit                                                         | a. 2005    |
| 10. Improve care of GP and health care workers who have had a needle stick injury | a. Increase in reporting/recording and follow up of needle stick injuries  
b. Management of needle stick injury included in HCW HCV education  
c. Staff health service offered to GPs                                 | a, b. Staff Health, Area HIV Coordinator, Area Hepatitis Coordinator  
c. Staff Health                                                         | a. Ongoing  
b. Ongoing  
c. Ongoing |
Area for Action 2:

To maximise the health status of people with hepatitis C

Treatment and Care Advisory Group

Ms Janice Pritchard-Jones Area Hepatitis Coordinator, (Joint Chair)
Dr Robert Feller HCV staff specialist (Joint Chair)
Mr Peter Todaro Area HIV Coordinator
Dr Michael Moore CSAHS GP representative
Dr Simone Strasser RPAH Hepatology Senior Staff Specialist
Ms Sue Mason RPAH HCV CNC
Ms Margaret Gleeson RPAH Liver Transplant CNC
Ms Virginia Stalenberg Concord HCV RN
Ms Sallie Cardiff Hepatitis C Council representative
Dr Alice Lee Concord Hepatology Staff Specialist
A/Prof Paul Haber Senior Staff Specialist, Drug Health Services
Ms Suzanne Roche Hepatitis C Psychologist
Dr Rob Gribble Psychiatrist
Mr Jose Ascencio HCV Social Worker
<table>
<thead>
<tr>
<th>Strategies</th>
<th>Performance Indicators</th>
<th>Responsibility</th>
<th>Timeframe</th>
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</thead>
</table>
| 1. General practitioners provide primary care for the majority of people living with HCV | a. Seminars developed through partnerships with both GP Divisions  
• Good attendance rates at seminars  
• HCV resources specifically developed for GPs disseminated at seminars and accessible on SSWAHS (Eastern Zone) liver clinic websites  
• REPIDU to participate in the development of seminars and resources for GPs around caring for people currently injecting drugs | a. Area HCV Coordinator, GP Division, RPAH and Concord  
Hepatology Staff Specialists and CNCs, Harm Minimisation Manager DHS | a. Biannual  
b. Ongoing  
c. Ongoing  
d. Ongoing  
e. Ongoing  
f. 2005  
g. Ongoing |
| Support professional development of GPs | b. Number of EPC or other shared care plans and discharge summaries |  |
| Support Enhanced Primary Care (EPC) – work with GPs in the development of referral check lists, care plans and discharge summaries | c. GP representation and input on HAC and Treatment and Care group maintained |  |
| Involve GPs in service planning | d. Drug Health Services involves local GPs in service planning and broader needs analysis of client population, especially in the primary health care service planning |  |
| GPs aware of resources and services in Area | e. GP Referral Card reviewed, updated and distributed annually |  |
| Improve quality of case information correspondence between specialist sites and GPs | f. Annual update reports in Divisional newsletters  
• Information provided on G&L websites |  |
| Utilise electronic technology to create capability for GPs download referral or care plan templates | g. Increased number of case letters/care plans to GP  
• Relevant test results provided to GPs who have referred to RPA staff specialist liver clinics |  |
| Care plans, referral forms and liver transplant discharge summaries/plans (non EPC) to be developed in partnership with specialist staff and GPs | f. Both Gastro and Liver Service websites contain HCV downloads and links  
g. Utilisation of care plans, referrals and discharge summaries/plans |  |
| 2. Community prescribing of HCV anti-viral therapy | a. ASHM community prescribing pilot for the management of HCV pilot project completed and evaluated within Area | a. ASHM, Community prescribers  
Area Hepatitis Coordinator, RPAH Hepatology and Drug Health Staff Specialists, RPAH HCV CNC | a. Ongoing pilot completed 2005  
b. Ongoing  
c. Ongoing |
<p>| | b. Partnerships developed between HCV CNCs, Staff specialists, allied health and |  |</p>
<table>
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<th>Performance Indicators</th>
<th>Responsibility</th>
<th>Timeframe</th>
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</table>
| 3. Increase DHS capacity to provide primary care of HCV among people living with HCV | a. DHS to explore the feasibility of developing a primary health care approach to working with injecting drug users  
   b. DHS to undertake a needs assessment of clients for HCV support groups | a. Ham Minimisation Manager, DHS  
   b. Ham Minimisation Manager, DHS; Area Hepatitis Coordinator | a. 2005  
   b. 2005-06 |
| 4. Ensure equity of access to health maintenance and treatment information | a. Development and dissemination of written resources in languages other than English  
   b. Culturally appropriate information and education on treatment options provided  
   c. Interpreter service utilised  
   d. Annual education session for interpreters  
   e. Dissemination and assessment of patient information booklet for HCV treatment patients at RPAH  
   f. Development of patient information booklet for HCV treatment patients at Concord  
   g. DHS to conduct client education needs assessment regarding maintenance and treatment information | a. Area Hepatitis Coordinator, HCV Health Promotion Officer, HCV social worker, HCV CNC and RNs, Hepatology Staff Specialists, GP Divisions  
   b. HCV CNC and RNs, Hepatology Staff Specialists, Area Hepatitis Coordinator, HCV Health Promotion Officer, HCV social worker, GP Divisions  
   c. HCV CNC and RNs, Hepatology Staff Specialists, Area Hepatitis Coordinator  
   d. Area Hepatitis Coordinator, HCV CNC  
   e. RPAH HCV CNC, Area Hepatitis Coordinator and Social Worker  
   f. Area Hepatitis Coordinator, Concord HCV RN  
   g. Harm Minimisation Manager, DHS | a. Ongoing  
   b. Ongoing  
   c. Ongoing  
   d. Ongoing  
   e. 2005  
   f. 2005  
   g. 2005-2006 |
| 5. Increase capacity to provide comprehensive HCV care and treatment services through the hospital’s liver service ambulatory care, including | a. RPAH Liver transplant long term follow up 1 FTE recruited  
   • RPAH HCV advanced liver disease RN recruited  
   • RPAH HCV RN hrs increased by 0.5 FTE  
   • Concord HCV RN hrs increased by 0.5 FTE | a. Gastroenterology and Liver Service Directors, Liver Transplant Director, Gastroenterology and Liver Service Clinical Manager, Area Hepatitis Coordinator, RPAH Liver and HCV CNCs  
   b. Gastroenterology and Liver Service Directors, Liver Transplant Director, | a. 2007  
   b. 2005  
   c. 2006  
   d. 2005 |

HEPATITIS C STRATEGY 2005–2008
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<tr>
<th>Strategies</th>
<th>Performance Indicators</th>
<th>Responsibility</th>
<th>Timeframe</th>
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</table>
| Canterbury Hospital  
  d. Improve access to physiotherapy, OT and cancer services | b. RPAH liver transplant staff specialist 1 FTE recruited  
• Concord Staff specialist or VMO hrs increased by 0.6 FTE  
c. Review completed and recommendations implemented  
d. Number of referrals to these services increased | Gastroenterology and Liver Service Clinical Manager,  
c. Area Hepatitis Coordinator  
d. Area Hepatitis Coordinator, RPAH Liver and HCV CNCs, Hepatology Staff Specialists | a. 2005  
b. Ongoing from 2005  
c. Ongoing from 2005  
d. Ongoing from 2005  
e. Start 2005 |
| 6. Improve the follow up care of patients attending liver clinics through the development of a liver electronic medical record at RPAH | a. Liver electronic medical record rolled out across Area  
b. RPAH related information stored in one record  
c. Relevant patient information more readily available to appropriate service providers  
d. Data collection at Concord and RPA improved | a. EMR Committee  
b. EMR Project Officer and Committee  
c. EMR Project Officer and Committee  
d. Service Providers, EMR Project Officer and Committee | a. 2005  
b. Ongoing from 2005  
c. Ongoing from 2005  
d. Ongoing from 2005 |
| 7. Ensure patients attending liver clinics have improved access to DHS | a. Expansion of integrated DHS and Liver Clinic  
b. Regular (weekly) clinical review meeting between DHS, mental health and RPA liver clinic staff | a. DHS Staff Specialist, Mental Health and RPA Liver Service  
b. DHS Staff Specialist, Mental Health and RPA Liver Service | a. 2005 |
| 8. To provide high quality nutritional management | a. Improved awareness of importance of nutrition and nutritional assessment for patients with advanced disease  
b. Improved understanding of the utilisation of nutritional supplements  
c. All liver clinic patients have BMI recorded  
d. Obese patients provided with appropriate dietary advice  
e. DHS to disseminate relevant nutritional resources to clients, as required | a. Nutrition and Dietetics, Hepatology Staff Specialists, Liver Transplant and HCV CNCs and RNs, Area Hepatitis Coordinator  
b. Nutrition and Dietetics, Hepatology Staff Specialists, Liver Transplant and HCV CNCs and RNs, Area Hepatitis Coordinator  
c. Nutrition and Dietetics, Hepatology Staff Specialists, Liver Transplant and HCV CNCs and RNs, Area Hepatitis Coordinator  
d. Nutrition and Dietetics, Hepatology Staff Specialists, Liver Transplant and HCV CNCs and RNs  
e. DHS Service Managers | a. Ongoing  
b. Ongoing  
c. Ongoing  
d. Ongoing  
e. Start 2005 |
<table>
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<th>Timeframe</th>
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</table>
| 9. Provide appropriate range of mental health and counselling services (MHS) to people with HCV and their carers | a. Access to MHS specialist support and consultancy during transplant assessment and antiviral therapy course improved  
b. Psychological/psychiatric assessment and treatment of HCV related psychological disorders and difficulties improved  
c. Assistance with quality of life issues, education and support of families and carers provided  
d. Education and training sessions related to the psychosocial and psychiatric aspects of HCV provided to HCWs  
e. Trial completed of a regular monthly clinic provided by the Clinical Psychologist within the Concord liver clinic setting. Recommendations of review implemented.  
f. Mental health care of RPA patients improved through strengthening of partnerships between the Transplant Medical team, Mental Health, Drug Health Services, Social Work and CNCs.  
g. Additional psychiatric registrar position facilitated  
h. Links between GPs, community health services, private psychiatrist/counsellors and MHS in regard to HCV care developed  
i. Mechanisms established in Mental Health to coordinate clinical service development to support HCV Services, involving senior clinicians, Mental Health management and HCV/HIV Services  
j. HCV education sessions conducted annually at Rozelle Hospital.                                                                 | a. Director Mental Health, AMHS  
HIV/HCV/Sexual Health Manager, Liver Transplant and HCV Psychiatrist C-L  
Psychologist, Transplant Medical team, Mental Health Team, Drug Health Services, Social Work and Liver Transplant and HCV CNCs  
b. Director Mental Health, AMHS  
HIV/HCV/Sexual Health Manager, Liver Transplant and HCV Psychiatrist C-L  
Psychologist, Transplant Medical team, Mental Health Team, Drug Health Services, Social Work and Liver Transplant and HCV CNCs  
c. Director Mental Health, AMHS  
HIV/HCV/Sexual Health Manager, Liver Transplant and HCV Psychiatrist C-L  
Psychologist, Transplant Medical team, Mental Health Team, Drug Health Services, Social Work and Liver Transplant and HCV CNCs  
d. AMHS HIV/HCV C/Sexual Health Manager, C-L Psychologist, Area Hepatitis Coordinator, Liver Transplant and HCV CNCs  
e. C-L Psychologist, Area Hepatitis Coordinator, Concord Hepatology Staff Specialists and HCV RN  
f. Liver Transplant and HCV Psychiatrist, C-L Psychologist, Transplant Medical team, Drug Health Services, Social Work and Liver Transplant and HCV CNCs  
g. Liver Transplant and HCV Psychiatrist, Director Mental Health, Liver Transplant Medical team  
h. C-L Psychologist, Area Hepatitis Coordinator, Liver Transplant and HCV | a. 2005-2006  
b. 2005-2006  
c. Ongoing  
d. Ongoing  
e. 2005  
f. Ongoing  
g. 2005-2006  
h. 2005-2006  
i. 2005-2007  
j. Ongoing |
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</table>
| 10. Facilitate and coordinate rehabilitation program and support group for transplant patients | a. Number of participants who partake in program  
b. Evaluation completion after first year | a. Liver Transplant Social Worker Liver Transplant CNC  
b. Liver Transplant Social Worker Liver Transplant CNC | a. 2005  
b. 2006 |
| 11. Assess need for support group for people undergoing or contemplating anti-viral therapy | a. Assessment for support group conducted | a. HCV Social Worker, RPAH HCV CNCs | a. Ongoing |
| 12. Develop an effective education program for all nurses working within and outside RPAH and Concord liver clinics to update skills and knowledge | a. Tri-yearly meetings/seminars conducted with liver clinic nursing staff  
b. Yearly OPSCAs – viral hepatitis and liver transplant | a. Area Hepatitis Coordinator, RPAH HCV and Liver Transplant CNCs and Concord RN  
b. Area Hepatitis Coordinator, RPAH HCV and Liver Transplant CNCs | a. Start 2005  
b. Ongoing |
| 13. DHS to coordinate HCV initiatives and strategies within DHS            | a. Establishment of DHS HCV Implementation Committee  
b. Development and maintenance of clinical systems to improve identification and management of those at risk and with HCV  
c. Regular Hepatitis C clinic conducted within RPAH pharmacotherapies clinic | a. Harm Minimisation Manager; DHS  
b. Harm Minimisation Manager; DHS  
c. RPAH HCV CNC | a. 2005  
b. 2005  
c. Ongoing |
| 14. Broaden the range and accessibility of health services available to Aboriginal and Torres Strait Islander people and ensure that they are culturally appropriate | a. Partnerships between mainstream liver health services, Aboriginal sexual health clinics and Aboriginal Medical Services established  
b. Culturally sensitive HCV education strategy developed  
c. Explore the feasibility of developing an Aboriginal Health Education Officer (AHEO) traineeship to facilitate learning across the range of services | a. Area HAC, RPAH hepatology staff specialists  
Area Hepatitis Coordinator; Aboriginal Coordinator  
b. HCV Health Promotion Officer; Aboriginal Coordinator; Aboriginal Health Promotion Officers  
c. Harm Minimisation Manager; DHS; Clinical Projects Manager, DHS | a. 2005-2006  
b. 2005-2006  
c. 2005 |
| 15. Broaden the range and accessibility of health services available to people from culturally and linguistically diverse | a. Partnership with MHAHS and NGOs continues  
b. HCV services, programs and educational | a. Area Hepatitis Coordinator; HCV Health Promotion  
b. Area Hepatitis Coordinator; | a. Ongoing  
b. Ongoing |
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<td>communities and ensure that they are culturally appropriate</td>
<td>resources are appropriate and accessible to people from culturally and linguistically diverse communities.</td>
<td>HCV Health Promotion Officer</td>
<td></td>
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<tr>
<td><strong>16. Improve the capacity of regional and rural services to jointly manage patients with advanced liver disease</strong></td>
<td>a. Partnerships with services developed b. Education sessions conducted c. Clinicians attend RPA for upskilling d. Review conducted on need for outreach clinics</td>
<td>a. RPAH Hepatology Staff Specialists, RPAH HCV and Liver Transplant CNCs, Area Hepatitis Coordinator b. RPAH Hepatology Staff Specialists, RPAH HCV and Liver Transplant CNCs, Area Hepatitis Coordinator</td>
<td>a. Ongoing b. Ongoing c. Ongoing d. 2006</td>
</tr>
<tr>
<td><strong>17. Improve health and survival of people with advanced liver disease</strong></td>
<td>a. The latest evidence based strategies implemented</td>
<td>a. Gastroenterology and Liver Service Directors, Hepatology Staff Specialists, Liver Transplant and HCV CNCs</td>
<td>a. Ongoing</td>
</tr>
<tr>
<td><strong>18. To increase access to specialist services for people with newly acquired hepatitis C</strong></td>
<td>a. Australian Trial in Acute Hepatitis C ATAHC promoted to GPs b. Number of referrals c. Number of people in study</td>
<td>a. PHU, DHS, RPAH Hepatology Staff Specialists, RPAH HCV CNCs, Area Hepatitis Coordinator b. PHU, DHS, RPAH Hepatology Staff Specialists, RPAH HCV CNCs, Area Hepatitis Coordinator</td>
<td>a. 2007 b. Ongoing c. 2008</td>
</tr>
<tr>
<td><strong>19. Ensure resource allocation reflects emerging trends in service utilisation in ambulatory care and inpatients</strong></td>
<td>a. Database created to assist in measuring utilisation of services b. Electronic medical record linked to database c. Service utilisation monitored and annual reports on clinic activity, staffing and admissions distributed to HAC</td>
<td>a. EMR Project Officer and Committee b. EMR Project Officer and Committee c. Area Hepatitis Coordinator, Area HIV Coordinator, Clinical Managers</td>
<td>a. 2006 b. 2006 c. Ongoing</td>
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Area for Action 3:
To reduce the incidence of hepatitis C related stigma and discrimination in health settings.

Strategies developed in consultation with relevant services.
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</table>
| 1. Support the development of anti-discriminatory professional practice and organisational activities | a. Health care workers’ education includes:  
• Anti-discrimination legislation  
• NSW Health Discrimination policies  
• Values and attitudes that challenge stereotypes associated with injecting drug use and HCV  
• Standard universal precautions  
• Privacy legislation  
| b. Anti-discrimination information incorporated into all resources developed for HCV.  
| c. Health Care Workers have increased understanding on the benefits of harm minimisation strategies such as NSPs and methadone programs  
| d. Implementation of standard universal precautions within all health care settings  
| e. The confidentiality and privacy of people with HCV is protected  
| f. HCV testing only occurs after informed consent is received from the patient except in cases authorised by law  
| g. Increased number of injecting drug users accessing GPs and other mainstream health services; and NGOs for management of HCV | a. Area Hepatitis Coordinator, HCV Health Promotion Officer  
| b. Area Hepatitis Coordinator, HCV Health Promotion Officer  
| c. Area Hepatitis Coordinator, HCV Health Promotion Officer  
| d. Infectious Diseases  
| e. all  
| f. all  
| g. Harm Minimisation Manager, DHS | a. Ongoing  
| b. Ongoing  
| c. Ongoing  
| d. Ongoing  
| e. Ongoing  
| f. Ongoing  
| g. Ongoing |
**Area for Action 4:**

Improve monitoring and surveillance of hepatitis C in SSWAHS (Eastern Zone) and support multidisciplinary research capacity that incorporates basic virology, clinical research, epidemiology and social research.

Strategies developed in consultation with relevant services.
### Surveillance

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<tbody>
<tr>
<td>1. To improve identification of acute cases of HCV</td>
<td>a. Follow up form to GP for all notified cases of HCV and reminder letters, as per developed protocol, sent out b. GP awareness of notification of cases of 'acute viral hepatitis' improved by: • Articles in GP newsletters</td>
<td>a. PHU, Area Hepatitis Coordinator b. PHU, Area Hepatitis Coordinator</td>
<td>a. Ongoing b. Ongoing</td>
</tr>
<tr>
<td>2. To provide timely information on risk factors for acute transmission of HCV within Central Sydney</td>
<td>a. Detailed risk factor questionnaire and administer by telephone to all acute cases of HCV developed b. Support for the annual or more frequent administration of the NSP survey at Redfern and Canterbury REPIDU, with the aim of identifying risk behaviours in new IDUs and those with recent HCV sero-conversion.</td>
<td>a. PHU b. PHU, REPIDU</td>
<td>a. Ongoing b. Ongoing</td>
</tr>
<tr>
<td>3. To develop a useful and sustainable system for HCV surveillance in the PHU</td>
<td>a. Surveillance strategies evaluated after 3 months b. Networks and links with all HCV stakeholders in the area created c. A 12 month plan for HCV surveillance developed</td>
<td>a. PHU b. PHU c. PHU</td>
<td>a. Ongoing b. Ongoing c. 2005</td>
</tr>
<tr>
<td>4. To prevent HCV infection amongst intravenous drug users</td>
<td>a. Support given to REPIDU by providing epidemiological expertise with data collection.</td>
<td>a. PHU</td>
<td>a. Ongoing</td>
</tr>
</tbody>
</table>
### Strategies

<table>
<thead>
<tr>
<th>Strategies</th>
<th>Performance Indicators</th>
<th>Responsibility</th>
<th>Timeframe</th>
</tr>
</thead>
<tbody>
<tr>
<td>5. Reduce the risk of HCV transmission through 'skin penetration'</td>
<td>a. Reviewed regulatory system for skin penetration</td>
<td>a. b. PHU</td>
<td>a. Ongoing b. Ongoing</td>
</tr>
<tr>
<td></td>
<td>b. Consultation with local councils, education for skin penetration operators and compliance monitoring</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. To develop a useful and sustainable system to measure HCV disease outcomes amongst liver clinic patients</td>
<td>a. Database developed and linked to electronic medical record</td>
<td>a. RPAH liver clinic staff</td>
<td>a. Completed 2006</td>
</tr>
</tbody>
</table>

### Research

<table>
<thead>
<tr>
<th>Strategies</th>
<th>Performance Indicators</th>
<th>Responsibility</th>
<th>Timeframe</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Provide new information to improve clinical outcomes for people with chronic liver disease</td>
<td>a. Development of non-invasive ways to identify those with progressive liver disease</td>
<td>a. b. Principal Investigators at Liver Units, RPAH and Westmead Hospitals CCRE (Centre of clinical research excellence to improve outcomes in chronic liver disease)</td>
<td>a. 2008 b. Ongoing</td>
</tr>
<tr>
<td></td>
<td>b. Improvement in the health and survival of people with advanced stage cirrhosis</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Increase understanding of the pathogenesis of disease progression in HCV</td>
<td>a. NIH study completed</td>
<td>a. Principal Investigators at Liver Units, RPAH and Westmead Hospitals NIH grant</td>
<td>a. Completed 2006</td>
</tr>
<tr>
<td>3. Improve the understanding of the role of alternative therapies</td>
<td>a. Hep 573 study at RPAH completed</td>
<td>a. Principal Investigator, RPAH Liver Clinic staff</td>
<td>a. Completed 2007</td>
</tr>
<tr>
<td>4. Determine the benefits of treating acute HCV</td>
<td>a. Study completed</td>
<td>a. Principal Investigator, DHS, RPAH liver Clinic Staff</td>
<td>a. Completed 2008</td>
</tr>
<tr>
<td>5. Explore opportunities for funding grants to coordinate a range of social research activities with injecting drug use and HCV</td>
<td>a. Funding opportunities explored and applications developed, as appropriate</td>
<td>a. Harm Minimisation Manager, DHS; Area Hepatitis Coordinator b. Harm Minimisation Manager, DHS; Area Hepatitis Coordinator c. Harm Minimisation Manager, DHS; Area Hepatitis Coordinator</td>
<td>a. Ongoing b. Ongoing c. Ongoing</td>
</tr>
</tbody>
</table>
**Evaluation**

To evaluate the SSWAHS (Eastern Zone) Hepatitis C Strategy 2005-2008, a number of methods are required. Firstly, to monitor the overall impact of the implementation of the strategy, periodic review of the number of incident cases of Hepatitis C reported and review of risk behaviour is required. This information can be obtained from enhanced surveillance conducted by the Public Health Unit, estimation of injecting drug use, estimation of injecting drug use behaviour (e.g., sharing) along with other infectious diseases surveillance information.

To estimate impact on people already infected, data on the number of patients with hepatitis C related health problems available accessing health services such as liver clinics will be examined. Data will also be collected and analysed on factors that increase the risk of disease progression such as alcohol consumption and obesity.

Each of the strategic areas of the SSWAHS (Eastern Zone) Hepatitis C Strategy 2005-2008 have a number of performance indicators that need to be met. The achievement of these performance indicators will need to be monitored by the HAC. If the objectives are not substantially achieved then it is unlikely that there will be a reduction in the incidence or prevalence; or improvement in the management of Hepatitis C in SSWAHS (Eastern Zone).

A third level of evaluation which needs to be addressed is that of the degree to which the strategies outlined in this plan (and designed to achieve the strategic objectives) are actually implemented by the responsible services. Longer term outcomes cannot be achieved if intervention and service programs are not well designed and implemented.

A mid-point process evaluation is recommended, and a final review of relevant data at the end of the period covered by this plan. This will be the responsibility of the HAC.
Appendix

Appendix A

Hepatitis C Council of NSW

The Hepatitis C Council of NSW is an independent, community-based, non-government organisation funded by the NSW Health Department to provide information, support, referral and prevention services for people in NSW affected by hepatitis C.

CSAHS Hepatitis C Business Plan

The Plan was launched in 1999. A review of the Plan was completed in December 2000. The Plan has established a good foundation for action. New partnerships were developed and it increased awareness within some services that hepatitis C is a major public challenge.

The review found that the bulk of the strategies identified in the treatment and surveillance sections as well as the strategies related to HCW education were fully or partially implemented (increase in ability to provide treatment services, education of GPs etc). The strategies that were most difficult to implement were related to prevention (increase in NSP vending machines etc) this is mainly because of issues around injecting drug use. In SSWAHS (Eastern Zone) like elsewhere in Australia injecting drug use is the most common risk for hepatitis C transmission and despite Australia’s leading role in policy and action responses to hepatitis C, the difficulties in generating and sustaining responses in policy, prevention, treatments and vaccines needs to be acknowledged.
Commonwealth Department of Health and Ageing: Return On Investment In Needle And Syringe Programs In Australia 2002

Background
Needle and syringe programs are programs that distribute needles and syringes either free or with minimal charge. In 2000 the Commonwealth Department of Health and Ageing commissioned a report to assess the effectiveness of needle and syringe programs in preventing the transmission of hepatitis C and HIV in Australia from 1991 to 2000, and to use the findings to calculate a monetary figure for the return on investment of these programs. The report based its assessments of the effectiveness of Australian needle and syringe programs on an analysis of the success of international needle and syringe programs on hepatitis C and HIV infection rates. Estimates were then made of the number of cases of hepatitis C and HIV that were avoided as a result of needle and syringe programs in Australia between 1991-2000.

Main Findings
1. There is strong evidence of the effectiveness of needle and syringe programs in reducing transmission of HIV and to a lesser extent hepatitis C in reducing transmission.
2. The savings in cost of hepatitis C and HIV treatment, (the financial returns on investment) resulting from needle and syringe programs have been enormous.
3. The cost of needle and syringe programs is justified purely on economic grounds. However, the social impacts of reduced transmissions are far greater and were not measured in the report. However, the report assesses the effect of these diseases on the quality of life of people infected.
4. The public health expenditure on the needle and syringe program is comparatively small in relation to the size of the total public health budget, and resulted in huge financial returns on that investment.

Effectiveness of Needle and Syringe Programs Across Australia
Hepatitis C
Between 1988 and 2001 it was estimated that 21,000 hepatitis C infections were prevented across Australia among people who inject, due to the operation of needle and syringe programs. Consequently it is estimated that 16,000 cases of hepatitis C will have been prevented and 90 hepatitis C related deaths avoided by 2010.

HIV
Between 1988 and 2000 it was estimated that 25,000 HIV infections were prevented among people who inject due to the introduction of needle and syringe programs. This will have resulted in the prevention of 4,500 deaths by 2010.

Financial Costs of Needle and Syringe Programs Across Australia
Between 1991 and 2000 an estimated $141 million was spent on needle and syringe programs by Australian governments.

Treatment Costs Avoided as a Result of Needle and Syringe Programs
Hepatitis C
Based on 21,000 hepatitis C cases being avoided between 1988-2000, it is estimated that $783 million in hepatitis C treatment costs will be avoided due to the introduction of needle and syringe programs.

HIV
Based on 25,000 HIV cases being avoided between 1988-2000, it is estimated that $7,025 million in HIV treatment costs will be avoided by the introduction of the needle and syringe programs.

There are two main reasons for the greater impact of needle and syringe programs on HIV than hepatitis C.
1. HIV has a much greater mortality rate than hepatitis C, and therefore prevention of infections results in many more lives saved.
2. The costs of treatment for HIV are much higher than for hepatitis C so the treatment costs avoided as a result of reduced infections are much higher.
### Table 9: Overview of State/Territory funded Needle and Syringe Programs 1999-2000

<table>
<thead>
<tr>
<th>State/Territory</th>
<th># Of Needle &amp; Syringe Programs</th>
<th># Of Syringes Distributed</th>
<th>Approximate Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACT</td>
<td>35</td>
<td>593,000</td>
<td>$539,000</td>
</tr>
<tr>
<td>NSW</td>
<td>797</td>
<td>11,566,000</td>
<td>$10,290,000</td>
</tr>
<tr>
<td>NT</td>
<td>19</td>
<td>604,000</td>
<td>$373,000</td>
</tr>
<tr>
<td>QLD</td>
<td>932</td>
<td>10,300,000</td>
<td>$1,678,000</td>
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<tr>
<td>SA</td>
<td>151</td>
<td>3,018,000</td>
<td>$830,000</td>
</tr>
<tr>
<td>TAS</td>
<td>88</td>
<td>1,381,000</td>
<td>$622,000</td>
</tr>
<tr>
<td>VIC</td>
<td>215</td>
<td>6,177,000</td>
<td>$4,767,000</td>
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<tr>
<td>WA</td>
<td>80</td>
<td>3,209,000</td>
<td>$3,576,000</td>
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### Table 10: Hepatitis C: notifications by sex, persons of all ages, NSW 1994 to 2003

<table>
<thead>
<tr>
<th></th>
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<td>Number</td>
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<td></td>
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<td>0 to 14 years Males</td>
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<td>67</td>
<td>45</td>
<td>72</td>
<td>42</td>
<td>73</td>
<td>44</td>
<td>33</td>
<td>22</td>
<td>18</td>
</tr>
<tr>
<td>Females</td>
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<td>28</td>
<td>45</td>
<td>52</td>
<td>23</td>
<td>38</td>
<td>20</td>
<td>17</td>
<td>23</td>
<td>10</td>
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<tr>
<td>Persons</td>
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<td>99</td>
<td>95</td>
<td>130</td>
<td>66</td>
<td>115</td>
<td>64</td>
<td>50</td>
<td>46</td>
<td>28</td>
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<tr>
<td>15 to 44 years Males</td>
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<td>3649</td>
<td>3842</td>
<td>3699</td>
<td>3804</td>
<td>4884</td>
<td>4684</td>
<td>4570</td>
<td>3313</td>
<td>2528</td>
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<td>2242</td>
<td>2037</td>
<td>2012</td>
<td>2128</td>
<td>2252</td>
<td>2232</td>
<td>2587</td>
<td>1995</td>
<td>1505</td>
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<td>Persons</td>
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<td>5924</td>
<td>5930</td>
<td>5763</td>
<td>5981</td>
<td>7239</td>
<td>6934</td>
<td>7173</td>
<td>5324</td>
<td>4047</td>
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<td>45+ years Males</td>
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<td>524</td>
<td>572</td>
<td>637</td>
<td>724</td>
<td>794</td>
<td>868</td>
<td>1009</td>
<td>870</td>
<td>775</td>
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<td>Females</td>
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<td>338</td>
<td>407</td>
<td>393</td>
<td>418</td>
<td>436</td>
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<td>Persons</td>
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<td>864</td>
<td>982</td>
<td>1031</td>
<td>1146</td>
<td>1248</td>
<td>1295</td>
<td>1480</td>
<td>1340</td>
<td>1190</td>
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<tr>
<td>All ages Males</td>
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<td>4240</td>
<td>4459</td>
<td>4408</td>
<td>4570</td>
<td>5751</td>
<td>5596</td>
<td>5612</td>
<td>4205</td>
<td>3321</td>
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<tr>
<td>Females</td>
<td>2870</td>
<td>2608</td>
<td>2489</td>
<td>2457</td>
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<td>2726</td>
<td>2678</td>
<td>2897</td>
<td>2484</td>
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<td>Persons</td>
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<td>6887</td>
<td>7007</td>
<td>6924</td>
<td>7193</td>
<td>8602</td>
<td>8293</td>
<td>8703</td>
<td>6710</td>
<td>5265</td>
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<tr>
<td>Crude rate 0 to 14 years Males</td>
<td>10.4</td>
<td>10.0</td>
<td>6.7</td>
<td>10.7</td>
<td>6.2</td>
<td>10.7</td>
<td>6.4</td>
<td>4.8</td>
<td>3.2</td>
<td>2.6</td>
</tr>
<tr>
<td>Females</td>
<td>6.2</td>
<td>4.4</td>
<td>7.0</td>
<td>8.1</td>
<td>3.6</td>
<td>5.9</td>
<td>3.1</td>
<td>2.6</td>
<td>3.5</td>
<td>1.5</td>
</tr>
<tr>
<td>Persons</td>
<td>8.9</td>
<td>7.6</td>
<td>7.2</td>
<td>9.9</td>
<td>5.0</td>
<td>8.6</td>
<td>4.8</td>
<td>3.7</td>
<td>3.4</td>
<td>2.1</td>
</tr>
<tr>
<td>15 to 44 years Males</td>
<td>305.2</td>
<td>260.9</td>
<td>273.1</td>
<td>262.4</td>
<td>269.6</td>
<td>344.9</td>
<td>328.8</td>
<td>318.2</td>
<td>229.4</td>
<td>174.4</td>
</tr>
<tr>
<td>Females</td>
<td>180.5</td>
<td>162.6</td>
<td>146.5</td>
<td>144.0</td>
<td>152.1</td>
<td>160.2</td>
<td>158.0</td>
<td>181.7</td>
<td>139.7</td>
<td>105.0</td>
</tr>
<tr>
<td>Persons</td>
<td>245.2</td>
<td>213.3</td>
<td>212.0</td>
<td>205.3</td>
<td>212.8</td>
<td>256.6</td>
<td>244.4</td>
<td>250.8</td>
<td>185.3</td>
<td>140.4</td>
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<tr>
<td>45+ years Males</td>
<td>59.5</td>
<td>53.6</td>
<td>57.1</td>
<td>61.9</td>
<td>68.5</td>
<td>73.3</td>
<td>78.2</td>
<td>88.6</td>
<td>74.7</td>
<td>65.2</td>
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<tr>
<td>Females</td>
<td>34.0</td>
<td>31.6</td>
<td>37.2</td>
<td>35.1</td>
<td>36.4</td>
<td>37.1</td>
<td>35.4</td>
<td>38.1</td>
<td>37.0</td>
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<tr>
<td>Persons</td>
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<td>42.2</td>
<td>46.9</td>
<td>48.0</td>
<td>52.0</td>
<td>55.2</td>
<td>56.0</td>
<td>62.4</td>
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<td>48.2</td>
</tr>
<tr>
<td>All ages Males</td>
<td>162.2</td>
<td>139.3</td>
<td>144.7</td>
<td>141.5</td>
<td>145.3</td>
<td>180.8</td>
<td>173.8</td>
<td>171.9</td>
<td>127.6</td>
<td>100.0</td>
</tr>
<tr>
<td>Females</td>
<td>94.2</td>
<td>84.6</td>
<td>79.7</td>
<td>77.7</td>
<td>80.4</td>
<td>84.4</td>
<td>82.0</td>
<td>92.8</td>
<td>74.4</td>
<td>57.3</td>
</tr>
<tr>
<td>Persons</td>
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<td>112.4</td>
<td>112.9</td>
<td>110.3</td>
<td>113.5</td>
<td>134.2</td>
<td>127.9</td>
<td>132.4</td>
<td>101.1</td>
<td>78.7</td>
</tr>
<tr>
<td>Age-stand rate Males</td>
<td>156.7</td>
<td>134.9</td>
<td>140.6</td>
<td>138.2</td>
<td>143.1</td>
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<td>172.6</td>
<td>171.6</td>
<td>127.6</td>
<td>100.4</td>
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<td>Persons</td>
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<td>110.4</td>
<td>108.3</td>
<td>112.2</td>
<td>133.3</td>
<td>127.8</td>
<td>132.9</td>
<td>101.9</td>
<td>79.4</td>
</tr>
</tbody>
</table>
### Table II; Hepatitis C: notifications by health area, persons of all ages, NSW 2001 to 2003

<table>
<thead>
<tr>
<th>Health Area</th>
<th>Number</th>
<th>Crude rate per 100,000 population</th>
<th>Age-standardised rate per 100,000 population</th>
<th>LL 95% CI</th>
<th>UL 95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sydney South West</td>
<td>4931</td>
<td>126.5</td>
<td>121.3</td>
<td>117.9</td>
<td>124.8</td>
</tr>
<tr>
<td>South Eastern Sydney &amp; Illawarra</td>
<td>3178</td>
<td>92.6</td>
<td>89.5</td>
<td>86.4</td>
<td>92.7</td>
</tr>
<tr>
<td>Sydney West</td>
<td>3343</td>
<td>105.5</td>
<td>103.0</td>
<td>99.5</td>
<td>106.5</td>
</tr>
<tr>
<td>Northern Sydney &amp; Central Coast</td>
<td>1853</td>
<td>56.7</td>
<td>57.1</td>
<td>54.5</td>
<td>59.7</td>
</tr>
<tr>
<td>Hunter &amp; New England</td>
<td>1776</td>
<td>72.2</td>
<td>78.9</td>
<td>75.2</td>
<td>82.6</td>
</tr>
<tr>
<td>North Coast</td>
<td>1608</td>
<td>117.1</td>
<td>136.4</td>
<td>129.6</td>
<td>143.3</td>
</tr>
<tr>
<td>Greater Southern</td>
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<td>62.7</td>
<td>69.4</td>
<td>64.8</td>
<td>74.2</td>
</tr>
<tr>
<td>Greater Western</td>
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<td>97.7</td>
<td>91.1</td>
<td>104.8</td>
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<tr>
<td>Metropolitan</td>
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<td>92.9</td>
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<td>94.5</td>
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<td>Inner regional</td>
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<td>89.4</td>
<td>99.8</td>
<td>96.6</td>
<td>103.1</td>
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<td>Outer regional &amp; remote</td>
<td>1130</td>
<td>70.9</td>
<td>82.6</td>
<td>77.8</td>
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<td>NSW</td>
<td>20678</td>
<td>103.9</td>
<td>104.7</td>
<td>103.2</td>
<td>106.1</td>
</tr>
</tbody>
</table>

**Note:** Rates were age-adjusted using the Australian population as at 30 June 2001. LL/UL 95%CI = lower and upper limits of the 95% confidence interval for the point estimate. Statistical Local Areas were assigned to the Accessibility-Remoteness Index of Australia (ARIA).

**Source:** Communicable Diseases Branch, Notifiable Diseases Database and ABS population estimates (HOIST). Centre for Epidemiology and Research, NSW Department of Health.
Hepatitis C age-standardised notification rates all NSW and metropolitan AHSs 1996-2004
Appendix D

Transmission

Sharing injecting drug equipment
Sharing injecting equipment is the most common way of becoming infected with hepatitis C in Australia. Syringes, hands, needles, tourniquets, swabs, water; filters or spoons can transmit hepatitis C and other viruses. It is possible for a person with hepatitis C to be reinfected with a different strain (genotype) of hepatitis C.

Tattoos, body piercing and skin penetration
Hepatitis C can be transmitted through unsterile tattooing and body piercing equipment, including tattooing inks.

Household transmission
Wherever blood to blood contact happens, transmission of hepatitis C can occur. Sharing razor blades, toothbrushes and personal hygiene items can potentially transmit hepatitis C. Hepatitis C is not transmitted by touching, kissing, hugging or closeness. Hepatitis C is not present in saliva so cups, plates, utensils and other household items can be considered safe. However, washing and general cleaning of these household items can protect from many other illnesses and should remain a part of every household’s common hygiene practice.

Occupational transmission
The risk of healthcare workers contracting hepatitis C through needlestick or sharp instrument injuries is low (less than 10%), as is the risk of transmission through unsterile medical procedures given the introduction of standard infection control procedures.

Sexual activity
Hepatitis C is rarely transmitted through sexual activity. Transmission during sex occurs only when infected blood is present. The risk of hepatitis C transmission is greater during rough sex or unprotected anal sex, or any other activity where blood is present. Even very small injuries or tears to body tissues causing minute or invisible amounts of blood, will increase the risk of transmission. To reduce the risk of infection, water-based lubricants, condoms, latex gloves and/or dams are recommended. There have been no recorded cases of transmission through menstrual blood.

Mother to baby
Mother to baby transmission of hepatitis C can occur during pregnancy and childbirth. When a mother has hepatitis C, the baby is born with its mother’s antibodies. These maternal antibodies clear naturally over time and only 1-5% of babies born to mothers with hepatitis C will actually get the virus. This is dependant on viral load, coinfection with HIV and the use of forceps during delivery. Hepatitis C is not transmitted through breastmilk, although cracked nipples can bleed and could lead to infection.
Appendix E

Combination Therapy

Therapy for hepatitis C has improved considerably over the past 4 years. Interferon (IFN) has been used in a variety of doses on its own and in combination with ribavirin. At the present time (January 2004), the optimal regimen appears to be a 24- or 48-week course of the combination of pegylated alpha interferon and ribavirin. Alpha interferon is a host protein that is made in response to viral infections and has natural antiviral activity. Peginterferon is alpha interferon that has been modified chemically by the addition of a large inert molecule of polyethylene glycol. Pegylation changes the uptake, distribution, and excretion of interferon, prolonging its half-life. Peginterferon can be given once weekly and provides a constant level of interferon in the blood, whereas standard interferon must be given several times weekly and provides intermittent and fluctuating levels. Peginterferon is more active than standard interferon in inhibiting hepatitis C and yields higher sustained response rates with similar side effects. Ribavirin (a guanine analogue) is an antiviral agent. Its actual mechanism of action is unclear although it is a known RNA genome mutagen.

Peginterferon is given subcutaneously. Ribavirin is an oral medication, given twice a day in 200-mg capsules for a total daily dose based upon body weight.

Combination therapy leads to rapid improvements in serum ALT levels and disappearance of detectable hepatitis C RNA in up to 70 percent of patients. Long-term response occurs only if hepatitis RNA disappears during therapy and stays undetectable once therapy is stopped.

The optimal duration of treatment varies depending hepatitis C genotype. People with genotypes 2 and 3 have a high rate of response to combination treatment (70 to 80 percent), and a 24-week course of combination therapy yields results equivalent to those of a 48-week course. In contrast, people with genotype 1 have a lower rate of response to combination therapy (40 to 45 percent), and a 48-week course yields a significantly better sustained response rate. Therefore it is crucial to know the hepatitis C genotype.

The optimal dose of ribavirin is also important. For people with genotype 1, the full dose of ribavirin (1,000 or 1,200 mg daily depending on body weight) appears to be needed for an optimal response.

Side effects

Side effects are common. The most common side effects are:

- Fatigue
- Mood changes – irritability, anxiety
- Flu like symptoms - muscle aches, low-grade fever
- Headaches
- Anorexia, nausea and vomiting
- Skin irritation at the injection site
- Weight loss
- Depression
- Mild bone marrow suppression
- Hair loss

Most side effects are mild to moderate but can be difficult for people to tolerate. Depression can be severe. Many people are fearful of the side effects and therefore delay or chose not to have treatment.

Ribavirin also causes side effects. The most common side effects of ribavirin are:

- anemia (caused by a dose-related hemolysis of red cells)
- fatigue and irritability
- itching
- skin rash
- nasal stuffiness, sinusitis, and cough

More significant but less common side effects combination are:

- autoimmune disease (especially thyroid disease)
- severe bacterial infections
- severe thrombocytopenia
- severe neutropenia
- seizures
- depression and suicidal ideation or attempts
- retinopathy (microhemorrhages)
- hearing loss and tinnitus
- possible birth defect (use of contraception by both partners is mandatory)
Who should be treated?
Not everyone with hepatitis C requires treatment. People who are hepatitis C RNA positive with elevated serum aminotransferase levels (ALT), evidence of chronic hepatitis on liver biopsy (fibrosis and or moderate to severe degrees of inflammation), and with no contraindications, should be offered treatment.

People with cirrhosis found through liver biopsy without have signs of decompensation should also be offered treatment.

People with both hepatitis C and HIV infection should also be offered therapy for hepatitis C as long as there are no contraindications. End-stage liver disease has become an increasingly common cause of death in HIV-positive persons.

The best treatment for people with acute hepatitis C is still under investigation. RPAH will take part in a trial in 2004.

Liver Biopsy
All patients require a liver biopsy prior to treatment this usually involves a day stay admission.

New Treatments
New antiviral agents for hepatitis C including specific inhibitors of hepatitis C-derived enzymes such as protease, helicase, and polymerase inhibitors are undergoing extensive research. Research is also investigating drugs that inhibit other steps in hepatitis C replication, cytoprotective agents, ribozymes, and antisense oligonucleotides
End note


2 Greg Dore verbal correspondence. Australian National Council on AIDS, Hepatitis C and Related Diseases Hepatitis C Sub-Committee Hepatitis C Virus Projections Working Group


6 Sylvestre D. Treating Hepatitis C in Drug Injectors. 4th Australasian Hepatitis C Conference Proceedings. August 31-Sept 2, 2004


8 Lindsay J, Smith A, Rosenthal D. Secondary Students, HIV/AIDS and Sexual Health. Melbourne: Centre for the Study of Sexually Transmissible Diseases, Faculty of Health Sciences, La Trobe University, 1997.


14 Australian Bureau of Statistics, Prisoners in Australia.


16 DHS draft report for the Sydney South West Area Health Service (Eastern Zone) (CSAHS) Aboriginal Health Strategic Plan 2004-2006


20 CSAHS Public Health Unit, Summary of notifiable diseases in 2003 (CSAHS residents)

22 The Cancer Council NSW.


24 Commonwealth Department of Health and Aged Care, National Hepatitis C Strategy 1999-2000 to 2003-2004

25 The Centers for Disease Control and Prevention (CDC). 2003

