

Dental Health and Hepatitis C

Introduction

Hepatitis means inflammation of the liver. There are many causes for this inflammation including viruses, alcohol and other drugs. Over the past decade the hepatitis C virus (HCV) has been Australia's most commonly notified infectious disease. In 2005, it was estimated that approximately 264,000 people living in Australia had been exposed to the virus and there were 9,700 new cases.¹ The virus can cause long-term liver problems, including cirrhosis and hepatocellular carcinoma (HCC). However, there is still widespread misunderstanding about HCV – how it is transmitted, infectivity, who is at risk, management of the condition and prognosis.

Before testing for the hepatitis C virus was developed in 1989, it became apparent that some people receiving blood transfusions and blood products were contracting hepatitis, despite the fact that blood and blood products were screened for hepatitis B (HBV) and hepatitis A (HAV). The majority of these cases, known as non A- non B-hepatitis or post-transfusion hepatitis, have since been identified as hepatitis C (HCV).²

In providing effective dental care to people infected with the hepatitis C virus the first step is an understanding of the virus and the potential health and dental health problems associated with hepatitis C infection. It is also important that issues of infection control, prevention of disease transmission and the broader health implications of providing dental treatment for people with serious liver dysfunction are properly understood.

The virus

Hepatitis C is a ribonucleic acid (RNA) virus, belonging to the flavivirus family.³ Genetically distinct viral groups have evolved, with nine different genotypes of hepatitis C identified⁴ and approximately 40 different subtypes. There are many predictive factors associated with the effectiveness of antiviral treatment. The hepatitis C genotype is the most significant factor.

Transmission

Hepatitis C is a blood-borne virus. It is transmitted when infected blood enters the bloodstream of another person. 80% of Australian-born people with hepatitis C were exposed to the virus through unsterile injecting drug use.⁵ Because many people with hepatitis C do not realise they have the virus, it can be spread unknowingly.

The main modes of transmission are:

- Reusing syringes and needles, and contact with other injecting equipment such as tourniquets, spoons, water, surfaces and fingers contaminated with blood. Blood contact may also take place with reused snorting devices⁶
- Exposure through unsterile tattooing or body piercing
- Exposure via a penetrating injury (needlestick)⁷
- Receipt of a blood transfusion or blood product prior to 1990 – blood transfused after February 1990 is generally considered to be safe in Australia
- In many developing countries, where unscreened blood and blood products are still being used, the major means of transmission are unsterilised injection equipment and unscreened blood transfusions. In addition, people who use traditional scarification and circumcision practices are at risk if they use or reuse unsterilised tools⁸

The risk of transmitting hepatitis C via sexual contact is considered extremely low. It may occur if there is blood-to-blood contact during sex (for example, 'rough' sex that could rupture the lining of the vaginal wall, anus or penis, or sex during menstruation). There is also evidence to suggest that transmission rates may be higher if a person with hepatitis C is co-infected with HIV or other sexually transmissible infections.⁹ The probability of transmission may depend on the infectivity (viral load levels) of the infected person.

Transmission of the hepatitis C virus by saliva alone is a remote possibility unless the saliva is contaminated with blood.¹⁰ Household transmission (e.g. via razors or toothbrushes) is considered to be extremely rare. Nevertheless, where the possibility of blood contact exists, these items should not be shared.¹¹ There is no risk of viral transmission via cups, plates or other eating utensils. There is a very small risk of vertical transmission between mothers and babies. The risk is approximately 5%^{12,13} and may be particularly likely in cases where the mother has a high viral load or coinfection with HIV.¹⁴

Impact of hepatitis C

Hepatitis C affects people in different ways. The vast majority of people with hepatitis C report no symptoms associated with the initial (acute) phase of infection. However, around 10% will be acutely



How is hepatitis C different from hepatitis A and B?

Virus Type	Profile	Transmission	Vaccination	Treatment	Notifiable
Hep A (HAV)	Usually a mild disease that does not become chronic.	Orally via food and/or water contaminated with faecal particles from an infected person. Occasionally via oral/anal sexual contact. Rarely through blood-to-blood contact.	Yes	No specific treatment	Yes
Hep B (HBV)	Can be mild, severe, acute or chronic. Less than 5% of adult HBV infections become chronic.	Most cases of chronic HBV infection worldwide occur through mother-to-child transmission. In Australia, most new cases of HBV are acquired through sexual contact with an infected person. Also transmitted through contaminated injecting equipment.	Yes	Antiviral therapy and post-exposure prophylaxis (PEP) are available.	Yes
Hep C (HCV)	Hepatitis C is likely to become a chronic condition in 70 to 80% of infected people, with 10% developing severe liver disease.	Transmitted when infected blood enters the bloodstream of another person (blood-to-blood contact). Unlike hepatitis B, it is very rare for hepatitis C to be transmitted by sexual activity or through mother-to-child transmission. Hepatitis C is not transmitted by food or water contamination.	None for HCV. To prevent the complications of co-infection, people with hepatitis C should be vaccinated against hepatitis A and B.	Antiviral therapy.	Yes

***Two other hepatitis viruses, D (or delta) and E, have been isolated but both are uncommon in Australia.**

ill for several weeks or months soon after infection. During the acute phase, levels of the virus in the blood rise dramatically until the body's immune response starts producing antibodies. Although these antibodies fight the virus, around 70 to 80% of people infected will develop a long-term (chronic) infection and could transmit the virus to others. Some people develop symptoms of liver disease, including, lethargy, nausea, headaches, depression, aches and pains in joints and muscles, and discomfort in the upper abdominal area. After many years the chronic infection may develop into serious liver illness, such as cirrhosis, liver failure and liver cancer.

Hepatitis C is now the most common reason for liver transplantation in Australia. (See 'Chronic hepatitis C illness natural history' chart opposite.)

Testing

When assessing someone with possible hepatitis C, an HCV antibody test is performed first. A positive test indicates exposure to HCV, but does not indicate active infection.¹⁵ However, the presence of a positive antibody test and an elevated ALT level (indicating some degree of liver damage), particularly in the setting of risk factors for transmission, is generally sufficient to diagnose active HCV infection. In individuals with persistently normal ALT levels a PCR (polymerase chain reaction), or other test to determine the presence of HCV RNA, should be carried out to determine if viraemia (active infection) is present, as some people in this situation may have cleared the infection. When infection is established, a liver biopsy may be performed to determine the severity of inflammation and fibrosis and to guide treatment decisions.

HCV dental health management

Up to 60% of people with chronic hepatitis C infection will develop some form of liver damage and experience symptoms that include oral health problems. Dental health professionals, including all members of the dental health team (dentists, hygienists, therapists and dental assistants), need to be aware of the precautions necessary in treating people with hepatitis C. Knowledge of preventive programs to reduce dental pathology and maximise oral health for those infected is also important.¹⁰ In any shared-care situation it is important to ensure that patients do not fall between services and miss out on the proper advice, support, investigation and treatment. It is also important that patient confidentiality be respected.

Acute hepatitis C

In the majority of individuals exposed to hepatitis C, the onset of infection is unrecognised because acute hepatitis C is clinically mild and often not apparent. It is symptomatic in 10 to 20% of cases and the clinical features resemble those of other forms of acute viral hepatitis: malaise, nausea, abdominal discomfort, pale stools, dark urine and jaundice. These symptoms are usually mild, but they can be variable.¹⁶

Chronic hepatitis C

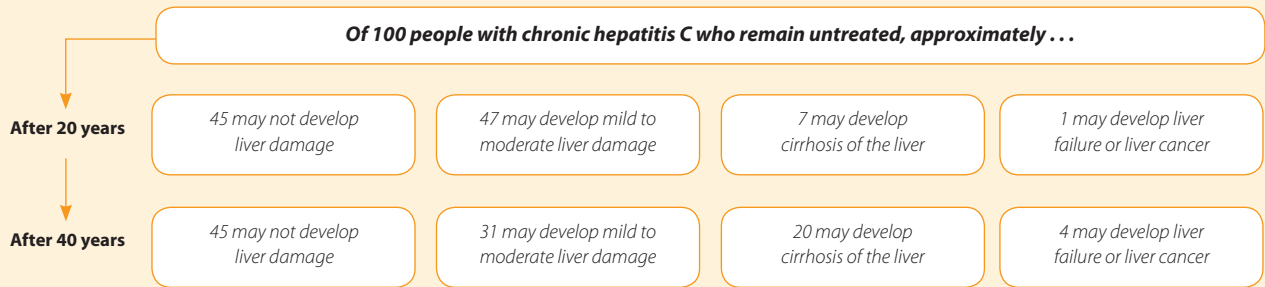
Between 70 and 80% of all patients infected with hepatitis C develop chronic infection, which is defined as persisting for more than six months, usually with some evidence of hepatitis. The term 'chronic' relates specifically to the duration of infection, not to the severity of the disease. Chronic hepatitis C leads to a wide spectrum of liver disease, ranging from minimal damage to cirrhosis, liver cell cancer and liver failure.¹⁷

Disease progression of hepatitis C.

Hepatitis C outcomes (Natural History):
 Factsheet, Hepatitis C Council of NSW April 2004

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

This chart shows the different outcomes that may occur with chronic hepatitis C. It does not aim to show individual outcome (prognosis). Personal factors such as alcohol intake, age when HCV was acquired and current level of liver inflammation may influence a person's prognosis and individuals are advised to seek medical advice regarding their own situation.



Patients with chronic hepatitis C can experience tiredness and lethargy, often to the point of exhaustion after a normal day's work. Once cirrhosis has developed, other symptoms may occur including: abdominal discomfort and swelling, nausea and anorexia, fluid retention, and signs of coagulation disorder such as bruising and nose bleeds.

A positive hepatitis C diagnosis can cause psychological distress, particularly if the test result is unexpected. It is quite common for people with a chronic infection to experience depression, as well as a considerable amount of fear, anger and anxiety. This can be compounded by the fact that there is considerable misinformation about hepatitis C in the general community. For many people a diagnosis of hepatitis C means they have to recall something they may have done many years ago, such as injecting drug use. They may never have discussed this activity with their family, partner or friends.

In addition, the physical symptoms of chronic hepatitis C infection can lead to depression and mood swings, anxiety about the future, social isolation, loss of self-esteem, the development of mild paranoia and acute stress regarding the decline of control over one's life.¹⁸ This can be compounded by antiviral treatment, which can produce psychological side-effects, including mood swings and severe depression. Many people with hepatitis C experience discrimination in the general community. Furthermore, people with hepatitis C have reported discrimination when interacting with health professionals, which can have a considerable impact on the quality of care received. Under Australian Commonwealth law, discriminating against someone on the grounds of infectious disease is illegal. (See Discrimination, page 4.)

Dental health care

An effective preventive care programme for a person diagnosed with hepatitis C is often the most important immediate goal for the dental practitioner. There is evidence to suggest that people with hepatitis C are prone to tooth decay, suffer loss of self-esteem due to poor oral aesthetics and have difficulty with diet due to poor oral health.¹⁹

Xerostomia

Recent studies have shown an increased incidence of dry mouth or xerostomia in patients with hepatitis C. In particular, patients on

antidepressants may display this symptom.^{19,20} The role of saliva includes cleaning, lubrication, chemical protection and antibody and cell-mediated immune defence. Its depletion can lead to rapid and widespread destruction of the dentition, severely affecting a patient's quality of life.

Indicators of reduced saliva levels include:

- Patients complaining of dry mouth, particularly at night
- Sore oral tissues, particularly tongue, gums and cheeks
- Frothy, foamy and stringy saliva
- Difficulty talking, eating and swallowing
- Halitosis
- Dental decay and tooth sensitivity

The management of xerostomia is aimed at prevention of damage to the dentition and often involves simple but effective treatment.

Initial management strategies include:

- Saliva stimulation by sialagogues such as sugar-free chewing gum and increased fluid intake to reduce the effects of dehydration
- Preventive dental care such as improving oral hygiene to remove the dental plaque responsible for much of the damage. Dietary analysis and advice is important to reduce both the frequency and amount of simple and complex carbohydrate intake. Application of home fluoride, either as a rinse or gel, or the use of a remineralising product is essential. Changing to non-foaming dry mouth toothpaste will improve oral comfort
- Saliva replacement with frequently sipped water or artificial saliva is essential in providing symptomatic relief by lubricating the oral cavity. Saliva replacements that stimulate the protective functions of saliva, when incorporated with appropriate preventive care, offer the greatest protection against the breakdown of oral hard and soft tissues

Cirrhosis

In patients with cirrhosis, the most significant problem in terms of dental care is the likelihood of prolonged bleeding following dental procedures, caused by a lack of coagulation factors and thrombocytopenia (a common cause of bleeding disorders). Consequently, any invasive dental treatment (extractions, surgery and extensive periodontal treatment) should be undertaken

after consultation with the appropriate medical specialists. Simple treatment may be carried out utilising agents to establish local control of bleeding (for example, topical tranexamic acid mouthwash).¹⁰

There is a small but significant risk for a patient with severe cirrhosis, that drug interactions and toxicity will burden an already stressed liver. The use of octapressin as a vasoconstrictor, for example, is contraindicated in someone with extensive liver dysfunction. Prescribing medications that are processed or excreted in the liver is also potentially hazardous.

Drugs such as metronidazole, tetracyclines, erythromycin and paracetamol are contraindicated for people suffering liver failure.¹⁰

HCV therapy

In addition to medical complications arising from liver disease, problems in delivering dental care also exist for those undergoing antiviral therapy. Drugs such as interferon, ribavirin and corticosteroids may lower resistance to infection and cause bleeding, so non-urgent invasive dental treatment should be postponed until therapy has ceased. Urgent dental treatment needs to be undertaken in consultation with the appropriate medical specialists.¹⁰

Sporadic dental care will not address the oral health needs of many people suffering symptoms of hepatitis C infection. If oral health and prognosis for dental treatment is to be improved, then oral care treatment plans incorporating long-term prevention components need to be developed for each patient, so that the influences of medication and the effects of infection with a chronic virus can be overcome.

The use of topical fluorides, oral hygiene instruction, dietary counselling and regular recall should be combined into a comprehensive treatment protocol for patients with hepatitis C infection.¹⁹

When a patient is a current or past drug user

There are a number of issues that can affect dental health care and treatments for people who are either currently using opiates or who have used these substances in the past. It is important to remember that many people may be unwilling to disclose their drug treatments due to experiences of discrimination.

- **Detoxification**
Patients who are detoxing, in particular, those undergoing 'cold turkey', may be likely to experience tooth pain very quickly due to the removal of the opiate substance. The onset

of this pain may be rapid and severe because recent opiate use has masked any pain caused by dental health problems.

- **Methadone treatments**
People who have been on long-term methadone treatment or who have undertaken this treatment in the past, may be likely to have poor dental health due to the high sugar levels in methadone syrups.
- **'Sip and Swish'**
In order to minimise the effects on dental health from methadone treatment, it is often recommended that people rinse their mouths with water immediately after taking a methadone dose.
- **Pain control and anaesthesia**
Care should be exercised regarding issues of pain control and anaesthesia for current and past drug users. Issues of drug tolerance, drug effectiveness and contraindications are all relevant. In order to ensure appropriate treatment, it is recommended that the attending clinician seek advice from a skilled practitioner in the local drug and alcohol facility.

Discrimination

Australian Commonwealth law prohibits discrimination against someone with an infectious disease, unless the discrimination can be shown to be necessary to protect public health. In addition, most states and territories have laws in the same terms as the Commonwealth law.

Hepatitis C is a highly stigmatised condition and many people living with the disease experience discrimination. The Anti-Discrimination Board of NSW found that discrimination in health care settings may take many forms and results in unfair treatment of patients.²¹

Behaviours which reflect stigmatisation towards a patient should be avoided. They can reduce the standard of health care received and lower the quality of life for people with hepatitis C.

Discriminatory behaviours in this setting may include²²:

- Refusal to provide services
- Discriminatory treatment in the course of providing a service
- Lack of pre- and post-test counselling
- Breaches of confidentiality and disclosure issues, even among health care workers
- Poor-quality information about hepatitis C disease progression, treatment and prevention
- Assumptions about how people acquire hepatitis C
- Assumptions about people's past or present drug use

Avoiding discrimination

Health care workers should respect the rights of people with hepatitis C, regardless of how they were infected. Everyone living with hepatitis C should have access to care and services, regardless of transmission route, gender, race, culture, sexual orientation or lifestyle issues (such as drug use).

Discrimination and stigmatising behaviours can be avoided by²³:

- Continuing health care worker education
- Ensuring standard infection-control procedures are followed, thus reducing the need for disclosure or differential treatment
- Ensuring a person's privacy and confidentiality are protected
- Treating all patients with respect and compassion

Prevention and infection control

Hepatitis C is a notifiable disease. The risk of sexual transmission (including oral sex) is extremely low. People with hepatitis C should be advised not to share household items which may carry traces of blood, such as toothbrushes, razors, shavers, dental floss or barber's hair-cutting equipment, and not to reuse injecting or snorting equipment. The virus is not transmitted via hugging, kissing or touching.

Choice of language when talking to patients

Avoid Terms	Use Terms
addict, drug addict, drug abuser	drug user
addiction	dependence (or inquire about the presence of withdrawal symptoms)
clean (equipment)	new (equipment)
drug abuse	drug use
intravenous	injecting
needles	injecting equipment
shared	reused (have you ever reused someone else's injecting equipment?)

Clarify the meaning of any colloquial, sub-cultural terms

Standard Precautions

Standard precautions are recommended for the care and treatment of all patients, regardless of their perceived or confirmed infectious status, and in the handling of²⁴:

- Blood (including dried blood)
- All other body fluids, secretions and excretions (excluding sweat), regardless of whether they contain visible blood
- Non-intact skin
- Mucous membranes

Standard precautions include aseptic technique, hand washing, use of appropriate personal protective equipment (which may incorporate gloves, gowns, plastic aprons, masks/face shields and eye protection), as well as appropriate reprocessing of instruments and equipment and implementing environmental controls.

When following standard precautions it is never necessary to isolate the patient or insist that they use different toilet or washing facilities. Nor is it necessary to schedule appointments at the end of the day, for patients known to have hepatitis C.

All blood and body fluids should be considered potentially infectious, so wearing gloves for procedures, including venepuncture, is mandatory. All health careworkers should apply standard precautions to every patient.²⁵

Not all people with hepatitis C know that they have the virus. Furthermore, people with hepatitis C are not required to disclose their status for infection control purposes. Where a person's status is known, there is no need for this to be disclosed to other health care workers to facilitate infection control.

Infection control procedures should be applied irrespective of a person's serostatus to prevent possible exposure.

Needlestick injury and blood spills

The risk of hepatitis C transmission through a needlestick injury from a known source depends on the viral load of the source patient, the first aid administered and the instruments involved (hollow bore needle, scalpel, trocar, etc.). It should be noted, however, that the source patient could be in the window period and therefore their results may be inconclusive.

In the event of a needlestick or other blood or body fluid exposure, the Department of Health and Ageing recommends establishing the HIV, HBV and HCV status of the source patient involved after gaining informed consent, and providing appropriate pre- and post-test counselling.²⁴

The recipient of the injury can choose to have Liver Function Tests (LFTs) and HCV RNA PCR testing four weeks after exposure, and antibody HCV testing at three and six months post-exposure. In order to establish a baseline measurement, it is recommended to have LFTs and a HCV antibody test on the day of the exposure or shortly thereafter.

At the time of a needlestick injury or other exposure:

- Wash your skin with soap and water at the site of exposure
- Rinse your mouth, nose and eyes well with water or saline, if exposed
- Report the incident and follow your local workplace Occupational Exposure Protocol

An Occupational Exposure Protocol ensures that people know the specific steps to take if required (i.e. first aid, reporting, risk assessment and counselling). This also includes having access to the names and contact details of relevant professionals, such as GPs, Accident and Emergency departments and hepatitis C councils.

If you need further assistance with the management of a needlestick injury, contact your local hepatitis C council.

Health care workers with hepatitis C

Health care workers with hepatitis C who are involved in exposure-prone procedures should inform their employer of their infection status, and refer to their state or territory policy and procedures for workers who are hepatitis C positive.²⁶ An exposure-prone procedure is a procedure with potential for contact between the skin of the health care worker (usually finger or thumb) and sharp surgical instruments, needles or sharp tissues (spicules of bone or teeth) in body cavities or in poorly visualised or confined body sites (including the mouth).²⁷

Personal perspective

Discrimination and stigma, or the fear and past experience of these, can be powerful disincentives that prevent people with hepatitis C from accessing dental and other health care services. This personal comment illustrates the importance and value of maintaining a welcoming and non-judgmental approach to treating all clients, in order to ensure the provision of effective health care and follow-up.

'I've never disclosed that I have hep C to a private dentist, primarily because I'd be worried about their level of knowledge and their attitude. Will they make assumptions and value judgements? Will they be less attentive and less careful? Be less likely to repair or restore my teeth and more likely to just pull a tooth out? When you're a patient you don't always know what a treatment decision is based on. I also worry about confidentiality – will dental assistants and receptionists, as well as the dentist, respect my right to privacy? Do they have enough knowledge of the disease not to behave in a discriminatory manner?

'I'm really lucky now I'm part of the trial here at the Dental Hospital in South Australia. The level of care is great and I feel really comfortable being treated there. The dentists are really relaxed around me and not fearful of catching the virus from me, and that's incredibly important. I feel that if the health care person I'm dealing with is nervous about transmission and taking unnecessary precautions – for example scheduling my appointment at the end of the day – then I worry that they are not taking the right precautions and that I might be at risk of infection.

'I used to really dislike going to the dentist and, as I said, I certainly didn't want to disclose the fact that I have hep C, but since I've been going to the Dental Hospital and I've had a positive reaction from them, I'm more likely to go back for follow-up appointments and take better care of my teeth. Within six months of attending my self-esteem has also improved – they have done some cosmetic work – a little bit of filler where I'd had a big gap. If I'd been offered that before and I'd felt that I would be discriminated against, I wouldn't have gone back and had that done.

'In general, in health care, my experience has been pretty mixed – sometimes it would have been really helpful to have had some more information about the virus and that hasn't always been available. One thing that often comes through is that people make assumptions of how you acquired the virus. I don't like being asked how I contracted the virus, and I don't like the assumptions that go along with it – that if you have medically acquired hep C you are a "victim", otherwise you are someone who "chose to take a risk"! I also really dislike being called a "carrier" or being asked how long I've "been hep C" – as if that's all you are – the virus.

'I find it troubling that community response to people with hepatitis C is affected by the media response that stories are sensationalised and there's no room for facts and rational explanation. It's important that people have access to education and correct information about the virus.'

Glossary

ALANINE AMINO TRANSFERASE (ALT)

A protein which, when found in the blood in elevated quantities, generally indicates liver damage.

CIRRHOSIS

Extensive and permanent scarring of the liver. Cirrhosis interferes with the normal functioning of the liver.

COMBINATION THERAPY

The use of two or more types of treatment, in combination, to achieve optimum results. In hepatitis C treatments this term currently refers to a combination of the drugs peginterferon and ribavirin.

EXPOSURE-PRONE PROCEDURE

A procedure with potential for direct contact between the skin of the health care worker (usually finger or thumb) and sharp surgical instruments, needles or sharp tissues (spicules of bone or teeth) in body cavities or in poorly visualised or confined body sites (including the mouth).

FIBROSIS

Formation of scar tissue on the surface of the liver, to replace normal tissue lost through injury or infection.

GENOTYPE

A term used to describe the specific genetic structure of hepatitis C.

INTERFERON

A substance produced naturally by the body to help defend itself against viral infection. The administration of large doses of synthetically manufactured interferon alpha can help to reduce the amount of hepatitis C in the blood and slow down or stop the disease process (see peginterferon below).

LIVERBIOPSY

A clinical procedure commonly used to stage liver disease, in which a small part of the liver is removed.

LIVER FUNCTION TEST (LFT)

A blood test used to evaluate various functions of the liver.

PEGINTERFERON

A longer-acting pegylated form of interferon used in combination with ribavirin, that has largely replaced interferon as the drug of choice for HCV therapy.

POLYMERASE CHAIN REACTION (PCR)

A laboratory technique that amplifies the genetic material of a virus to a level that can be detected. The presence or absence of the virus can then be determined.

RIBAVIRIN

A drug that alters the body's immune response to viruses. Used in combination with peginterferon in the treatment of hepatitis C. This drug is a teratogen.

SIALAGOGUE

Anything that stimulates the excretion of saliva.

References

- 1 2006 Annual Surveillance Report, HIV/AIDS, viral hepatitis and sexually transmissible infections in Australia, edited by National Centre in HIV Epidemiology and Clinical Research 2006;1–17.
- 2 Hepatitis C Council of NSW. Hepatitis C: What you need to know. Sydney: HCCNSW, 1996:4.
- 3 ASHM. HIV/Viral Hepatitis: a guide for primary care. Adelaide: ASHM, 2004;10.
- 4 Dev A, McCaw R, Sundararajan V, Bowden S, Sievert W. Southeast Asian patients with chronic hepatitis C: The impact of novel genotypes and race on treatment outcome. *Hepatology* 2002;36:1259–1264.
- 5 Crofts N, Dore G, Locarnini S. Hepatitis C: An Australian Perspective. Melbourne: IP Communications, 2001.
- 6 Hepatitis C Sub Committee of the Australian National Council on AIDS and Related Diseases. Estimates and projections of the hepatitis C virus epidemic in Australia. Sydney 1998;Aug.
- 7 MacDonald M, Wodak A. Preventing transmission of hepatitis C. *Hepatitis C Update: A management guide for general practitioners.* AFP 2003;28(Dec):9.
- 8 World Health Organization (WHO). Hepatitis C Factsheet. WHO 2000;FS164 <http://www.who.int/mediacentre/factsheets/fs164/en/>
- 9 MacDonald M, Wodak A. Preventing transmission of hepatitis C. *Hepatitis C Update: A management guide for general practitioners.* AFP 2003;28(Dec):10.
- 10 Coates EA, Walsh L, Logan R. The increasing problem of hepatitis C virus infection. *Aust Dent J* 2001;46(1):13–7.
- 11 MacDonald M, Wodak A. Preventing transmission of hepatitis C. *Hepatitis C Update: A management guide for general practitioners.* AFP 2003;28(Dec):17.
- 12 Dinsmoor MJ. Hepatitis C in pregnancy. *Current Women's Health Reports* 2001;1;1(Aug):27–30.
- 13 Newell ML, Pembrey L. Mother-to-child transmission of hepatitis C virus infection. *Drugs of Today* 2002;38;5(May):351–37.
- 14 Kumar RM, Shahul S. Role of breastfeeding in transmission of hepatitis C virus to infants of HCV infected mothers. *J Hepatol* 1998;29:191–197.
- 15 McCoy R, Watson K, Kosky M. A guide to diagnosis. *Hepatitis C: A Management Guide for General Practitioners.* AFP 1999;(Dec):23.
- 16 Marinos G, Pirola R, Locarnini S. Acute hepatitis C. *Hepatitis C: A Management Guide for General Practitioners.* AFP 1999;(Dec):24.
- 17 Lin R, Barker J, Batey RG. Chronic Hepatitis C. *Hepatitis C: A Management Guide for General Practitioners.* AFP 1999;(Dec):27.
- 18 Loveday S, Deakin G, Neophyton D. Meaning for the person. *Hepatitis C: A Management Guide for General Practitioners.* AFP 1999;(Dec):51.
- 19 Coates EA, Brennan D, Logan RM, Goss AN, Scopacasa B, Spencer AJ et al. Hepatitis C infection and associated oral health problems. *Aust Dent J* 2000;45(2):108–114.
- 20 Roy KM, Bagg J. Hepatitis C virus and oral disease: A critical review. *Oral Diseases* 1999;5:270–277.
- 21 Anti-discrimination Board of New South Wales. C-Change: Report of the enquiry into hepatitis C-related discrimination. Sydney:2001(Nov):12.
- 22 Anti-discrimination Board of New South Wales. C-Change: Report of the enquiry into hepatitis C-related discrimination. Sydney:2001(Nov);2:36.
- 23 Anti-discrimination Board of New South Wales. C-Change: Report of the enquiry into hepatitis C-related discrimination. Sydney:2001(Nov);2:66.
- 24 Department of Health and Ageing. Infection Control Guidelines for the prevention of transmission of infectious diseases in the health care setting. Canberra: Commonwealth of Australia, 2004;1:10.
- 25 Royal Australasian College of Surgeons. Infection Control in Surgery: Policy Document. Melbourne: RACS, 1998:40.
- 26 Australian Institute for Primary Care. National Hepatitis C Resource Manual. La Trobe University, Melbourne: AIPC, 2001:63.
- 27 Department of Health and Ageing. Infection Control Guidelines for the prevention of transmission of infectious diseases in the health care setting. Canberra: Commonwealth of Australia, 2004;G3.

Contacts

Hepatitis C and related organisations/groups can be contacted for further resources and support information

AUSTRALIA – HCV

Hepatitis Australia

National

Tel: 61 2 6232 4257
Fax: 61 2 6232 4318
Email: ahcinfo@hepatitisaustralia.com
Web: www.hepatitisaustralia.com

Australian Capital Territory

Tel: 02 6257 2911
Fax: 02 6257 1611
Helpline: 1300 301 383
Email: info@acthepc.org
Web: www.acthepc.org

New South Wales

Tel: 02 9332 1599
Freecall: 1800 803 990 (country)
Fax: 02 9332 1730
Web: www.hepatitisc.org.au

Northern Territory

NT AIDS and Hepatitis Council
Tel: 08 8941 1711
Freecall: 1800 880 899
Fax: 08 8941 2590
Email: info@ntahc.org.au
Web: www.ntahc.org.au

Queensland

Tel: 07 3236 0610
Freecall: 1800 648 491 (country)
Fax: 07 3236 0614
Email: admin@hepatitisc.asn.au
Web: www.hepatitisc.asn.au

South Australia

Tel: 08 8362 8443
Freecall: 1800 021 133 (country)
Fax: 08 8362 8559
Email: admin@hepcouncilsa.asn.au
Web: www.hepcouncilsa.asn.au

Tasmanian Council on AIDS, Hepatitis and Related Diseases

Tel: 03 6234 1242
Freecall: 1800 005 900 (country)
Fax: 03 6234 1630
Email: mail@tascahrd.org.au
Web: www.tascahrd.org.au

Victoria

Tel: 03 9380 4644
Freecall: 1800 703 003 (country)
Fax: 03 9380 4688
Email: info@hepcvic.org.au
Web: www.hepcvic.org.au

Western Australia

Tel: 08 9227 9800
Infoline: 08 9328 8538
Freecall: 1800 800 070 (country)
Fax: 08 9227 6545
Email: info@hepatitiswa.com.au
Web: www.hepatitiswa.com.au

NEW ZEALAND – HCV

Hepatitis C Support

Tel: 64 9 377 8500

The Hepatitis Foundation

Tel: 64 7 307 1259
Freecall: 0800 332 010 (in NZ)
Fax: 64 7 307 1266
Email: hepteam@hepfoundation.org.nz
Web: www.hepfoundation.org.nz

AUSTRALIA – RELATED

Australasian Society for HIV Medicine (ASHM)

Tel: 02 8204 0700
Email: ashm@ashm.org.au
Web: www.ashm.org.au

Australian Injecting and Illicit Drug Users League (AIVL)

Tel: 02 6279 1600
Fax: 02 6279 1610
Email: info@aivl.org.au
Web: www.aivl.org.au

Australian Drug Foundation

Tel: 03 9278 8100
Infoline: 1300 858 584
Email: adf@adf.org.au
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National Centre for Education and Training on Addictions

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For additional copies of this resource contact:

Australasian Society for HIV Medicine Inc (ASHM)

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Fax: 61 2 9212 2382
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Other ASHM resources, including the following hepatitis C-related publications, are available from the ASHM website: www.ashm.org.au

Journal Supplements

- *Prehospital Care Workers and Blood-borne Viruses*
- *Dental Health and Hepatitis C*
- *Nurses and Hepatitis C*

Factsheet

- *Hepatitis C in brief – a factsheet*

Monographs

- *Coinfection: HIV & Viral Hepatitis – a guide for clinical management*
- *HIV and viral hepatitis C: policy, discrimination, legal and ethical issue*
- *HIV Management in Australasia: a guide for clinical care*
- *HIV, Viral Hepatitis and STIs: a guide for primary care*
- *B Positive - all you wanted to know about hepatitis B: a guide for primary care*

Distance-learning kit

- *'Talking Together' Contemporary issues in Aboriginal and Torres Strait Islander health: HIV, hepatitis and sexual health*

Manuals

- *Australasian Contact Tracing Manual, Edition 3.2006*

ASHM offers training in HIV, viral hepatitis and blood-borne viruses for general practitioners, nurses and allied health care workers around Australia.

For further information on upcoming courses visit www.ashm.org.au/courses or contact the ASHM Education and Training Division on education@ashm.org.au or phone **02 8204 0720**.



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