Ambulance Officers and Hepatitis C

The facts

Hepatitis C is the most notified communicable disease in Australia. In 2002, it was estimated that approximately 210,000 Australians had been exposed to the virus and that 16,000 new infections were predicted.[1] Infection with the virus can cause long term liver problems, including cirrhosis and liver cancer.

As an ambulance officer* you will have already provided care to someone with hepatitis C, and you will continue to be required to provide care to people living with hepatitis C. Many people with hepatitis C are unaware that they are infected, and hepatitis C transmission often occurs without symptoms. It is important that all health care workers have an understanding of the virus and how it is transmitted in order to make sure that infection control is effective.

History

Before testing for the hepatitis C virus was developed in 1989, it was 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. The majority of these cases, known as non A- non B-hepatitis or post transfusion hepatitis have since been identified as hepatitis C.[2]

Transmission

Hepatitis C is blood borne - it is transmitted when infected blood enters the blood stream of another person. Approximately 80% of Australian born people with hepatitis C were exposed to the virus through unsterile injecting drug use.[3] Because many people with hepatitis C do not realise they have the virus, it can be transmitted unknowingly. The main modes of transmission are:

- Unsterile injecting – including reusing or sharing syringes, needles, tourniquets, spoons, water, snorting devices, surfaces and fingers contaminated with blood.[4]
- Receipt of a blood transfusion or blood product prior to 1990. Blood products used in Australia after February 1990 are considered safe.
- Exposure through unsterile tattooing or body piercing.

- Exposure via a penetrating injury (needlestick).[5]
- Unsterile vaccinations and medical procedures, particularly in regions with a high hepatitis C prevalence (> 1.0%). These include Asia, the Middle East, Africa, South America and southern and eastern Europe. In some countries this is the most common way hepatitis C has been spread.[6]

The risk of transmitting hepatitis C via sexual contact is considered to be extremely low.[7] 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 transmitted diseases.[8] The probability of transmission may depend on the infectivity (viral load levels) of the infected person.

Household transmission (i.e. via razors or toothbrushes) is considered to be extremely rare, however where the possibility of blood contact exists, these items should not be shared.[9] There is no risk of viral transmission via cups, plates or other eating utensils.

In terms of mother-to-child transmission, the risk of transmission is approximately 5%.[10] HIV co-infection and a high level of maternal HCV (hepatitis C virus) RNA are the strongest risk factors. There have been no cases notified of transmission via breast milk.

Hepatitis C affects different people in different ways. The vast majority of people with hepatitis C are asymptomatic during the initial (acute) phase of infection. However, around 10 to 20% will be acutely ill for up to several weeks 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 may transmit the virus to others.[11]

Many people with a chronic infection stay healthy for a long time. Some people develop symptoms of liver disease, among them tiredness, lethargy, nausea, headaches, depression, aches and pains in joints and muscles, and discomfort in the upper abdomen area. After 20 years, up to 10 percent of people with chronic infection will develop serious liver illness, such as cirrhosis, liver failure and liver cancer.[12] (see *Disease Progression of Hepatitis C* on page 5). Hepatitis C is now the most common reason for liver transplantation in Australia.

Treatment

Currently antiviral therapy is available that shows around a 40% long term rate of viral clearance. This rate can rise up to 70% depending on factors such as genotype and viral load and their interplay with host and disease related issues such as age when infection occurred, alcohol use and the degree of liver fibrosis (which develops over decades).[13,14] Antiviral therapy is not always the most appropriate treatment for a person with hepatitis C, and even when it is deemed to be potentially beneficial, there is usually no urgency in beginning the treatment as hepatitis C is a slowly progressive illness. The decision to commence therapy is made by the patient and doctor taking into account the clinical, personal and lifestyle issues of the patient.

Discrimination

Hepatitis C is a highly stigmatised condition and many people living with the virus experience discrimination. In health care settings non-standard infection control procedures, restriction of access to treatment (such as being placed last in the clinic or surgery queue) and breaches of confidentiality are all aspects of discrimination. Clear policies and practice that protect people's privacy and confidentiality and ensure the implementation of standard infection control are currently in place in all State health departments and are important elements in tackling discrimination in the health care setting. Education is also vital, enabling people to understand how hepatitis C is transmitted and how to reduce the risk of transmission.[15]

It should be noted that the Australian Commonwealth and most states and territories prohibit discrimination against someone with a viral infection. There are also statutory privacy protections regarding peoples' health status.

With high numbers of new infections, existing chronic infections and with most people with hepatitis C not yet seeking treatment or experiencing serious liver illness, hepatitis C will continue to be a serious consideration in Australia's health care system for many years.

Choice of language when talking to patients

Accurate non-judgemental language combined with a concern for the patient's welfare helps to build trust with a patient. Accurate language also helps to estimate correctly the level of risk of hepatitis C transmission.

Avoid the terms:

- addict, addiction, drug addict, drug abuse, drug abuser, intravenous.

Use the terms:

- injecting (rather than intravenous)
- drug use not abuse
- injecting equipment not needles
- reused not shared (eg. Have you ever reused someone else's injecting equipment?)
- ask about the presence of withdrawal symptoms and/or dependence, not addiction
- new equipment not clean equipment

Clarify the meaning of any colloquial, subcultural terms associated with marginalised groups. This can be done by asking "what do you mean by …?

*The term "ambulance officer" is used in this document to refer to the whole spectrum of ambulance workers, including, for example, patient transport officers, St John's ambulance officers and volunteers and intensive care resource paramedics.

1 ANCAHRD Hepatitis C Sub Committee, Hepatitis C Virus Projections Working Group, *Estimates and Projections of the Hepatitis C Virus Epidemic in Australia 2002*, NCHECR, Sydney, June 2002.
2 Hepatitis C Council of NSW *Hepatitis C: What you need to know*, Hepatitis C Council of NSW, Sydney, 1996, p.4.
3 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*, August 1998, Sydney, p.6.
4 MacDonald, M. and Wodak, A. *Preventing transmission of hepatitis C*, Hepatitis C: A Management Guide for General Practitioners, Australian Family Physician, 28, December 1999, p.15.
5 National Health & Medical Research Council *A strategy for the detection and management of hepatitis C in Australia*, Australian Government Printing Service, Canberra, 1997, p.61.
6 Dore, G.J., Pritchard-Jones, J., Fisher, D. and Law, M.G. *op cit*, p.12
7 Sasadeusz, J., Locarnini, S. and Kidd M., *HIV, HBV, HCV: similarities and differences*, HIV/Viral Hepatitis: A Guide for Primary Care, ASHM, 2001, p.11
8 Rooney, G. and Gilson, R.J.C. *Sexual transmission of hepatitis C virus infection*, Sexually Transmitted Infections, 74, 1998, pp.399-404.
9 MacDonald, M. and Wodak, A. *op cit*, p.17
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11 Dore, G.J., *Natural History of Hepatitis C Virus Infection*, Hepatitis C: An Australian Perspective, Crofts, Dore, Locarnini (eds.), IP Communications, Melbourne, 2001, p.86
12 Lin, R., Barker, J and Batey, R., *Chronic Hepatitis C*, Hepatitis C: A Management Guide for General Practitioners, Australian Family Physician, 28, December 1999, p.28
13 Sievert, W., *An overview of antiviral therapy for chronic hepatitis C infection*, Hepatitis C: An Australian Perspective, Crofts, Dore, Locarnini (eds.), IP Communications, Melbourne, 2001, p.140
14 Sievert, W. and Korevaar, D., *Antiviral therapy for chronic hepatitis C*, Hepatitis C: A Management Guide for General Practitioners, Australian Family Physician, 28, December 1999, pp.40-45
15 Anti-Discrimination Board of New South Wales. *C-Change: Report of the enquiry into hepatitis C related discrimination*, Sydney, November 2001, pp. 128-129

Prevention
and infection control

Hepatitis C is transmitted when the blood of an infected person enters another person's bloodstream. The risk of sexual transmission (including oral sex) is extremely low. However, people with hepatitis C should be advised not to share household items which may carry traces of blood, such as toothbrushes, razors, shavers and not to reuse injecting or snorting equipment. The virus is not transmitted via hugging, kissing or touching.

Standard Precautions

All blood and body fluids of all patients should be considered potentially infectious.

As many people who have been exposed to hepatitis C are unaware that they have been exposed, infection control measures based on assumptions or knowledge about a person's hepatitis C status are ineffective in reducing transmission. Effective infection control for all communicable diseases lies in the application of Standard Precautions when caring for all patients.

Standard Precautions include aseptic technique, hand washing, use of appropriate personal protective equipment including gloves and eye protection, as well as appropriate reprocessing of instruments and equipment and safe exhaust design in open-circuit ventilation equipment and in-line filters in closed circuit systems.[1]

Gloves and masks Ambulance officers should always wear gloves appropriate to the task when it is likely that their hands will be contaminated with blood or body fluid or come into contact with mucous membranes. Hands should be washed before and after using gloves as the gloves may have defects or become damaged through use. Gloves should be changed after contact with each patient. Ambulance officers who have developed a sensitivity or allergy to latex could use alternatives to latex such as neoprene. Protective eyewear or face shields should always be worn where there is the potential for splashing, splattering or spraying of blood or other body substances. [2]

Hand washing Where practical, hands should be washed with neutral pH soap before significant contact with any patient (which may include physical examination, emptying a catheter, undertaking venipuncture or delivery of an injection). Hands should also be washed after activities likely to cause contamination, including handling equipment or instruments soiled with blood or other body substances, direct contact with body secretions or excretions and going to the toilet.

In emergencies where there may be insufficient time for a routine hand wash, an alcoholic chlorhexidine preparation may be used. In the field when hand washing facilities are limited or not available, a detergent-containing towelette could be used to cleans hands before using any chlorhexidine antimicrobial hand washes.[3] It should be noted that in following Standard Precautions it is never necessary to isolate a patient on the basis of presumed or known hepatitis C positive status.

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 are established and should be applied irrespective of knowledge of a persons' serostatus to prevent possible exposure.

Handling and Disposal of Sharps Sharps represent the major cause of accidents involving potential exposure to blood borne diseases and must be handled with care at all times. An approved sharps container should be located as close as possible to the site of use to ensure safe disposal. Any object that has the potential to cause a sharps injury, including for example, glass ampoules and IV giving set spikes, should be disposed of in such a container.

Sharp instruments should not be passed by hand between Ambulance Officers. Where possible use alternatives such as needleless IV systems, blunt needles for drawing up sterile solutions from ampoules and retractable needle and syringe systems. To prevent injury in the often mobile environment, needles should not be resheathed. They should not be broken or bent by hand, removed from disposable syringes or otherwise manipulated by hand.[4]

Needlestick injury

The risk of hepatitis C transmission through a needlestick injury from people who are both hepatitis C antibody-positive and PCR-positive is between 2.5 and 10%.[5] The risk depends on the viral load of the source patient, the first aid administered and the instrument involved, for example a hollow bore needle.

In the event of a needlestick or other blood accident, the NH&MRC recommends establishing the hepatitis C status of the source patient involved after gaining informed consent.[6] It should be noted however, that the source patient could be in the window period and therefore their results may be inconclusive. It is also important that, if the source patient is to be tested, they receive adequate pre-test information which should include information on confidentiality issues, transmission of the virus, the meaning of the window period, what the results of the test would mean, the possible outcomes if the result is positive and the range of medical and non-medical supports available. A risk assessment should be carried out and management needs assessed, based on the severity of the injury, looking at factors such as the type of instrument, the procedure being carried out (for example, aspirating blood or administering medicine) and whether gloves were being used. The risk assessment could be carried out by an infectious diseases consultant who is independent of the service.

The recipient of the injury may have liver function tests (LFTs) and HCV PCR testing 4 weeks after exposure, and anti-HCV testing at 3 and 6 months post exposure. The person should also have LFTs and a HCV Antibody test on the day of the exposure or shortly thereafter to act as a baseline with which to compare future results.

At the time of a needlestick injury or other exposure:

- ⊡ Skin: wash with soap and water. Alcohol based hand rinses [70% alcohol] should be used when water is not available.
- ⊡ Mouth, nose, eyes: rinse well with water or saline.
- ⊡ If transporting a patient to hospital report the exposure risk to a doctor at the Emergency Department.
- ⊡ Then report immediately to your supervisor and follow your workplace protocol for post infection exposure risk.[7]

If you need further assistance with the management of a needlestick injury, contact your local infection control officer/ coordinator (see Resources page 6).

Blood spills

Blood and body substance spills should be dealt with immediately, or in circumstances where procedures or urgent transport are underway, be attended to as soon as it is safe to do so.

In the event of a blood spill, use gloves and carefully wipe up any blood with a paper towel. Then wash the area with soapy water. Where there is the possibility of some blood or body substance remaining on a surface where cleaning is difficult (for example between tiles), then a disinfectant may be used after the surface has been cleaned with soapy water. Dispose of bloodstained tissues or other blood stained dressing in a clinical waste leak-proof plastic bag or container.[8]

To facilitate management of spills in the Ambulance vehicle and for information and direction on the classification and handling of blood spills and the contents of spills kits, reference should be made to the local Ambulance Service spills policy. Likewise, where patient torrential blood loss has resulted in large scale vehicle contamination the local Ambulance Service's decontamination of operational vehicles protocol should be consulted and followed.

Ambulance Officers with hepatitis C

Ambulance Officers who perform exposure prone procedures have an ongoing responsibility to know their hepatitis C status, and should not perform exposure prone procedures if there is evidence of current/active hepatitis C infection, as there is a risk of transmission of infection in this situation.

An exposure prone procedure is any in which there is a potentially high risk of blood borne virus transmission from a health care worker to a patient during a medical procedure, such as any procedure with sharp hand held instruments beneath the mucous membrane, or any procedure dealing with sharp pathology or bone spicules in a poorly visualised or confined space. Exposure prone procedures do not include non-invasive examinations or procedures, intact skin palpation or injections or venepuncture. [9]

For more information regarding the rights and responsibilities of health care workers with hepatitis C, contact your local Hepatitis C Council (see Resources on page 6), health department or your state or territory's Anti-Discrimination Board or Equal Opportunity Commission.

1 Communication with Tasmanian Ambulance Service, Clinical Practice and Education Unit, May 3, 2002
2 Commonwealth Department of Health and Aged Care, *Draft Infection Control Guidelines*, Canberra, November 2001, pp. 11-15, 103-106.
3 Queensland Ambulance Service, *Clinical Practice Manual, Infection Control Procedures*, June 2001, pp12-15
4 *Ibid*, p.21
5 National Health & Medical Research Council and Australian National Council on AIDS, *Infection control in the health care setting*, Australian Government Printing Service, Canberra, 1996, p.62.
6 *Ibid* p.64
7 Queensland Ambulance Service, *op.cit*, p.9
8 Commonwealth Department of Health and Aged Care, *op.cit*, p.153
9 Commonwealth Department of Health and Aged Care, *op.cit*, p.31

How is hepatitis C different from hepatitis A and B?

Hepatitis means inflammation of the liver. There are many causes for this inflammation including viruses and alcohol and other drugs. Hepatitis viruses are named by letters of the alphabet.

Hepatitis A is usually a mild disease that does not become chronic. It is passed on via food and water contaminated with faecal particles from an infected person, via oral/anal sexual contact and blood to blood contact during the infectious stage. There is a vaccine available to prevent infection with hepatitis A.

Hepatitis B can be mild, severe, acute or chronic. Most cases of chronic hepatitis B infection in the world are acquired by mother to child transmission. In Australia, most new cases of hepatitis B infection are acquired through sexual contact, either heterosexual or male homosexual sex. Hepatitis B can also be transmitted through infected blood including contaminated injecting equipment. There is a vaccine for hepatitis B available. In babies infected with hepatitis B the risk of developing chronic hepatitis B is estimated at >90%. Vaccination of babies at birth prevents chronic hepatitis B developing.

Hepatitis C is transmitted when infected blood enters the bloodstream of another person and is usually passed from object to person. Unlike hepatitis B it is very rare for hepatitis C to be transmitted by sexual activity and mother to child transmission is also uncommon. Hepatitis C is not transmitted by food or water contamination. Hepatitis C is likely to become a chronic condition in 70 to 80% of people, with 10% developing severe liver disease, whereas in hepatitis B only around 5% of people infected as adults develop a chronic condition. There is no vaccine available for hepatitis C.

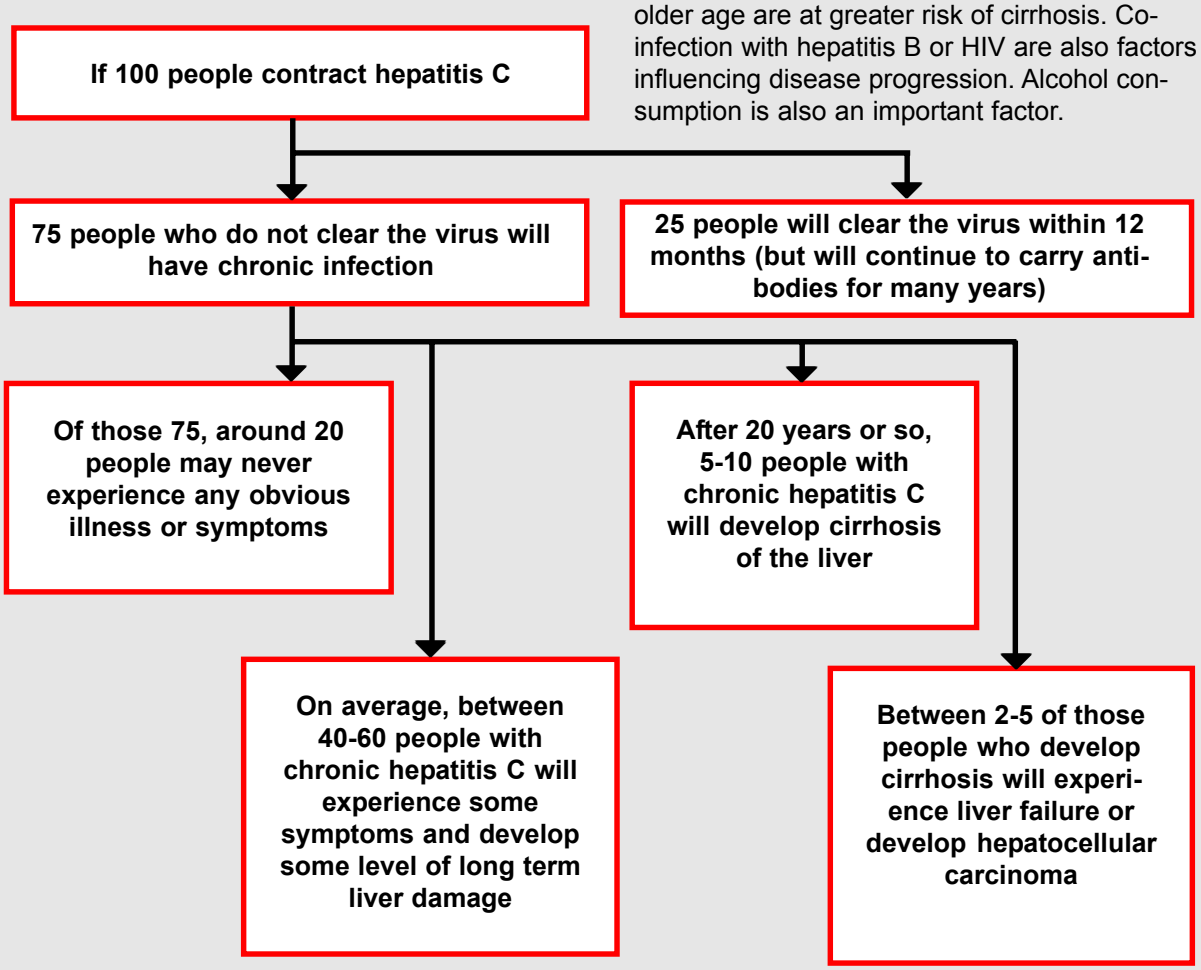
Hepatitis A, B and C are all classified as notifiable communicable diseases. To prevent the complications of co-infection it is recommended that people with hepatitis C be vaccinated against hepatitis A and B.

While there is no specific treatment of hepatitis A, antiviral treatments are available for hepatitis B and C.

Three other hepatitis viruses D, E and G have been isolated. D (or delta) and E are uncommon in Australia.

Disease progression of hepatitis C

The natural history of hepatitis C progress is unclear in many instances. Researchers believe the course of the disease is affected by how old the person was when it was contracted, for example those who aquired hepatitis C at an older age are at greater risk of cirrhosis. Co-infection with hepatitis B or HIV are also factors influencing disease progression. Alcohol consumption is also an important factor.



Glossary of Terms

Alanine aminotransferase (ALT) - a protein which, when found in the blood in elevated quantities, generally indicates liver damage.
Ambulance officer – the term "ambulance officer" is used in this document to refer to the whole spectrum of ambulance workers, including, for example, patient transport officers, St John's ambulance officers and volunteers and intensive care resource paramedics.
Antibody test – an initial screening blood test that looks for antibodies to the virus and not for the virus itself.
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 interferon and ribavirin.
Exposure prone procedure - any situation where there is a potentially high risk of blood borne virus transmission from a health care worker to a patient during a medical or dental procedure. Any submucosal invasion with sharp hand-held instruments, or procedure dealing with sharp pathology/bone spicules, usually in a poorly visualised or confined space.
Fibrosis - formation of scar tissue on the surface of the liver to replace normal tissue lost through injury or infection.
Liver biopsy - a clinical procedure in which a small part of the liver is removed. Used to assess the health of the liver.
Liver function test (LFT) - a blood test used to evaluate various functions of the liver.
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.

Resources

Hepatitis C Councils can be contacted for further resources and support information

Australian Hepatitis Council (AHC)
Tel: 02 6232 4257
Email: info@hepatitisaustralia.com
Web www.hepatitisaustralia.com

Australian Capital Territory
Tel: 02 6253 9999
Email: info@acthepc.org
Web: www.acthepc.org

New South Wales
Tel: 02 9332 1853
1800 803 990 (NSW country)
Email: hccnsw@hepatitisc.org.au
Web: www.hepatitisc.org.au

Queensland
Tel: 07 3229 3767
1800 648 491 (Qld country)
Email: admin@hepatitisc.asn.au
Web: www.hepatitisc.asn.au

South Australia
Tel: 08 8362 8443
1800 821 133 (SA country)
Email: admin@hepccouncilsa.asn.au
Web: www.hepccouncilsa.asn.au

Tasmanian Council on AIDS Hepatitis and Related Diseases
Tel: 03 6234 1242
1800 005 900 (Tas country)
Email: mail@tascard.org.au

Victoria
Tel: 03 9380 4644
1800 703 003 (Vic country)
Email: hepcvic@vicnet.net.au
Web: www.hepcvic.org.au

Western Australia
Tel: 08 9328 8216
1800 800 070 (WA country)
Email: hepccwa@highway1.com.au
Web: www.hepccwa.highway1.com.au

The following organisations can provide information and assistance in relation to hepatitis C and related issues.

Australian Injecting and Illicit Drug Users League (AIVL)
Tel: 02 6279 1600

Australian Drug Foundation (ADF)
Tel: 03 9278 8100
1800 136 385
Web: www.adf.org.au

Gastroenterological Society of Australia (GESA)
Tel: 02 9256 5454

National Centre for Education and Training on Addictions (NCETA)
Tel: 08 8201 7535

Northern Territory Hep C Info Line
Territory Health Services
Tel: 08 8922 8007
1800 353 755 (NT country)

Further resources are available through the ASHM website at http://www.ashm.org.au.

ASHM, *HIV/Viral hepatitis: a guide for primary care*. 2001 available by contacting ASHM at the address below or through the website.

Crofts, N., Dore, G. & Locarnini, S. (eds), *Hepatitis C: an Australian perspective*, IP Communications, 2001

National Hepatitis C Resource Manual, 2001. Copies can be ordered from phd.publications@health.gov.au

Australian Family Physician, *Hepatitis C: a management guide for general practitioners,* RACGP December 1999, Vol 28, Special Issue. Can be viewed and downloaded from: http://www.ancahrd.org/pubs/pdfs/racgp_hepc.pdf

There are several Commonwealth Department of Health and Ageing documents of interest. They can be viewed and downloaded from: www.health.gov.au/pubhlth/strateg/hiv_hepc/hepc/index.htm

Most states and territories provide information about their infection control guidelines and policies through their websites at the following addresses.

ACT Department of Health & Community Care
www.health.act.gov.au/publications
NSW Health
Infection Control Policy
www.health.nsw.gov.au/fcsd/rmc/cib/circulars/2002/cir2002-45.pdf

Department of Health and Community Services - Northern Territory
www.nt.gov.au/health/

Queensland Health
www.health.qld.gov.au/infectioncontrol/

South Australian Department of Human Services
Hepatitis C information and services
www.dhs.sa.gov.au/pehs/topics/topic-hep-c-book.htm

Department of Health and Human Services Tasmania
www.dhhs.tas.gov.au/publichealth/communicablediseases/

Victorian Department of Human Services, Public Health Division
Guidelines for the Control of Infectious Diseases
www.dhs.vic.gov.au/phd/hprot/inf_dis/bluebook/index.htm

Health Department of Western Australia
www.health.wa.gov.au

Further information regarding hepatitis C and discrimination can be obtained from the following offices:

Human Rights & Equal Opportunity Commission - Commonwealth
Tel: 02 9284 9600

Anti-Discrimination Board of NSW
Tel: 02 9268 5544

Anti-Discrimination Commission - NT
Tel: 08 8999 1444

Anti-Discrimination Commission - QLD
Tel: 07 3247 0900

Equal Opportunity Commission - SA
Tel: 08 8207 1977

Anti-Discrimination Commission - TAS
Tel: 03 6224 4905

Equal Opportunity Commission - VIC
Tel: 03 9281 7100

Equal Opportunity Commission - WA
Tel: 08 9216 3900

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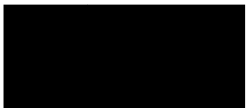

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