CONFERENCE HANDBOOK AND ABSTRACTS

IMPROVING ACCESS TO KNOWLEDGE + PREVENTION + RESOURCES + TREATMENT

increasing access

MONDAY 20 – WEDNESDAY 22 FEBRUARY 2006
THE SYDNEY MASONIC CENTRE, SYDNEY, AUSTRALIA
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MONDAY 20 – WEDNESDAY 22 FEBRUARY 2006
THE SYDNEY MASONIC CENTRE, SYDNEY, AUSTRALIA
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WELCOME LETTER

On behalf of the Australasian Society for HIV Medicine (ASHM), the Gastroenterological Society of Australia and The Australian Hepatitis Council, I am delighted to welcome you to the 5th Australasian Viral Hepatitis Conference, at the Sydney Masonic Centre.

Hepatitis B and hepatitis C infect a large number of people living in our region. There have been significant developments in our understanding of these viruses, yet the progress in reducing the consequences of these infections has been more modest. In recognition of the widespread nature of hepatitis B infection, the conference name has been changed to the Australasian Viral Hepatitis Conference.

The theme of this conference is ‘Increasing Access’. This includes access to educational resources to prevent transmission and facilitate diagnosis. It also means making the sciences more readily understood that define the consequences of these infections. As the range of therapeutic options improves, we need to remove barriers to treatment. This is particularly relevant to segments of the population who have traditionally been difficult to treat, such as people in prisons and other marginalised groups. Lastly, there is the ongoing issue of accessing funds to address all these areas. These issues of access are important to people working in health care and the sector, researchers and consumers.

There will be six major streams in the conference: Basic Sciences (including virology and laboratory diagnosis); Clinical Medicine; Community Responses; Epidemiology; Public Health and Prevention and Social Research. As well as having world-leading expertise in each of the streams, the conference will endeavour to engage participants with different sectoral interests in dialogue and the cross-fertilisation of ideas. The plenary sessions include input from multiple streams on a common theme within the one session, and there are parallel sessions for individual streams.

We hope you enjoy the 5th Australasian Viral Hepatitis Conference and find it a stimulating and innovative meeting.

Graeme Macdonald
Conference Convenor

The Conference Convenors Group

Graeme Macdonald
University of Queensland, School of Medicine

Campbell Aitken
Burnet Institute

Sharon Caris
Haemophilia Foundation Australia

Darrell Crawford
Gastroenterological Society of Australia/Australian Liver Association

Levinia Crooks
Australasian Society for HIV Medicine

Tony Cunningham
Australian Centre in HIV & Hepatitis Virology Research

Kate Dolan
National Drug & Alcohol Research Centre

Ed Gane
New Zealand Liver Transplant Unit

Eric Gowans
Burnet Institute

Paul Haber
Royal Prince Alfred Hospital

Sonja Hill
Australasian Society for HIV Medicine

John Hornell
New Zealand Hepatitis Foundation

Annie Madden
Australian Injecting & Illicit Drug Users League

Jacqui Richmond
St Vincent’s Hospital, Melbourne

Leanne Totton
Fremantle Hospital

Carla Treloar
National Centre in HIV Social Research, UNSW

Helen Tyrrell
Australian Hepatitis Council

Nadine Giatras, Daliah Frank and Nicole Robertson
Australasian Society for HIV Medicine
TREAT MORE, TREAT SOONER
WITH PEGASYS RBV

66%
Latest published overall cure rate; ITT analysis

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<td>Ed</td>
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<tr>
<td>Carla</td>
<td>Treloar</td>
<td>National Centre in HIV Social Research</td>
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because PEGATRON® treated me as an individual¹,²

Please review approved Product Information before prescribing.

PEGATRON (Peginterferon alfa-2b; ribavirin). Indication: Combination treatment for chronic hepatitis C. Contraindications: Severe cardiac disease (< 6 months prior); haemoglobinopathies; creatinine clearance < 50 mL/min; decompensated liver cirrhosis; recent, current immunosuppressive therapy (except short-term steroid); autoimmune disease; immunosuppressed transplant patients; uncontrolled thyroid disease; pregnancy, male partners of pregnant women (use contraception greater than or equal to 6 months after treatment conclusion), lactation. Precautions: Cardiac, renal disease (monitor); ensure hydration; severe hepatic dysfunction; initial, ongoing lab test monitoring; hypertension (monitor visual function); severe psychiatric conditions; psoriasis; sarcoidosis; ocular changes; pulmonary changes; elderly; children < 16 yrs. Adverse Reactions: Serious: Possible teratogenic; bone marrow suppression; haemolysis; ocular, pulmonary, cardiovascular effects; psychiatric, CNS disturbance; kidney, possible liver graft rejection; hypertriglyceridaemia; thyroid dysfunction; autoantibody development; autoimmune, idiopathic thrombocytopenic purpura; gut: Common: fever; local reactions; fatigue; flu-like symptoms; headache; rigors; GI upset; anorexia; arthralgia; myalgia; alopecia; dry skin; pruritus; others, see full PI. Dose: PEG-Imron: 1.5 mcg/kg injection once weekly, in combination with ribavirin capsules in 2 divided doses: < 65 kg: 800 mg/day, 65-85 kg: 1000 mg/day, > 85 kg: 1200 mg/day; for up to 1 year. Review the Product Information before prescribing. Full disclosure Product Information is available on request from Schering-Plough Pty Limited.


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PEGATRON (Peginterferon alfa-2b recombinant + ribavirin)

The tailored approach to HCV
increasing access

MONDAY 20 – WEDNESDAY 22 FEBRUARY 2006
THE SYDNEY MASONIC CENTRE, SYDNEY, AUSTRALIA
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| 9.00am - 10.30am | Concurrent Session - Basic Science - HCV Expression and Analysis  
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| 9.00am - 10.30am | Public Health & Prevention - Hepatitis C Interventions  
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| 10.30am - 11.00am | Morning Tea - Banquet Hall                                                   |
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| 11.00am - 12.00pm | Plenary - Basic Science  
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  Public Health Ltd, Melbourne Australia |
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| 7.00pm - 11.00pm | Conference Dinner - The Dockside  
  Grand Lodge |
| 7.00pm - 11.00pm | Conference Dinner - The Dockside  
  Grand Lodge |

**TUESDAY 21 FEBRUARY 2006**

**5TH AUSTRALASIAN CONFERENCE: SYDNEY 2006**
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<td>11.00am -</td>
<td>Plenary - Clinical Trials</td>
<td>Grand Lodge</td>
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<tr>
<td>11.00am -</td>
<td>Eric Gowans - Senior Principal Research Fellow</td>
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<td>11.30am</td>
<td>Macfarlane Burnet Institute, Melbourne, Australia</td>
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<td>11.30am -</td>
<td>Fina Tito-Wheatland - ANU Research School of Social</td>
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<td>12.00pm</td>
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<td>12.30pm -</td>
<td>Yves Benhamou - Professor of Hepatology in the</td>
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<td>1.30pm</td>
<td>Department of Hepatology and Gastroenterology,</td>
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<td>Pitié-Salpêtrière Hospital, Paris, France</td>
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<td>Clinical Medicine - Virological Issues</td>
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IMPROVING ACCESS TO KNOWLEDGE + PREVENTION + RESOURCES + TREATMENT

increasing access

MONDAY 20 – WEDNESDAY 22 FEBRUARY 2006
THE SYDNEY MASONIC CENTRE, SYDNEY, AUSTRALIA

INVITED SPEAKERS
INVITED SPEAKERS

Yves Benhamou

Yves Benhamou is an associate professor of hepatology in the Department of Hepatology and Gastroenterology of Pitié-Salpêtrière Hospital in Paris. He received his MD at Pitié-Salpêtrière Hospital in 1989 and his PhD in 1999 at Paris VI University. Dr Benhamou has been the Principal Investigator from numerous clinical trials related to the management and treatment of hepatitis C and B in people with and without HIV co-infection. Dr Benhamou has authored and published many scientific papers and is currently involved in a number of clinical trials, including research into viral hepatitis. Recently, Dr Benhamou has organised and chaired the 1st European Consensus Conference on the Treatment of Chronic Hepatitis B and C in HIV-Infected Patients.

Professor of Hepatology in the Department of Hepatology and Gastroenterology
Pitié-Salpêtrière Hospital, Paris, France

Raffaele De Francesco

Raffaele De Francesco is Senior Director at the Research Institute in Molecular Biology (IRBM), Rome, Italy. He received his doctoral degree in biology from the University of Milan. Prior to joining IRBM in 1991, Dr De Francesco was a postdoctoral fellow at Emory University, Atlanta, USA, and at the European Molecular Biology Laboratory, Heidelberg, Germany. Dr De Francesco has a long-standing interest in the molecular virology of the hepatitis C virus (HCV). In particular, his research at IRBM has focused on the identification of molecular targets for antiviral therapy and on the development of HCV enzyme inhibitors as novel agents for the treatment of chronic hepatitis C.

Senior Director at the Research Institute in Molecular Biology (IRBM)
Rome, Italy

Holly Hagan

Holly Hagan PhD, an infectious disease epidemiologist, has devoted her career to studying the epidemiology and prevention of HIV and hepatitis B and C in drug users, and the etiology of blood-borne viral transmission in injection settings. Her research includes examining the role of public health and harm-reduction programs in controlling these infections. Currently she is the Principal Investigator for a cohort study of risk factors for HCV seroconversion in drug injectors, a meta-analysis of HCV epidemiology in drug users and a behavioural surveillance study. She is the Director of the Research Methods Core within the Center for Drug Use and HIV Research at the National Development and Research Institutes.

Director of the Research Methods Core, Center for Drug Use and HIV Research at the National Development and Research Institutes
Washington, USA

Brian McMahon

Brian J McMahon obtained his medical degree from the University of Washington in Seattle, then completed his internship at the LA County University of Southern California Medical Center and his residency at the University of Iowa Hospital and Clinics, Iowa City. He is currently a clinical Hepatologist and the Director of the Liver Disease and Hepatitis Program at the Alaska Native Medical Center in Anchorage. He is also a guest researcher at the Arctic Investigations Program of the Centers for Disease Control and Prevention in Anchorage and a clinical associate professor of medicine at the University of Washington in Seattle. Dr McMahon has been active in research in viral hepatitis A, B, and C, for over 30 years. He is currently the principal investigator for federally funded studies investigating hepatitis A to C in Alaska, particularly among Native Alaskan Indians. Dr McMahon acts as a reviewer for Annals of Internal Medicine, Journal of American Medical Association, Hepatology, and Gastroenterology.

Clinical Hepatologist and Director of the Liver Disease and Hepatitis Program at the Alaska Native Medical Center in Anchorage
Alaska, USA
**INVITED SPEAKERS**

**Damon Brogan**

Damon Brogan is currently the Manager of the Victorian Drug User Organisation (VIVAIDS). For nine years, before coming to VIVAIDS in 2003, Damon was the manager of the South Australian User Group (SAVIVE). He has held several executive positions within the Australian Illicit and Injecting Drug Users’ League (AIVL), including President from 1998 to 2000, and was Director of the Australian Federation of AIDS Organisations. In 1990, while at the ACTIV league in Canberra, Damon drafted Australia’s first comprehensive print resource for IDUs on viral hepatitis, *Alphabet Soup*. He was a foundation member of the Hepatitis C Council of SA and in 1997 he wrote, produced and featured as a ‘stunt arm’ in *Traces of Blood*, arguably the world’s first dedicated hepatitis C prevention video, which was funded by the South Australian Health Commission.

Manager of the Victorian Drug User Organisation (VIVAIDS)

Australia

**Graham Cooksley**

Graham Cooksley is the Professorial Research Fellow in the Discipline of Medicine at the University of Queensland. His major research interests are in pathogenesis and treatment of chronic hepatitis. He specialised in internal medicine and completed a research doctorate on protein metabolism in the liver. He did post-doctoral work in the UK on regulation of hepatic protein synthesis. He was Senior Lecturer then Associate Professor in Medical Biochemistry with research interests in cobalamin metabolism, hepatic drug metabolism and auto-immune hepatitis. In 1981 he worked on the immunopathology of chronic hepatitis at the National Institutes of Health, Bethesda, USA. He was appointed Director of the Clinical Research Centre, Royal Brisbane Hospital Foundation from 1987 to 2002. He was Convenor of several International Meetings on Hepatitis C and Hepatitis D. He has more than 200 publications in the international literature and has given over 100 invited lectures at international meetings.

Professorial Research Fellow in the Discipline of Medicine

University of Queensland, Australia

**Chris Cunningham**

Professor Chris Cunningham is Professor of Maori Health and Director of the Research Centre for Maori Health and Development at Massey University, NZ. He is a Trustee of the NZ Hepatitis Foundation and a Senior Maori Researcher.

Professor, Maori Health, Massey University, and Director, Research Centre for Maori Health & Development

New Zealand

**Geoffrey Farrell**

Geoffrey Farrell graduated from the University of Tasmania in 1970. His clinical training in gastroenterology and hepatology was at the Royal Prince Alfred Hospital, Sydney and the Royal Brisbane Hospital, Brisbane. He conducted postdoctoral research at the University of California in San Francisco. In 1980, Geoffrey returned to Sydney to establish the Liver Research Group at Westmead Hospital. He was Head of the Department of Gastroenterology and Hepatology at Westmead from 1982 until 1993. He was promoted to a personal chair in 1993, and shortly thereafter was invited to accept a chair in Hepatic Medicine. He is now the Director of the Storr Liver Unit, which has been incorporated as part of the Westmead Millennium Institute. Professor Farrell’s research interests are in drug-induced liver disease and other aspects of hepatotoxicity, viral hepatitis, non alcoholic steatohepatitis (NASH), hepatic drug metabolism, cell biology of liver injury and regeneration, and liver cancer.

Director of the Storr Liver Unit,

Westmead Millennium Institute

Australia
INVITED SPEAKERS

**Eric Gowans**
Eric Gowans is currently a Senior Principal Research Fellow at the Macfarlane Burnet Institute, Melbourne. His major interests are in the replication of hepatitis C virus and closely related viruses, and in the development of a vaccine or method for immunotherapy to prevent or treat HCV infection. He has developed a number of successful collaborative projects in Melbourne and with several other senior scientists currently holds a grant from the National Institutes of Health, USA to investigate the potential of immunotherapy in the treatment of HCV infection. He was awarded a NHMRC Research Fellowship in 2004. He was previously the Director of the Sir Albert Sakzewski Virus Research Centre in Brisbane for eight years and before that Chief Hospital Scientist in the Institute of Medical and Veterinary Science, Adelaide. Eric was instrumental in forming the Australian Centre for Hepatitis Virology, a group comprised of basic scientists who work on the hepatitis viruses.

Senior Principal Research Fellow, Macfarlane Burnet Institute Melbourne, Australia

**Fiona Tito-Wheatland**
Fiona Tito-Wheatland is a legal and social policy analyst, who has been actively involved in policy development and law reform in health, compensation and disability-related issues for over two decades in government, the community and private sectors. She chaired the Professional Indemnity Review from 1991 to 1995, and was Executive Director of a private consulting company called Enduring Solutions, which had a special focus on patient safety and quality of care. She is currently a full-time PhD student at the ANU Research School of Social Sciences, studying Accountability in Healthcare. She is an active member of Health Care Consumers Association of the ACT and an Official Visitor to the ACT’s Mental Health Service.

Legal and Social Policy Analyst ANU Research School of Social Sciences Australia

**Daniel Tarantola**
Daniel Tarantola is a Professor of Health and Human Rights, School of Public Health and Community Medicine at the University of New South Wales, working on a cross-faculty research initiative involving Medicine, Law, and Arts and Social Sciences. Early in his career, Daniel worked with the World Health Organization on large-scale international health programmes and, in the late 1980s, contributed to the creation of the WHO Global programme on HIV/AIDS. From 1991 to 1998 Daniel was a Lecturer in the Department of Population and International Health of the Harvard School of Public Health and a Senior Associate of the Harvard-based François-Xavier Bagnoud Center for Health and Human Rights. From 1998 to 2004 Daniel rejoined the WHO headquarters in Geneva as a Senior Policy Adviser to the Director General and, additionally during the latter part of this period, as Director of the WHO, Department of Immunization, Vaccines and Biologicals.

Professor of Health and Human Rights, School of Public Health and Community Medicine University of New South Wales Australia
extending and enhancing human life

Bristol-Myers Squibb Australia

extending and enhancing human life
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MONDAY 20 – WEDNESDAY 22 FEBRUARY 2006
THE SYDNEY MASONIC CENTRE, SYDNEY, AUSTRALIA

GENERAL INFORMATION
GENERAL INFORMATION

Disclaimer
All information in the Conference Program is correct at the time of printing. The Conference Secretariat reserves the right to alter the Program in the event of unforeseen circumstances. All speakers were invited to contribute abstracts for inclusion in the Conference Handbook. Unfortunately, not all speakers were able to provide us with their abstracts at the time of printing. The Conference Secretariat accepts no responsibility for errors, misprints or other issues with abstracts contained in this handbook.

Venue
The venue will host the conference sessions, poster presentations, oral poster sessions, conference meals and the exhibition. The Sydney Masonic Centre is situated in the city of Sydney.

Sydney Masonic Centre
(SMC Function and Convention Centre)
66 Goulburn Street
Sydney NSW 2000
Australia
Ph. +61 2 9284 2835
Fax +61 2 9284 2883
www.smc.au.com

The Centre is a short stroll from both Museum and Central Stations. Casual underground parking is available for $30 a day. Additional parking space can be found at the Wilson's parking station diagonally opposite the Masonic Centre.

Distances from transport and attractions

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<tr>
<th>FROM</th>
<th>DISTANCE</th>
<th>TIME</th>
<th>BY</th>
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<tr>
<td>Airport</td>
<td>8 kms</td>
<td>15 mins</td>
<td>Train/Bus/Car</td>
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<td>Central Station</td>
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<td>Walk</td>
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<tr>
<td>Darling Harbour</td>
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<td>Monorail/Walk</td>
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<tr>
<td>Museum Station</td>
<td>50 m</td>
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<td>Walk</td>
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Registration Desk
Delegates are required to register on Monday 20 February 2006 between 11.00am and 1.30pm. Please complete registration prior to the plenary session at 1.30pm.

Please proceed to the Registration Desk at Level 1 Foyer. The Registration Desk hours are:

Monday 20 February 2006: 11.00am – 5.30pm
Tuesday 21 February 2006: 7.30am – 5.30pm
Wednesday 22 February 2006: 7.30am – 5.30pm

You will be given your satchel bag and name badge at registration. The satchel bag will contain the conference handbook and other materials for use during the conference.

Name Badges
For security purposes all attendees must wear their name badge at all times whilst in the Sydney Masonic Centre. Entrance to the exhibition will be limited to badge holders. If you misplace your name badge, please advise staff at the Registration Desk.

Media Room
Located in the Composite Room on the ground level, the media room will serve the needs of journalists covering the conference. Services provided to journalists who have registered for the conference will include computer work stations, printer, telephone and Internet connection. This room will also be available for interviews.

Speaker Preparation Room
Speaker preparation room will be located in the Tuscan Room on the ground level of the Sydney Masonic Centre. This room will be open at the following times:

Monday 20 February 2006: 11.00am - 5.30pm
Tuesday 21 February 2006: 7.30am – 5.30pm
Wednesday 22 February 2006: 7.30am – 3.30pm

All speakers must take their presentation to the speaker preparation room a minimum of four hours prior to their presentation or the day before if presenting at a morning session.
GENERAL INFORMATION

Internet Area
An Internet area will be available in the Level 1 Foyer.

Mobile Phones/Beepers/Pagers
As a courtesy to all delegates and speakers, please switch off, or set to silent, your mobile phones, beepers and pagers during all sessions.

Personal Mail
The conference organisers do not accept responsibility for personal mail. Please have all mail sent to your accommodation address.

Messages
A message board will be located at the conference Registration Desk. Please advise potential callers to contact the Sydney Masonic Centre and ask for the Viral Hepatitis Conference Secretariat Office. No guarantee can be given to deliver your messages personally.

No Smoking
This conference has a no smoking policy.

Trade Exhibition
An exhibition will be held in the Banquet Hall on Level 1 of the Sydney Masonic Centre. The Viral Hepatitis Conference exhibition will be open from Monday 20 February at 5:00pm and conclude on Wednesday 22 February at 3.30pm.

The exhibition area will be open during the following hours:

- Monday 20 February 2006: 5.00pm – 6.30pm (includes the Welcome Reception)
- Tuesday 21 February 2006: 8.30am – 5.30pm
- Wednesday 22 February 2006: 8.30am – 3.30pm

Poster Displays
Posters will be displayed in the foyer on Level 1, grouped in their disciplines in the areas of Basic Science, Clinical Medicine, Community Responses, Epidemiology, Public Health and Prevention and Social Research.

Sydney Commercial Business Hours
Businesses are open Monday to Friday 8am to 5pm and banks are open Monday to Friday 9am to 5pm. Shopping is available Monday to Friday 9am to 5pm. Late-night shopping is on Thursday or Friday to 9pm. Most major suburban shopping malls are open on Saturday and Sunday all day (or at least from 10am to 2pm).

Emergency Services
000 is the emergency number for Police, Fire and Ambulance.

Tickets
Tickets will be required for entry into all Associated Events. All tickets will be given out on registration – or printed on the name badge. If you would like to purchase tickets to the Conference Dinner you may do so up until 4pm on Monday 20 February at the Registration Desk. No refunds will be given on cancellation of function tickets. If you wish to transfer your ticket to another delegate a printed ticket will be given to the new delegate.

Catering
Morning tea, lunch and afternoon tea will be served in the Banquet Hall on Level 1 near the trade exhibition and poster display. Morning tea will be served from 10.30am to 11.00am, lunch from 12.30pm to 1.30pm and afternoon tea from 3.00pm to 3.30pm each day.
LOCATION MAP – SYDNEY
ASSOCIATED EVENTS

Welcome Cocktail Party & Exhibition Opening
5.00pm – 6.30pm, Monday 20 February
The Sydney Masonic Centre
Banquet Hall on Level 1

The Welcome Cocktail Party is an excellent opportunity to relax at the end of the first day of the conference. The exhibition will open at this time, giving delegates the first opportunity to meet the exhibitors. Drinks and canapés will be served.

Viral Hepatitis Conference Dinner
7.00pm, Tuesday 21 February
The Dockside

The Dockside is a stunning modern venue for dinner. Affording panoramic views of Cockle Bay Wharf and Darling Harbour, Dockside boasts one of Sydney’s most dazzling locations. The address is the Balcony Level, Cockle Bay Wharf at Darling Park.
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THE SYDNEY MASONIC CENTRE, SYDNEY, AUSTRALIA

EXHIBITION
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<td>Schering-Plough</td>
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<tr>
<td>Bristol-Myers Squibb</td>
<td>4, 5 &amp; 6</td>
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<tr>
<td>Roche Products</td>
<td>7, 8 &amp; 9</td>
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<td>Australian Government Department of Health &amp; Ageing</td>
<td>10 &amp; 11</td>
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<td>Reckitt Benckiser</td>
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<td>The Australian Hepatitis Council &amp; State/Territory Hepatitis Councils</td>
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<td>ACT-HBV</td>
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<td>Australasian Hepatology Association</td>
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<td>National Centre in HIV Social Research</td>
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<td>School of Medicine University of Queensland</td>
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<td>Australian Injecting &amp; Illicit Drug Users League (AIVL)</td>
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<tr>
<td>Gilead Sciences</td>
<td>21 &amp; 22</td>
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<td>Terumo Corporation Australian Branch.</td>
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EXHIBITION AREA FLOOR PLAN – BANQUET HALL
increasing access

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THE SYDNEY MASONIC CENTRE, SYDNEY, AUSTRALIA
EXHIBITOR DIRECTORY

ACT-HBV (Booth 15)
The mission of ACT HBV initiative is to enhance the quality and outcomes of care for patients with hepatitis B through the timely education and dissemination of diagnostic and treatment recommendations to physicians and providers who manage patients with hepatitis B as new studies and treatment approaches emerge.

Contact
Stephen Locarnini
Victorian Infectious Disease Reference Laboratory
10 Wreckyn Street
NORTH MELBOURNE VIC 3051
Australia
Phone: 03 93422637
Fax: 03 93422666
Email: stephenlocarnini@compuserve.com

Australasian Society for HIV Medicine (Booth 16)
The Australasian Society for HIV Medicine (ASHM) is the peak representative professional body for medical practitioners and other health care workers in Australasia who work in HIV and related disease areas. It was formed in 1988 (as the Australian Society of AIDS Physicians), changed its name in 1989 to reflect a broader membership base and was incorporated in New South Wales in 1990. It became a registered charity in 2003.
ASHM is a key partner in the Australasian and regional response to HIV, hepatitis and related diseases. It works closely with government, advisory bodies, community agencies and other professional organisations. It conducts broad education programs in HIV and viral hepatitis for medical practitioners, health care providers and allied health workers and manages programs of continuing medical education. The ASHM International Program focuses on collaborations and partnerships to provide training and support for professional health care workers in regional countries, including Papua New Guinea, the Pacific, Timor Leste and Indonesia. ASHM is governed by an elected voluntary board and managed by a secretariat. It receives support from the Australian Government’s Department of Health & Ageing, the Australian Government’s Agency for International Development (AusAID), State and Territory Departments of Health and the private sector, and has established the ASHM Foundation which raises funds in support of educational activities. ASHM convenes committees on a range of issues affecting its members, including education, HIV treatment, viral hepatitis, international/development issues and professional affairs. ASHM conducts an annual medical scientific conference, and the conference team provides professional conference organisation to third parties in the sector.

Contact
Australasian Society for HIV Medicine (ASHM)
LMB 5057
DARLINGHURST NSW 1300
Australia
Phone: +61 2 8204 0700
Fax: +61 2 9212 2382
Email: ashm@ashm.org.au
Web: www.ashm.org.au

Australian Government Department of Health and Ageing (Booth 10 & 11)
The Australian Government Department of Health and Ageing is responsible for leading the national response to hepatitis C. The Department has recently released the National Hepatitis C Strategy 2005-2008 which provides the framework for the national response. The Department works closely with the Hepatitis C Subcommittee of the Ministerial Advisory Committee on AIDS, Sexual Health and Hepatitis, state and territory governments and non-government organisations such as the Australian Injecting and Illicit Drug Users League, the Australian Hepatitis Council and the Australasian Society for HIV Medicine. The Department facilitates policy formulation, administers funding for the Hepatitis C Education and Prevention Initiative, and promotes best practice in both the prevention of hepatitis C and the treatment of people living with hepatitis C.

Contact
Ms Julianne Quaine
Director
Hepatitis C Section
Department of Health and Ageing
MDP 13, GPO Box 9848
CANBERRA ACT 2601
Australia
Phone: 02 6289 4023
Fax: 02 6289 3677
Email: Julianne.Quaine@health.gov.au
The Australian Hepatitis Council & State/Territory Hepatitis Councils
(Booth 14)

The Australian Hepatitis Council (AHC) is the peak organisation representing the interests of all people with chronic viral hepatitis at a national level. The State and Territory Hepatitis Councils are members of the AHC. The Australian Hepatitis Council engages in national leadership and representation; advocacy; policy & resource development; capacity building of the sector and national coordination of the community based response. The State & Territory Hepatitis Councils provide information, referrals and support services to people with or affected by viral hepatitis (predominantly hepatitis C). They also provide education and support to other agencies aimed at reducing transmission and promoting community awareness about viral hepatitis.

Contact
Helen Tyrrell
Executive Officer
Australian Hepatitis Council
PO Box 716
WODEN ACT 2606
Australia
Phone: 02 6232 4257
Fax: 02 6232 4318
Email: helen@hepatitisaustralia.com
Web: www.hepatitisaustralia.com

Australian Injecting & Illicit Drug Users League (AIVL) - (Booth 20)

The Australian Injecting and Illicit Drug Users League (AIVL) is the peak national organisation representing state and territory peer-based drug user organisations and issues of national significance for people who use or have used illicit drugs. With over 90 per cent of all new hepatitis C infections attributed to unsafe injecting drug use practices, as an organisation AIVL represents the people most affected by hepatitis C in the Australian community. AIVL is a peer-based organisation, run by and for people who use or have used illicit drugs, and receives the majority of its funding for national hepatitis C prevention, treatment, care and support activities for people who inject drugs.

Contact
Level 2/112-116 Alinga Street
CANBERRA ACT 2600
Australia
GPO Box 1552
CANBERRA ACT 2601
Phone: 02 6279 1600
Fax: 02 6279 1610
Email: info@aivl.org.au
Web: www.aivl.org.au

Bristol-Myers Squibb (Booths 4, 5 & 6)

Bristol-Myers Squibb is a global pharmaceutical and related health care products company whose mission is to extend and enhance human life. Operating in Australia since 1930, Bristol-Myers Squibb is dedicated to discovering and developing innovative, cost-effective medicines addressing significant medical needs in key disease areas. With headquarters at Noble Park, Victoria, the company operates four divisions in Australia: Pharmaceuticals, Technical Operations (manufacturing), ConvaTec (ostomy and wound care) and Medical Imaging.

Contact
Lorelle Leonard
Secretary, Oncology & Virology
Bristol-Myers Squibb
PO Box 39
NOBLE PARK VIC 3174
Australia
Phone: 03 9213 4080
Fax: 03 9701 1526
Email: lorelle.leonard@bms.com
**EXHIBITOR DIRECTORY**

**Gilead Sciences (Booth 21 & 22)**
Gilead’s mission is to advance patient care by developing ground-breaking therapeutics to treat life-threatening infectious diseases. We apply the best of biopharmaceutical science to create innovative medicines that bring new hope in the battles against HIV/AIDS (Truvada, Emtriva, Viread), chronic hepatitis B (Hepsera), serious bacterial and systemic fungal infections (AmBisome).

**Contact**
Gilead Sciences
Level 1, 128 Jolimont Road
EAST MELBOURNE VIC 3002
Australia
Phone: +61 (0)3 9272 4400
Fax: +61 (0)3 9272 4411
Web (Australia): www.gileadsciences.com.au
Web (world wide): www.gilead.com

**School of Medicine University of Queensland - HIV & HCV Education Projects (Booth 19)**
The HIV & HCV Education Projects is a unit of the School of Medicine of The University of Queensland and is based in Brisbane, Australia. The HIV & HCV Education Projects has been operating since 1998 and is recognised at a state, national and international level as a centre of expertise in clinical education. By 2001 the HIV & HCV Education Projects were providing clinical education in Hepatitis C to professionals in a range of health disciplines including nurses, medical practitioners, dentists, allied health and community health workers. To date the HIV & HCV Education Projects has delivered over 140 educational training programs to more than 4000 health professionals on a state, national and international level since 2001. Education courses in Hepatitis C have included the 'Update in Hepatitis C for Medical Practitioners', the 'Education Course in Hepatitis C for Health Care Workers’ and the ‘Hepatitis C and Mental Health Workshop for Mental Health Workers’. The unit also provides comprehensive clinical education in HIV and Sexual Health.

**Contact**
School of Medicine – The University of Queensland
288 Herston Road
HERSTON QLD 4006
Australia
Phone: 07 3346 4813
Fax: 07 3346 47570
Email: hivandhcvprojects@uq.edu.au

**National Centre in HIV Social Research (Booth 18)**
The National Centre in HIV Social Research (NCHSR) was established in 1990 with funding from the Commonwealth government and is located at The University of New South Wales. The NCHSR conducts social research into the prevention and treatment of HIV, hepatitis C, sexually transmissible diseases and other communicable diseases, with special reference to gay men, injecting drug users and other marginalised groups, and a growing program of international research, particularly in the Asia-Pacific region. The NCHSR works with affected communities and NGOs so that its research is both informed by community needs and informs policy and practice.

**Contact**
Maude Frances
Research Resource Manager
National Centre in HIV Social Research
Webster Building
University of New South Wales
SYDNEY, NSW 2052
Australia
Phone: 61 2 9385 6405
Fax: 61 2 9385 6455
Email: m.frances@unsw.edu.au
Web: http://nchsr.arts.unsw.edu.au

**Reckitt Benckiser (Booth 13)**

**Contact**
Telea Slavin
Product Manager- Buprenorphine
AUS - NZ
Reckitt Benckiser
44 Wharf Road
WEST RYDE
NSW 2114
Australia
Phone: 02 98572025
Fax: 02 93254018
Mobile: 0412006481
Email: telea.slavin@reckittbenckiser.com
Roche Products (Booths 7, 8 & 9)
Roche is one of the world’s leading research-oriented healthcare groups. For more than 100 years, Roche has been active in the discovery, development, manufacture and marketing of innovative healthcare solutions. Roche’s products and services address prevention, diagnosis and treatment of diseases, thus enhancing well-being and quality of life. A core therapeutic area of focus is virology and some of the innovative products developed by Roche include Pegasys® (peginterferon alfa-2a) for hepatitis B and C and Pegasys® RBV ® (peginterferon alfa-2a and ribavirin) for hepatitis C. Our mission is to create, produce and market innovative solutions of high quality for unmet medical needs. We do this in a responsible and ethical manner and with a commitment to sustainable development respecting the needs of the individual, the society and the environment.

Contact
Tracy Jones-Bower
Associate Product Manager - Pegasys
Roche Products Pty Limited
4-10 Inman Road
DEE WHY NSW 2099
Australia
Phone: +61-2-9454-9512
Fax: +61-2-9454-9284
Mobile: 0408 449 909
Email: tracy.jones-bower@roche.com

Schering-Plough (Booths 1, 2 & 3)
Schering-Plough is a global pharmaceutical company committed to discovering and bringing to market new therapies and treatment programs that can improve people’s health and save lives. The Company’s core product lines are in allergy/respiratory, anti-infective/anti-cancer, dermatologicals and cardio-vasculars, with a growing animal health business, complemented by leading over-the-counter and personal care brands. Schering-Plough has established itself as a leader in biotechnology, with strong research positions in genomics and gene therapy. With headquarters in Kenilworth, New Jersey USA, Schering-Plough International offers its products in more than 125 markets throughout the world, maintains subsidiaries in some 40 nations and has manufacturing facilities in over 20 of these.

Contact
Tim Behrens
11 Gibbon Road
BAULKHAM HILLS NSW 2153
Australia
Phone: 02 9852 7444
Fax: 02 9852 7435
Email: tim.behrens@spcorp.com
Web: www.schering-plough.com

Terumo Corporation Australian Branch (Booth 23)
Terumo is proud to be the Silver Sponsor of the 5th Australasian Viral Hepatitis Conference. Safety and infection prevention is a priority for Terumo. Terumo actively supports the development of innovative products and programs aimed at reducing incidence of preventable injuries to both healthcare workers and patients. Terumo is a research and development company which is recognised worldwide for its leading-edge technology and the outstanding quality of its systems. The wide range of innovative products within the Angiographic and interventional, Cardiovascular, Laboratory, Hospital and Transfusion Systems comply with the highest medical standards and constantly contribute to the health care of people in more than 150 countries. Every day, as health care professionals, you are working to ensure life and to contribute to the well being of your patients. At Terumo we are committed to bringing you solutions for the safe transfer of the vital fluids to keep life flowing. Please visit the Terumo booth to see our extensive range of Safety-Engineered Devices.

Contact
Level 4, Building B, 11 Talavera Road
MACQUARIE PARK NSW 2113
Australia
Toll Free Phone: 1800 036 185
Toll Free Fax: 1800 334 190
Email: CS_Australia@terumo.co.jp
increasing access

MONDAY 20 – WEDNESDAY 22 FEBRUARY 2006
THE SYDNEY MASONIC CENTRE, SYDNEY, AUSTRALIA

FULL CONFERENCE PROGRAM
## 5TH AUSTRALASIAN VIRAL HEPATITIS CONFERENCE
### MONDAY 20 FEBRUARY 2006

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
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<tbody>
<tr>
<td>11.00am - 1.30pm</td>
<td>Registration</td>
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<tr>
<td>1.30pm - 1.40pm</td>
<td><strong>Opening Plenary &amp; Conference Overview</strong></td>
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<tr>
<td>1.30pm - 1.40pm</td>
<td>Grand Lodge</td>
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<td>Chairs: Graeme Macdonald and Eric Gowans</td>
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<tr>
<td>1.30pm - 1.45pm</td>
<td>Welcome to the Land by Allen Madden</td>
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<td>Metropolitan Local Aboriginal Land Council</td>
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<tr>
<td>1.40pm - 1.45pm</td>
<td>Official Welcome by Minister Abbott</td>
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<td></td>
<td>Australian Minister for Health and Ageing</td>
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<tr>
<td>1.45pm - 2.10pm</td>
<td>Graeme Macdonald - Associate Professor</td>
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<td></td>
<td>Centre For Diabetes And Endocrine Research,</td>
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<td>University Of Queensland</td>
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<td>Overview of Conference and Theme of ‘Increasing Access’</td>
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<tr>
<td>2.10pm - 2.35pm</td>
<td>Brian McMahon - Clinical Hepatologist</td>
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<td>Alaska Native Medical Center in Anchorage, AK</td>
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<td>United States Guidelines on Management of CHC and CHB</td>
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<tr>
<td>2.35pm - 3.00pm</td>
<td>Damon Brogan - Manager of the Victorian Drug User Organisation</td>
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<td>From HIV Activism to HCV Fatalism</td>
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<tr>
<td>3.00pm - 3.30pm</td>
<td>Afternoon Tea - Level 1 Foyer</td>
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<tr>
<td>3.30pm - 5.00pm</td>
<td><strong>Plenary - Challenges in Viral Hepatitis</strong></td>
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<tr>
<td>3.30pm - 4.00pm</td>
<td>Daniel Tarantola - Professor of Health and Human Rights, School of Public Health and Community Medicine, UNSW, Australia</td>
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<td>Stigma, Discrimination and Barriers to Treatment</td>
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<td>4.00pm - 4.30pm</td>
<td>Holly Hagan - Director of the Research Methods Core, Center for Drug Use and HIV Research at the National Development and Research Institutes, USA</td>
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<td>Protective Factors for HCV Infection</td>
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<tr>
<td>4.30pm - 5.00pm</td>
<td>Graeme Cooksley - Professorial Research Fellow in the Discipline of Medicine, University of Queensland, Australia</td>
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<td>Hepatitis B in Australasia</td>
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<tr>
<td>5.00pm - 6.30pm</td>
<td>Welcome Drinks and Posters - Sydney Masonic Centre, Banquet Hall</td>
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<tr>
<td>Time</td>
<td>Concurrent Session - Basic Science - HCV Expression and Analysis</td>
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<tr>
<td>9.00am</td>
<td>Dunn S - Nurse Practitioners: Pioneers in Difficult Times</td>
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<tr>
<td>10.00am</td>
<td>Hellard M - Australian Trial in Acute Hepatitis C (ATAHC): Baseline Behavioural Data</td>
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<tr>
<td>10.30am -</td>
<td>Morning Tea - Banquet Hall</td>
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<td>11.00am -</td>
<td>Plenary - Basic Science</td>
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<td>11.00am -</td>
<td>Symposium - Shared Care</td>
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<tr>
<td>12.30pm -</td>
<td>Social Research - Prevention</td>
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<tr>
<td>11.00am -</td>
<td>Pathogenesis of Hepatitis C Liver Injury: The Interface Between Basic Science and Clinical Management</td>
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<tr>
<td>11.00am -</td>
<td>What’s in the HCV Drug Therapy Pipeline?</td>
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<td>11.30am -</td>
<td>Concurrent Session - Shared Care</td>
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<tr>
<td>1.30pm - 3.00pm</td>
<td>Workshop - Community and Social Research</td>
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<tr>
<td>1.30pm - 3.00pm</td>
<td>Symposium - Public Health and Prevention - Hepatitis B</td>
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<tr>
<td>1.30pm - 3.00pm</td>
<td>Symposium - Basic Science - An HBV Smorgasbord</td>
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<tr>
<td>1.45pm - 2.00pm</td>
<td>What's in the HCV Drug Therapy Pipeline?</td>
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<tr>
<td>1.30pm - 3.00pm</td>
<td>The HCV Glycoproteins, Their Interactions with the Viral Entry Receptor CD81 and Membrane Fusion</td>
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<td>1.30pm - 3.00pm</td>
<td>Outcomes from the GP Think Tank on HCV Care in the Community</td>
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<tr>
<td>2.00pm</td>
<td>Black E - What Injecting Drug Users Don't Understand About Hepatitis C</td>
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<tr>
<td>2.15pm</td>
<td>Mellor K - Achieving Equity of Access to Treatment for Hepatitis C Virus: Evaluation of a Patient-Triggered Model of Shared Care</td>
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<tr>
<td>2.30pm</td>
<td>Dore G, (Nguyen V) - Highly Endemic Hepatitis B Infection in Rural Vietnam</td>
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<tr>
<td>2.45pm</td>
<td>O'Brien M, Madden A - Research, Relationships And Knowledge Making</td>
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<tr>
<td>2.50pm</td>
<td>Fenech M - Shared Care in GLD: 5 years on</td>
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<tr>
<td>3.00pm</td>
<td>Discussion</td>
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<tr>
<td>3.20pm</td>
<td>Chang J - The Specificity and Phenotype of Intrahepatic and Circulating HBV-specific T-cells Differ in Chronic HBV Infection</td>
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<tr>
<td>3.25pm</td>
<td>Bartholomeusz A - Molecular Modelling of Hepatitis B Virus Polymerase: Comparison of Adefovir, Entecavir and Lamivudine Resistance</td>
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<td>3.45pm</td>
<td>Wood N, Heron L - Long Term Persistence of Hepatitis B Immunity in Children who Received Hepatitis B Vaccinations in Infancy</td>
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<tr>
<td>3.50pm</td>
<td>Bryant J - Hepatitis C And Injecting Related Discrimination in New South Wales</td>
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<td>4.10pm - 4.30pm</td>
<td>Caris S - Strategic Issues for Smaller Communities</td>
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<td></td>
<td>Paljor S, Luisi B - The National Hepatitis C Project for People From Culturally and Linguistically Diverse (CALD) Backgrounds</td>
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<td>4.30pm - 4.50pm</td>
<td>Read V - Meeting the Challenge of Developing Prison Based Hepatitis C and Other Blood-Borne Viruses Education Programs</td>
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<td>Boonwaat L - A Review of the Outcomes of Hepatitis C Treatment in New South Wales</td>
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<td>Benhamou Y - HCV/HIV and HBV/HDV Co-infections</td>
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<tr>
<td>7.00pm - 11.00pm</td>
<td>Conference Dinner - The Dockside</td>
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<td>Launch of the 'Aboriginal Women Prisoners and Hepatitis C' Video</td>
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<td>Discussion</td>
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## 5th Australasian Viral Hepatitis Conference

### Wednesday 22 February 2006

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<tr>
<th>Time</th>
<th>Concurrent Session - Social Research Living with Hepatitis C</th>
<th>Concurrent Session - Clinical Medicine - Treatment Related Issues</th>
<th>Concurrent Session - Epidemiology</th>
<th>Oral Poster Session</th>
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<tbody>
<tr>
<td>9.00am - 9.15am</td>
<td>Winter RJ - Responses to Diagnosis: Reactions Amongst Injecting Drug Users on Discovery of an HCV, HBV or HIV Positive Diagnosis</td>
<td>Dore G - Australian Trial in Acute Hepatitis C (ATAHC): Preliminary Findings</td>
<td>Amin J - Causes of Death Following Diagnosis of Hepatitis B or C Infection: A Large Community Based Linkage Study</td>
<td>9.00am - 9.10am</td>
</tr>
<tr>
<td>9.15am - 9.30am</td>
<td>Harris M - I Think There is No Support At All: You are a Total Lone Wolf: The Importance of Social Supports in Coping with Hepatitis C</td>
<td>Dore G - Cognitive and Mood Effects of Pegylated Interferon ALFA-2A and Ribavirin Combination Therapy in HCV Monoinfected and HIV/HCV Coinfected Individuals</td>
<td>Copland J - Hepatitis C Virus Infection in South Australia: Duration of Infection and Burden of Disease Estimates</td>
<td>Oral Poster Session Introduction</td>
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<tr>
<td>9.45am - 10.00am</td>
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<td>Tapping L - Increasing Access to Blood-borne Virus Services: Innovative Strategy for Partners and Families of People in Prison</td>
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<tr>
<td>10.00am - 10.15am</td>
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<td>Tenison F - Establishing Integrated Hepatitis Services in Opioid Substitution Therapy Settings: A Service Development and Partnership Initiative in the SWAHS</td>
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<tr>
<td>10.15am - 10.30am</td>
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<td>Gao J - Efforts to Increase Awareness of Hepatitis C Among Arabic-speaking Background General Practitioners in NSW</td>
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WEDNESDAY 22 FEBRUARY 2006

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<tbody>
<tr>
<td>9.35am - 9.40am</td>
<td>Jewell S - “Fits Plus” AIVL’s New Approach to Preventing Hepatitis C Amongst Young Injectors</td>
</tr>
<tr>
<td>9.40am - 9.45am</td>
<td>Kelsall J - ‘One Foot In The Door’. The Involvement Of Peer Workers In Reducing Barriers And Increasing Access To HCV Treatment For Injecting Drug Users.</td>
</tr>
<tr>
<td>9.45am - 9.50am</td>
<td>Beasley H - Heplink: A Sustainable Workforce Development Initiative</td>
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<tr>
<td>10.00am - 10.15am</td>
<td>Olsen A - Before You Know It You Have Slipped Into The Under Class, You Are Not Even The Working Class Anymore, Women, Inequality and Hepatitis C</td>
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<tr>
<td>10.00am - 10.15am</td>
<td>Strasser S - Hepatitis C, Hepatitis B and Hepatocellular Carcinoma</td>
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<td>10.00am - 10.15am</td>
<td>Li J - Hepatitis C Virus Seroprevalence and Risk Behaviours Among Indigenous Australian IDUs 1995-2004</td>
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<tr>
<td>9.50am - 9.55am</td>
<td>Aitken C - Hepatitis C Virus Immunovirology in a Social Network of Injecting Drug Users</td>
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<tr>
<td>9.55am - 10.00am</td>
<td>Lim M, Nguyen G - Use Of A Hepatitis C Virus (HCV) Surveillance System For Recruitment of Patients With Newly Acquired HCV Into A Clinical Trial</td>
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<tr>
<td>10.00am - 10.05am</td>
<td>Matthews G - Reversal Of End Stage Liver Disease In Patients With HIV/HBV-Related Cirrhosis In A Clinical Trial</td>
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<tr>
<td>10.05am - 10.10am</td>
<td>Lambert S - General Practitioners And Hepatitis C: Results Of The Queensland Statewide Survey Programme</td>
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<tr>
<td>10.10am - 10.15am</td>
<td>Donohue W - Improvements in Health in Hepatitis C Antibody Positive Participants in a Health Programme</td>
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<tr>
<td>10.15am - 10.20am</td>
<td>Brener L - Measuring Attitudes Towards Injecting Drug Users and Hepatitis C</td>
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<tr>
<td>10.20am - 10.25am</td>
<td>Brener L - Implicit and Explicit Attitudes of Health Care Workers Toward their Clients with HCV Infection</td>
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<tr>
<td>10.15am - 10.30am</td>
<td>Polis S - National Surveillance For Hepatitis C Virus Infection In Australian Children</td>
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<td>10.15am - 10.30am</td>
<td>Macdonald G - Specialists Medical Practitioners and Hepatitis C Knowledge of HCV, Results Of A Queensland Survey</td>
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<td>10.15am - 10.30am</td>
<td>Coupland H - Increasing Access and Uptake of Hepatitis C treatment by Indo-Chinese Injecting Drug Users</td>
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<tr>
<td>10.30am - 10.45am</td>
<td>Kozak G - My Whole Life Gave Me Stress: The Experience of Being HCV Positive, Symptomatic and On Opioid Replacement Treatment</td>
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<tr>
<td>10.45am - 10.55am</td>
<td>Klein G - My Whole Life Gave Me Stress: The Experience of Being HCV Positive, Symptomatic and On Opioid Replacement Treatment</td>
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<tr>
<td>10.55am - 11.05am</td>
<td>Sasadeusz J - Pegylated Interferon Alfa-2A Plus Ribavirin For Patients With Hepatitis C (CHC) on Drug Dependency Treatment: Results From The Melbourne Study</td>
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<td>12.00pm - 2.00pm</td>
<td>Lunch Break</td>
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<tr>
<td>10:25am</td>
<td>Haber P - Hepatitis C Outreach Service Within a Community Based Opioid Pharmacotherapy Clinic</td>
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<tr>
<td>10:30am</td>
<td>1st Session - Social Research - Treatment Clinical Medicine - Virological Issues</td>
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<tr>
<td>12.30pm</td>
<td>Symposium - Speaking From Experience</td>
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<tr>
<td>1.30pm</td>
<td>Morrison M - Social Medicine - Virological Issues</td>
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<tr>
<td>1.45pm</td>
<td>Wang A - Hepatitis C Viral Load Monitoring Predicts Development of Early Sub-acute Liver Failure Post Liver Transplant</td>
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<tr>
<td>1.45pm</td>
<td>Harris M - I Was Told That I Have Five Years To Live: Hepatitis C And The Medical Encounter</td>
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<tr>
<td>1.50pm</td>
<td>Shackel N - Hepatitis C Viral Load Monitoring Predicts Development of Early Sub-acute Liver Failure Post Liver Transplant</td>
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<td>1.50pm</td>
<td>O'Reilly M - A Patient's Perspective on Treatment &amp; The Decision Process</td>
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<td>2.00pm</td>
<td>Levy M - HBV in the Antenatal Setting; The Role of the More Sensitive PCR Amplification Based HBV DNA Assay</td>
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<tr>
<td>2.00pm</td>
<td>Sasadeusz J - Surveillance of Hepatitis B Virus (HBV) Mutations During Tenofovir (TDF) Treatment In HIV and HBV Co-Infected Individuals</td>
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<tr>
<td>2.15pm</td>
<td>Block J - Pregnancy, Childbirth and Babies</td>
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<tr>
<td>2.20pm</td>
<td>Hopwood M - Strengths-Based Assessment, Social Support and Resilience During Treatment for Hepatitis C Infection</td>
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<tr>
<td>2.20pm</td>
<td>Temple-Smith M - Considering Treatment for Hepatitis C</td>
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<td>Hogwood M - Strengths-Based Assessment, Social Support and Resilience During Treatment for Hepatitis C Infection</td>
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**Morning Tea** - Banquet Hall
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<tr>
<td>2.40pm - 2.50pm</td>
<td>Redsull L - How Individuals Cope: A Study of Side Effects and Coping Strategies Adopted During Treatment for Hepatitis C Infection</td>
</tr>
<tr>
<td>2.30pm - 2.45pm</td>
<td>Singh K - HIV-HBV Co-Infection: Analysis of Resistance Mutations in the Hepatitis B Virus Polymerase Selected During Therapy in Two Patients With Fulminant Liver Disease Receiving Tenofovir</td>
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<td>2.10pm - 2.20pm</td>
<td>Poeder F - I've Got Hep C and You're Suggesting I Breast Feed - No Way Jose</td>
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<tr>
<td>2.50pm - 3.00pm</td>
<td>Discussion</td>
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<tr>
<td>2.45pm - 3.00pm</td>
<td>Lang C - Presence of Symptoms Clusters and Quality of Life in People Living with Chronic Hepatitis C Infection</td>
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<td>3.30pm - 5.00pm</td>
<td>Closing Plenary</td>
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<tr>
<td>3.30pm - 4.00pm</td>
<td>Conference Committee Panel Discussion - Graeme Macdonald, Eric Gowans, Campbell Aitken, Helen Tyrrell, Carla Treloar</td>
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<tr>
<td>4.00pm - 4.25pm</td>
<td>Wrap up of Streams and Discussion of Theme of Conference</td>
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<td>4.00pm - 4.40pm</td>
<td>Conference Committee with International Speakers Panel Discussion - Yves Benhamou, Brian McMahon, Holly Hagan, Raffaele De Francesco, Chris Cunningham</td>
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<td>4.25pm - 4.40pm</td>
<td>Panel Discussion - Increasing Access and Future</td>
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<td>Robert Batey - Chair of Hepatitis C Council</td>
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<td>MACASHH and the Future for Viral Hepatitis in Australia and the Region</td>
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<td>Graeme Macdonald - Associate Professor, Centre For Diabetes And Endocrine Research, University Of Queensland</td>
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<td>Conference Wrap Up</td>
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MONDAY 20 – WEDNESDAY 22 FEBRUARY 2006
THE SYDNEY MASONIC CENTRE, SYDNEY, AUSTRALIA
UNITED STATES GUIDELINES ON THE MANAGEMENT OF CHRONIC HEPATITIS B AND C

McMahon B
Alaska Native Medical Center, Anchorage Alaska, USA

Persons who are chronically infected with hepatitis B virus (HBV) and hepatitis C virus (HCV) are at increased risk of developing cirrhosis and hepatocellular carcinoma (HCC) and need regular follow-up. Antiviral therapy for these infections can reduce the risk of complications. However not all persons require treatment, as many persons may have non progression, slowly progressive or even regressive liver necroinflammation and fibrosis. Antiviral therapy cannot “cure HBV” and prolonged treatment may be necessary. Treatment for HCV can result in a permanent remission but over half of treated persons fail therapy, and up to one third cannot tolerate treatment as the medications often cause unpleasant and dangerous side effects. Treatment for both HBV and HCV is expensive. For these reasons guidelines have been established to select the best candidates for treatment. For HBV, persons with persistently elevated liver enzymes, an HBV DNA level above 2,000 IU/ml (10^4 genomic copies/ml), and more than mild hepatitis and fibrosis are candidates for treatment. Medications licensed in the US for HBV include alpha Interferons, both regular and pegylated and oral nucleoside/nucleotide analogues including lamivudine, adefovir and entecavir. In addition, two other medications licensed for HIV, Emtricitabine and Tenofovir, are also effective against HBV. Though nucleoside/nucleotide analogues have few adverse side effects, the primary problem with these drugs is the development of resistance. Suitable candidates for treatment for HCV are persons with elevated liver enzymes, HCV RNA positive and moderate or severe hepatic necroinflammation and/or fibrosis. The combination of pegylated alpha 2 interferon and ribavirin are the treatment of choice for HCV. Novel new antiviral medications are in early clinical trials for HCV including protease and polymerase inhibitors. For HBV additional new nucleoside/nucleotide analogues are undergoing clinical trials. Persons with HBV who should be screened for HCC include males over 40 years of age, persons with a family history of HCC and persons with cirrhosis every 6 to 12 months. For HCV, persons with cirrhosis should be screened for HCC. Ultrasound of the liver and AFP testing are the best combination of modalities to use, but if availability and cost are a problem, AFP may be used alone.

FROM HIV ACTIVISM TO HCV FATALISM: THE CHALLENGE OF RESOURCING THE IDU COMMUNITY RESPONSE TO THE HEPATITIS C EPIDEMIC

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Much has been made of the success of the partnership approach to reducing the impact of the HIV/AIDS epidemic in Australia from 1987 to the mid-1990s. The role of the affected communities in this partnership – the gay community, injecting drug users (IDUs) and sex workers – was integral to the success of the national response. Resourcing and enabling the participation of drug users was made possible by a bi-partisan political commitment to pragmatic action on AIDS and also by a paradigm shift towards harm reduction in Drugs Policy. This paper explores the factors that have impeded the same degree of mobilisation and success in the response to Hepatitis C in “Post AIDS panic” Australia since the later 1990s. Despite the continued existence of Needle and Syringe Availability Programs, Hepatitis C Councils and Drug User Groups, hepatitis C incidence remains high. Despite improvements in the efficacy and accessibility of anti-viral treatments, uptake by injecting drug users remains disproportionately low. This paper discusses changes in the social and political environment that are less enabling of IDU community participation in public health. Options are explored for enhancing the role of the IDU community towards a more dynamic response to Hepatitis C.
STIGMA, DISCRIMINATION AND BARRIERS TO TREATMENT: A HEALTH AND HUMAN RIGHTS PERSPECTIVE

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Discrimination represents the most tangible and frequent infringement on people's human right to be treated equally and fairly. Discrimination is both pervasive (it spreads across populations as a result of ignorance, misconception, stereotyping and stigmatization) and invasive (from its roots to its ultimate outcome, it affects the life of people subjected to discrimination by generating discomfort, humiliation, fear, denial of equal treatment and harmful physical, mental and social impacts). Discrimination is most commonly perpetuated in public and private health structures and services where the state fails its obligations to respect, protect and fulfill human rights. Discriminatory actions do not only amount to violations of human rights, but also to unsound public health practice as they act as a deterrent to access early diagnosis, support and prevention and treatment services. Worldwide, blood borne infections (although by far not the only health conditions) have given rise to discrimination, particularly when they are perceived as linked to socially stigmatised behaviours as is the case for syphilis, HIV and now hepatitis C. The November 2001 Report of the Enquiry into hepatitis C related discrimination produced by the Anti-discrimination Board of New South Wales described the multidirectional relationships between substance use, hepatitis C infection, discrimination and denial of access to prevention, treatment and support. Practical recommendations emerged from this report but today, four years later, in spite of commendable progress achieved in mounting an effective response to hepatitis C, there is documented evidence that the recommended preventive and corrective actions have fallen short of expectations. This presentation will examine, through a health and human rights lens, how discrimination related to hepatitis C can be combated. It will also suggest that creating discrimination-free environments within and beyond the health sector is not only investing towards a more effective response to current public health problems but also preparing for emerging threats to public health which bring in their trail high risks of arbitrary decisions and counterproductive, discriminatory measures.

PROTECTIVE FACTORS FOR HCV INFECTION

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Background: HCV epidemiology in injection drug users is characterized by high incidence and prevalence, with little systematic variation to suggest appropriate interventions. Methods: A meta-analysis of HCV in drug users, examining measures of epidemiology, risk factors and prevention. Data collection is still underway; these data represent preliminary analysis of existing data (n=400 reports).

Results: In terms of individual-level characteristics, HCV incidence and prevalence vary in relation to age, race and primary injected drug. Relative risks (RR) of HCV infection associated with syringe sharing vary between 1.5-2.6. Reported RR of HCV associated with equipment sharing (drug cookers and filtration cotton, primarily) vary between 1.1 to 6.0. Findings are inconsistent with respect to the effect of public health programs (principally drug treatment, needle exchange and HCV screening) on HCV infection. Estimates of the impact of disinfectant bleach on HCV transmission appear to be distributed around a null effect (RR=1.0).

Conclusions: Multiple factors contribute to difficulties in controlling HCV transmission in this population, including high prevalence of infectious carriers, multiple sources of HCV infection in the injection setting (syringes, cookers, cottons, perhaps water) and residual risk behavior in many IDU-communities. With current knowledge, strategies to reduce HCV infections in drug injectors will need to address a broad set of objectives.
TUESDAY 21 FEBRUARY 2006

Concurrent Session – Nurse Led Models of Care (9.00am – 10.30am)

IMPROVING ACCESS TO HEPATITIS TREATMENTS AND SUPPORT FOR PRIMARY CARE PROVIDERS AND PATIENTS IN THE SOUTH WEST AND LOWER GREAT SOUTHERN HEALTH REGIONS OF WA

Totten L

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In Western Australia, distance and lack of knowledge has limited remote and rural patients from accessing hepatitis C treatments and support, although shared care models have attempted to overcome this problem in the short term.

In 2003, a Hepatitis C Treatment Access and Support Program was established in the South West and Lower Great Southern Health Regions of Western Australian. A Clinical Nurse Consultant from Fremantle Hospital was employed to work in conjunction with Medical Specialists to improve coordination, education and support services for primary care providers and patients accessing treatments for hepatitis C.

Since the inception of the program, 8 clinics have been established with 6 clinics being conducted in the community and two in regional prisons. As of July 2005, 754 patients have been seen and of this total, 272 are new referrals. Fifty-five patients have undertaken treatment for hepatitis C. A total of three physicians from these health regions are now regularly prescribing treatment for hepatitis C.

The implementation of this program has shown that the management and care of patients with hepatitis C can be successfully devolved away from tertiary referral centres.
INCREASING ABORIGINAL COMMUNITIES ACCESS TO BBV SERVICES IN NSW

Cairnduff S, Alexander N
Aboriginal Health & Medical Research Council of NSW

Aboriginal populations are identified as priority populations in the National Hepatitis C Strategy (2005-2008), the NSW Hepatitis C Strategy (to be released) and other NSW Area level strategies. The importance of addressing hepatitis C and other blood borne viruses is also emphasized in the National Aboriginal and Torres Strait Islander Sexual Health and Blood Borne Virus Strategy (2005-2008). These strategies have acknowledged the impact of poorer access to services including needle and syringe programs, overrepresentation in prison, relative recent increase in injecting drug use and a younger and more mobile population on rates of hepatitis C in Aboriginal communities.

The Aboriginal Health and Medical Research Council of NSW (AH&MRC) is the peak body for Aboriginal Community Controlled Health Services in NSW. In 2004 the AH&MRC published the report “Increasing access to services in NSW for Aboriginal people at risk of contracting or who have blood borne infections.” The report is the first comprehensive document consolidating evidence on Aboriginal people’s access to blood borne infection (BBI) services in NSW. One of the outcomes of this report was the development of two new positions; the Hepatitis C Workforce Development Project Officer (funded through the Office of Aboriginal and Torres Strait Islander Health) and the Harm Minimisation Project Officer (funded by NSW Health). These positions aim to:

- Enhance the capacity of the Aboriginal workforce to respond to hepatitis C and other blood borne viruses,
- Improve prevention, treatment, care and support of Aboriginal people affected by, or at risk of contracting, blood borne infections, and
- Promote harm minimisation strategies to Aboriginal Community Controlled Health Services.

This presentation will outline some of the strategies used by these positions to increase access to prevention, care and treatment services for Aboriginal communities in NSW including: participation and support of the Aboriginal Sexual Health Workers Network, education sessions for Aboriginal Community Controlled Health Services on blood borne viruses, resource development and distribution and representation of the AH&MRC on state-wide BBV forums.

THE CONNECTION – AN INDIGENOUS PEER-BASED YOUTH PROGRAM

Van Den Dungen J
The Connection (auspiced by the Australian Injecting & Illicit Drug Users League) (AIVL)

The Connection is a peer-based, indigenous youth program and drop-in centre based in Canberra. The program is run by and for young indigenous drug users and ex-users and is currently auspiced and supported by AIVL. The Connection runs a peer drop-in centre 3 days a week and provides a safe place for young indigenous drug users and other members of their community to access education, information, referrals, have a chat, get help and support and have a feed. The Connection also runs a number of programs including Young Men’s and Young Women’s Programs, a family violence project and a sexual health project. Currently peer support workers and participants from The Connection are working with AIVL to develop an Aboriginal Hepatitis C Peer Education Workshop Kit to support other young Aboriginal people and their communities to run their own hepatitis C education sessions. The young people are planning, developing and writing the workshop kit and will eventually be trained as peer trainers to run the workshop and teach other peers to run the program. John Van Den Dungen the Peer Co-ordinator will present on the work of The Connection and talk about the hepatitis C peer education kit project.

Funding for the program and its projects comes from the Foundation for Young Australians, ACT Healthpact, OATSIH and Department of Family and Community Services. The Connection has also been recognised over its brief history of less than two years with a number of awards including a share of the Sydney Peace Prize, National Crime & Violence Prevention Awards and the ACT AIDS Action Council Award.
Hepatitis C (HCV) infections continue to spread among injecting drug users (IDU), and despite numerous prevention efforts, little has been achieved in curbing the epidemic. Advances in the treatment of both chronic and acute infection, have led to calls to increase treatment availability to current IDU in order to both avert future morbidity and prevent further transmission. This paper will examine the issues surrounding, and feasibility of, preventing HCV transmission through treatment.

The current rate of HCV treatment uptake is very low, especially among current IDU and it remains unclear what impact treatment will have on risk behaviour and reinfection. Potential barriers to HCV treatment uptake include discrimination by health care professionals, lack of awareness of improved treatment outcomes, concerns around toxicity of available treatment, requirement for liver biopsy-based staging of disease and treatment generally through tertiary centres, and low prioritisation of HCV in the context of other social and health concerns. Removal of some of these barriers to HCV treatment should increase access to HCV treatment, however, those individuals who commence treatment and have successful viral eradication may be a selected population with relatively low HCV risk behaviour. The potential impact of HCV treatment uptake among current IDUs on HCV transmission has not been assessed.

Using estimates derived from HCV modelling, prevalence among IDU and pooled incidence, simple estimates of the impact of treatment on incidence were calculated. The estimated number of current IDU to have commenced and achieved viral eradication in 2003 was 261 and 160, respectively. This figure of viral eradication represents 0.35% of the estimated current IDU population with HCV viraemia and would result in the prevention of approximately 30 cases over a one year period. If treatment uptake among IDU were increased by 5 and 10-fold respectively, this would result in the prevention of 150 and 300 new cases, respectively. A 10-fold increase in treatment levels would be required to produce a 2-3% reduction in new HCV infections in Australia. These estimates are based on the assumption that mean HCV risk behaviour is similar among treated and untreated current IDUs, therefore may be overestimates.

These estimates demonstrate that in the current Australian context, even a very large increase in treatment uptake would have a limited impact on HCV transmission. Efforts to increase HCV uptake among current IDUs should therefore focus on the potential treatment benefits to individuals in relation to improved quality of life and prevention of liver disease progression. Development of treatments with reduced toxicity, greater efficacy and shorter durations of delivery would probably be required before significant population level impacts on HCV transmission can be achieved.

TREATING HEPATITIS C (HCV) IN PRISON: MODELLING EPIDEMIOLOGY, DISEASE OUTCOMES AND COST-EFFECTIVENESS

Although there is a high prevalence of HCV in Australian prisons, relatively few prisoners receive anti-viral treatment. Many prisoners rotate rapidly through networks where there are high rates of unsafe injecting both outside and inside prison. Australia’s current HCV treatment strategy does not address this high risk group.

We have developed a compartmental model of the epidemiology, natural history and health economic outcomes of HCV in Victoria. Treatment of HCV for prisoners is more expensive than treatment through a liver clinic (approx $5000 extra, depending on protocol), but is more effective in health economic terms (AUD$2068 per QALY for liver clinic, $1695 for prison). In disease outcome terms, treatment in prison would prevent a significant number of cases of hepatocellular carcinomas, and liver failure. In epidemiologic terms treatment in prison would result in a reduction in prevalence sooner the treatment outside prison would. Sensitivity analysis indicates that changes in the major parameters do not affect overall conclusions of this study, i.e. that it would be cost-effective to treat more prisoners for HCV.

This work was supported by a grant from Dept Human Services, Victoria.

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METHADONE MAINTENANCE TREATMENT REDUCES MORTALITY, RE-INCARCERATION AND HEPATITIS C AMONG INMATES

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To examine the long term impact of methadone maintenance treatment (MMT) on mortality, re-incarceration and hepatitis C seroconversion in imprisoned male heroin users. The study cohort comprised 382 imprisoned male heroin users who had participated in a randomised controlled trial of prison-based MMT in 1997/98. Hepatitis C incidence in prison was 24/100 person years among Treated subjects and 48/100 person years among Control subjects. Subjects were followed up between 1998 and 2002 either in the general community or in prison. Measurements were all-cause mortality; re-incarceration, hepatitis C and HIV serostatus and MMT retention.

There were no deaths recorded while subjects were enrolled in MMT. Seventeen subjects died while out of MMT representing an untreated mortality rate of 2.0 per 100 person years (95% CI, 1.2-3.2). Two hundred and eighty of the 342 released subjects were re-incarcerated representing an overall re-incarceration rate of 87.7 per 100 person year. Compared to periods of no treatment, the risk of re-incarceration was reduced by 70% during MMT periods 8 months or longer (P <0.001). Re-incarceration risk was lowest during MMT episodes of eight months or longer (adjusted hazard ratio 0.3 (95% CI, 0.2-0.5; p<0.001) although MMT periods of 2 months or less were associated with greatest risk of re-incarceration (p<0.001).

Increased risk of hepatitis C seroconversion was significantly associated with prison sentences less than two months (adjusted hazard ratio 20 (95% CI, 5-76; p=0.001) and MMT episodes less than five months (adjusted hazard ratio 4.2 (95% CI, 1.4-12.6; p=0.01). Subjects were at greatest risk of MMT drop out during short prison sentences of one month or less (adjusted hazard ratio 10.4 (95% CI, 7.0-15.7; p<0.001). HIV incidence was 0.3 per 100 person years (95% CI, 0.03-0.99).

Retention in MMT was associated with reduced mortality, re-incarceration rates and hepatitis C infection. Prison-based MMT programs target a group at high risk and should be implemented where community based programs exist.

INJECTING ALONE AMONG YOUNG IDUS IN 5 US CITIES: BENEFITS AND RISKS

H Hagan, JV Campbell, H Thiede, S Strathdee, L Ouellet, S Hudson, M Latka, RS Garfein

Background: Illega drug injection typically occurs in private or semi-public settings where two or more injectors are present. In a large sample of urban young injectors, we describe those who report consistently injecting by themselves in a recent period.

Methods: Young injectors (15-30 years old) were recruited into a randomized controlled trial of a behavioral intervention to reduce blood-borne infections in 5 US cities. At the enrollment visit, participants completed a risk behavior interview and a blood draw for HIV and hepatitis C virus (HCV) antibody testing. Among 3,199 eligible subjects, 467 (15%) who reported always injecting alone in the previous 3 months were compared to other IDUs in the study to understand the relationship between this practice and risk for HIV and HCV.

Results: In multivariate analysis, participants who were black or Hispanic, or age 26-30 were more likely to report always injecting alone; history of drug treatment or incarceration, daily injection, injection with black tar heroin, having an IDU sex partner were inversely related to injecting alone.

IDUs who reported injecting alone were substantially less likely to report injection with a syringe (AOR=0.16) or other drug preparation equipment (AOR=0.15) used by another injector.

Discussion: Very low rates of injection risk behavior were observed in this group of IDUs. Injecting alone may make it easier to inject safely by granting an individual injector greater control over the injection setting and their own equipment. However, risks may include accidental overdose with severe consequences.
AUSTRALIAN TRIAL IN ACUTE HEPATITIS C (ATAHC): BASELINE BEHAVIOURAL DATA


Research into the treatment of acute hepatitis C (AHC) has included few individuals with injecting drug use (IDU)-acquired infection. Potential barriers to HCV treatment in the IDU population are psychiatric co-morbidity, frequency of drug use and degree of drug dependency, and a perception of poor treatment adherence among many clinicians. The Australian Trial in Acute Hepatitis C (ATAHC) study is examining natural history and treatment efficacy among predominantly IDU-acquired AHC. Subjects are eligible if they have seroconversion from negative to positive anti-HCV antibody within 24 months, or acute clinical hepatitis C and are enrolled within 6 months of anti-HCV antibody positive result. All eligible subjects are offered treatment with pegylated interferon α-2a (PEG-IFN) for 24 weeks. Behavioural data including demographics, drug and alcohol, drug treatment history and injecting behaviour are collected at regular intervals for all participants.

49 subjects have been enrolled in the study and baseline data is available on 36 subjects. 31 (86%) participants have a history of injecting drug use with 26 having injected within the last 6 months. Heroin was the most common drug injected. 24 (66%) subjects have commenced treatment with PEG-IFN, 20 of whom had a history of ever injecting drugs. Rates of paid full or part-time employment are low in both the treated (25%) and untreated (16%) group.

Four (80%) of the five participants who did not give a history of injecting drugs were on treatment compared with 20 (65%) of 31 participants who reported ever injecting drugs. Eight (44%) of 18 participants who reported injecting drugs in the past month were on treatment compared with seven (87%) of eight participant who reported injecting drugs in the previous one to six months and five (100%) of participants who reported injecting drugs more than six months ago.

Frequency of injecting drug use also affected the likelihood of being on treatment with only 50% of IDUs who injected more than twice a day being on treatment compared with 76% of those reporting injecting once a day or less.

Rates of drug dependency treatment were similar between treated and untreated groups.

Preliminary data suggests that treatment uptake may be influenced by patterns of injecting drug use. Behavioural follow-up data is currently being collected to examine the impact of injecting behaviour on treatment adherence and response rates.

RECRUITMENT AND FOLLOW-UP OF INJECTING DRUG USERS IN THE SETTING OF EARLY HCV TREATMENT: INSIGHTS FROM THE ATAHC STUDY

Nguyen O1, Dore G2, Hellard M1 on behalf of the ATAHC Protocol Steering Committee

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Despite being the major risk group for new HCV infections in most countries, current injecting drug users (IDUs) have been a small minority of study populations in almost all studies of acute HCV infection treatment. We therefore examined issues that may influence recruitment, follow-up, and uptake of HCV treatment among participants in a prospective cohort study of acute HCV infection.

The Australian Trial in Acute Hepatitis C (ATAHC) is examining natural history and treatment efficacy among predominantly IDU-acquired acute hepatitis C. Eligible subjects are offered treatment with pegylated interferon α-2a (PEG-IFN) for 24 weeks, with both treated and untreated subjects followed for up to 3 years. Quantitative data on injecting behaviour was examined, along with qualitative assessment of Melbourne ATAHC study participants.

49 subjects have been enrolled in the study and quantitative baseline data is available on 36 subjects recruited from sites in Sydney and Melbourne. 30 (83%) participants have a history of IDU with 26 having injected within the last 6 months. Heroin was the most common drug injected. PEG-IFN treatment adherence and toxicity to date have not been major issues, however, other issues have arisen that pose potential barriers to recruitment, follow-up, and treatment of IDUs in the context of acute HCV infection. Study case examples highlight that financial and transport difficulties, isolation and social support, mental health, drug and alcohol use and treatment, and legal issues have been prominent. Whilst such issues have often been difficult to manage, a multidisciplinary approach through the use of a study outreach worker indicates that such issues can be addressed and IDUs can be successfully engaged, treated and followed. Highly marginalized populations such as IDUs require specific strategies to enhance both engagement in longitudinal research protocols and successful clinical management outcomes.
CHALLENGES AND SUCCESSES IN THE DEVELOPMENT OF NEW THERAPIES FOR HCV

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The high prevalence of the disease caused by hepatitis C virus (HCV) and the limited efficacy of interferon-based therapies have stimulated the search for safer and more effective drugs. The most promising new agents that are being developed include drugs that selectively target the HCV NS3 protease and the NS5B polymerase.

The HCV NS3 protease and the NS5B polymerase play essential roles in HCV replication. By combining the power of high-throughput screening with rational, knowledge-based drug discovery, a number of competitive inhibitors of the NS3 protease as well as nucleoside and non-nucleoside inhibitors of the NS5B polymerase have been identified and are being developed. Importantly, inhibitors of the NS3 serine protease and the NS5B RNA-dependent RNA polymerase have now shown antiviral activity in HCV patients in initial proof-of-concept clinical trials. At the same time, however, preclinical work has indicated a very low genetic barrier to the emergence of drug-resistant viral variants. Moreover, several of the protease and polymerase inhibitors described thus far are only active against a subset of the clinically relevant HCV genotypes, potentially limiting their clinical effectiveness.

These findings underline the need for co-developing several agents to be used in combination in order to minimize the emergence of clinical resistance. Compared to HIV, the field of HCV resistance to antiviral agents is lagging behind, but it is expected to catch up with a fast pace. Hopefully, the understanding of the molecular determinants of pre-existing and acquired viral resistance will provide the basis for the identification and clinical development of resistance-repellent inhibitors.

EXPRESSION OF HEPATITIS C VIRUS STRUCTURAL PROTEINS BY RECOMBINANT BACULOVIRUS IN MAMMALIAN CELLS

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The HCV genome is a 9.6 kb plus-stranded RNA encoding a polyprotein of about 3,000 amino acids. The polyprotein is co-translationally cleaved by a cellular protease into 3 structural proteins (core, E1, E2) and by viral proteases into 7 non-structural proteins. Core protein assembles into the viral capsid, which acquires an envelope containing heterodimers of the E1 and E2 glycoproteins, following budding into the endoplasmic reticulum. Hepatitis C virus-like particles (VLPs) assemble in insect cells infected with a recombinant baculovirus (recBV) expressing HCV core, E1 and E2 proteins. The VLPs assemble in the absence of the 5’ untranslated region (UTR), but are incorrectly glycosylated and are not secreted, even when the HCV ion channel protein p7 is co-expressed. Our aim is to determine the requirements for HCV VLP assembly in cultured mammalian cells using baculovirus as a vector for gene delivery. We have constructed a series of recBVs which constitutively express the structural proteins of HCV +/- p7, or the complete polyprotein, following transduction of mammalian cells. All constructs contain the HCV 5’ UTR, which directs translation from the internal ribosome entry site (IRES) and may contain signals for packaging. We have demonstrated co-expression of the structural proteins by each recBV in Huh7 cells using immunofluorescence and Western blot, and localised these proteins to the membrane fraction of lysates. We are now solubilising the membrane fractions to identify HCV VLPs following sucrose gradient centrifugation. We previously showed that primary marmoset hepatocytes could be efficiently transduced (~22% efficiency) with a recBV co-expressing HCV E1 and E2, but were poorly transfected (~0.4%). We wish to extend this study by transducing primary hepatocytes with our series of recBVs to identify VLPs and to examine the assembly process in a more authentic hepatocyte.
MICROARRAY ANALYSIS OF PERIPHERAL BLOOD MONONUCLEAR CELL (PBMC) MESSENGER RNA IN TREATED HCV INFECTION

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Background: Assessment of HCV response to treatment and progression of hepatic fibrosis frequently requires an invasive biopsy. However, biopsy is plagued by sampling error and less invasive methods of assessing treatment response and fibrosis are required. We hypothesized that the changes in circulating PBMC mRNA reflect the intrahepatic immune response and thereby indicate response to treatment and/or extent of intrahepatic fibrosis.

Methods: PBMC and liver biopsy specimens were obtained from age, sex and fibrosis matched groups of individuals with sustained viral response (SVR), non-response (NR) or relapse (REL) following interferon (IFN) and ribavirin (RIB) treatment. Gene array analysis was performed using human 18000 gene oligonucleotide microarrays.

Results: Twenty PBMC RNA samples were obtained. Due to the poor RNA quality from five patients 15 samples were used in the subsequent analysis. There were 8 males and 7 females with a mean age of 51 years. All the individuals were of Caucasian origin. There were 7 individuals with stage 0 / 1 fibrosis and 8 individuals with stage 3 / 4 fibrosis. Three individuals had an SVR or REL and the remainder had NR following treatment. All replicates had an R²>0.9 on regression analysis and clustered together on subsequent analysis.

The expression data was filtered by log transformation, rare mRNA transcripts excluded were (less than twice background) and a usable signal was required in at least 75% of the samples being compared resulting in 1274 genes being used in subsequent analysis. Hierarchical and K-mean clustering of experiments demonstrated that individuals with stage 0 / 1 fibrosis or stage 4 fibrosis clustered together (two individuals with stage 3 fibrosis clustered with the stage 0 / 1 fibrosis). There was no clustering of treatment response, age or HCV genotype. Over 19 genes were associated with stage 4 fibrosis by significance analysis of microarrays (SAM).

Conclusion: Microarray analysis of PBMC was associated with gene expression profiles that appear to discriminate early from late stage fibrosis. We postulate that the observed PBMC transcriptome difference is due to the circulating inflammatory cell phenotype that reflects the intrahepatic immune response driving intrahepatic fibrogenesis.

HEPATITIS C VIRUS RNA QUANTITATION AND DEGRADATION STUDIES IN WHOLE BLOOD SAMPLES.

Watson J1, 2, Graves S3, 5, Ferguson J1, 2, 3, D’Este C2, 4 and Batey R1, 2, 5.
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Hepatitis C Virus (HCV) Polymerase Chain Reaction (PCR) qualitative and quantitative tests have evolved from specialist research tools into tests which are widely used in routine clinical practice. Clinical therapeutic decisions are based on HCV RNA titre, so if the result is inaccurate patients may be given, or alternatively denied, treatment inappropriately. Little data exists on the effect of environmental conditions on HCV RNA titre after blood has been taken from the patient.

Patients were recruited from the liver clinic at the John Hunter Hospital in Newcastle, Australia. Blood was taken from each of 10 patients who were known to be HCV RNA positive from previous HCV qualitative PCR testing. Serial plasma samples were tested using the Roche Amplicor™ HCV quantitative PCR kits to assess HCV RNA titres. Samples were tested for HCV RNA titre after standing between 0 and 24 hours at room temperature (8 quantitative HCV RNA tests per patient). Comparisons of HCV RNA titre were also made after 1 freeze-thaw cycle; after collection in serum or EDTA tubes; and after 1:10 dilution of samples.

HCV RNA titre was stable at room temperature over 24 hours. It was also stable over 1 freeze-thaw cycle, and no difference was seen in HCV RNA titre between blood collected in EDTA or serum tubes. Dilution (1:10) did produce variations in total RNA titre in both high and low titre patients. However covariance analysis of the log10 RNA titre revealed covariance levels to be similar to those reported by Roche Laboratories in their reproducibility data.

Therefore from this study we can conclude that HCV RNA is stable at room temperature, at least for the highly conserved 244 base target sequence in the 5’ untranslated region of the HCV genome which is used during the RT-PCR amplification stage in the Roche Amplicor™ kit. If the HCV RNA strand does not fragment, the results of this study indicate that HCV RNA may remain viable for at least 24 hours at room temperature, which has public health implications for transmission of the virus with needle sharing, razors and household contact.
The Hepatitis C virus glycoproteins, E1 and E2, form non-covalent heterodimers that mediate receptor binding and viral entry. The E2 glycoprotein (polyprotein residues 384-746) is comprised of a receptor-binding domain (384-661) that is adjacent to a stem region containing a conserved heptad repeat sequence (675-699). Amino acids within the stem region participate in E1E2 heterodimerization during glycoprotein assembly. The stem region is also essential for post receptor binding stages of viral entry, possibly viral fusion. Based on its functional similarities to the phylogenetically related glycoprotein E of the flaviviruses, we propose that E2 is a class II fusion protein.

Viral entry receptors for HCV include, but may not be limited to, CD81 and scavenger receptor class B type 1 (SR-B1). CD81 is a tetraspanin present on all nucleated cells and is comprised of a small and large extracellular loop and four transmembrane spanning domains. In addition to its role in viral entry, the E2-CD81 interaction has been shown to cause inflammatory and immunomodulatory responses in certain cell types in vitro, which are consistent with pathogenic processes observed in infected individuals. The crystal structure of the LEL reveals a homodimer comprised of 5 alpha helices that form the stalk and head subdomain (Kitadokoro et al EMBO J., 2002). Within the head subdomain, amino acids that interact with E2 include hydrophobic exposed amino acids Phe186 and Ile182 that form a ridge over a hydrophilic cavity formed by Asn184 and the adjacent residue Thr166 (Drummer et al J Virol., 2002). Together with Leu162 they provide a surface area for interaction with E2 of 805Å.

The CD81 binding site in the receptor binding domain of E2 is formed through discontinuous sequences that are likely to include Y613RLWHY and a newly identified region, located between hypervariable regions 1 and 2, G436WLAGLFY. Following receptor binding, the virus is internalised into endosomes where the low pH environment triggers further conformational changes in the E1E2 heterodimer that facilitate fusion between the viral and endosomal membranes. A molecular understanding of how the E2 glycoprotein and CD81 interact and the conformational changes that occur in the E1E2 glycoproteins provides new targets for the design of antiviral agents targeting receptor binding and membrane fusion.

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**WHAT’S IN THE HCV DRUG THERAPY PIPELINE?**

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Infection with hepatitis C virus (HCV) will continue to represent a serious global health threat for many years to come due to the chronic nature of the infection, to its high prevalence and to the significant morbidity of the resulting disease. Our current therapeutic approaches are effective in only approximately 50% of the patients, associated with severe side-effects and not suited for all patient groups. Thus, a pressing medical need dictates that we must discover and develop new anti-HCV agents that are at the same time more efficacious and better tolerated by all patients. During the last decade, a wealth of studies on the HCV molecular virology has led to the identification of a number of novel antiviral targets and a variety of new potential therapeutic strategies are now emerging that utilize agents aimed at HCV-specific targets. The high genetic diversity, mutation rate and 2turnover of HCV are expected to favour the emergence of drug resistance, however, limiting the clinical usefulness of novel antiviral agents. It is expected, by analogy with other infections, that effective pharmacologic control of HCV will be achieved best by using a combination of such virus-specific agents, each designed against an independent target. This should minimize the emergence of resistance against any single agent.

This presentation will review the pipeline of emerging novel therapies for hepatitis C.
As Australia's hepatitis C epidemic continues unabated, the development of partnerships between affected communities and researchers become increasingly important. Partnership approaches across sectors (government, community-based organizations, researchers, and communities) are recognized in national and state hepatitis strategies as needed to reduce transmission rates, to improve quality of life and to reduce personal and community impacts of hepatitis C infection. A partnership model of hepatitis C communities and social researchers seeks to facilitate community involvement in research in order to maximize the relevance of research aims and findings to people with hepatitis C.

Social researchers work within an ethical framework which acknowledges the agency of disadvantaged individuals and communities involved in academic research, and researchers' responsibility to them. In accordance with this framework and national and state hepatitis strategies, the National Centre in HIV Social Research (NCHSR) sought to develop a model of research participation and knowledge transfer based on partnership approaches and informed by community protocols for use in hepatitis C and injecting drug use-related social research. During 2005, a range of organizations representing affected communities from eight Australian state and territory jurisdictions were consulted on long term strategic partnership building in research activities between affected communities and social researchers.

The consultative process was designed to contribute to community building at each site. Preliminary insights obtained from the national consultation included: a desire for ethical, equitable and transparent partnerships; a need for enhanced community resourcing to enable communities to pursue partnership goals in a sustainable manner; a preference for consultative needs-based research projects; a need for social research which is funded through to sustainable implementation of findings; and awareness of the impacts of marginalization on lobbying and participation opportunities. Specific barriers faced by CALD and Indigenous Australian communities further limited the reach and importance of research in these priority populations.
HEALTH PROMOTION AND HEPATITIS C: IMPLICATIONS IN THE MAKING OF IDENTITIES FOR YOUNG PEOPLE

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‘Good’ health and its pursuit has become one of the main preoccupations of modern day society. Health is crucial in how people fashion their identities to such an extent that it is often used as “an implicit language of the self”. Health promotion (HP) discourses implore people to reduce their risk of ill health by attending to lifestyle factors including diet, exercise, smoking, as well as alcohol and drug consumption. There have been a number of critiques of HP discourses, particularly in relation to the tendency to frame ‘risk’ and ill health as resulting from individual disease based models and a tendency to ignore broader material and cultural contributions to ill health.

Despite this HP discourses, with their emphasis on lifestyle choice, are pervasive. Few studies have examined the impact of HP discourses on those who continue to choose ‘risky’ practices, or those who have already acquired the state of ‘ill health’ that HP and prevention efforts seek to target.

This paper reports on a study that explores the internalisation of HP discourse and its effects on subjectivity of those who inject and have hepatitis C, those who smoke while pregnant and those who are inactive/obese.

This paper argues that the moral and political effects of HP discourses on those who continue to choose ‘risky’ choices, are pervasive. Few studies have examined the impact of HP discourses in relation to the tendency to frame ‘risk’ and ill health as resulting from individual disease based models and a tendency to ignore broader material and cultural contributions to ill health.

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This paper reports on a study that explores the internalisation of HP discourse and its effects on subjectivity of those who inject and have hepatitis C, those who smoke while pregnant and those who are inactive/obese.

This paper argues that the moral and political effects of particular HP strategies may differ according to the specific health context involved. Peoples experience of prevention messages in relation to an illegal behaviour such as injecting drugs, may differ markedly from those targeted by prevention messages about licit activities such as diet and exercise. Similarly licit behaviours may vary in social acceptability depending on the perceived moral connotations of the act.

The paper examines how HP in hepatitis C may threaten a youth persons right to be considered a citizen through the links it reinforces between ‘health’ and self. The paper then goes on to explore the capacity of HP to facilitate productive identity making by young people who inject & are at risk of hepatitis C. The paper concludes by raising a number of challenges for HP in the area of hepatitis C.
WHAT INJECTING DRUG USERS DON’T UNDERSTAND ABOUT HEPATITIS C

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There is some evidence that injecting drug users (IDUs) are often confused about what it means to have hepatitis C (HCV) infection. The present study aimed to explore IDUs’ understanding of the virus, including meanings attributed to symptoms and clinical markers, hygiene issues and blood awareness messages.

One hundred and sixty-four current IDUs were recruited from three areas: inner-city, outer metropolitan/suburban Sydney and one regional NSW area. A variety of recruitment methods were used including advertising in street press, through needle and syringe programs and word of mouth.

Sixty-three percent of participants were male and their mean age was 34 years (range 20-53). The most commonly reported drugs injected over the last month were amphetamines (64%; median of 6 times) and heroin (59%; median of 10 times). Virtually all participants (96%) reported having been tested for HCV at some stage; 72% of these reported having received a positive result, and 5% were unsure of their status.

Half (51%) of the sample rated their HCV knowledge as either good or very good, and 16% rated their knowledge as ‘poor’. However, results revealed that while some participants had a good understanding of the virus – particularly around the risks of sharing syringes and other injecting equipment, 97% demonstrated some confusion and misconceptions surrounding various aspects such as sexual transmission, superinfection and reinfection and clearing the virus. Fifteen percent of the sample, the majority of whom believed that they were HCV positive, also believed that they were now ‘immune’. Among participants who believed themselves to be HCV positive, 18% thought that they could not infect others. Among participants who believed that they were HCV negative, 27% believed themselves to have previously been infected, despite only having antibody testing. There was also a lack of knowledge about treatment for HCV.

These data suggest that, despite reasonable technical knowledge of HCV transmission, some IDU are confused about their HCV status and whether they can transmit infection. More innovative methods of HCV education are required.

RESEARCH, RELATIONSHIPS AND KNOWLEDGE MAKING

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The relationships that people who use drugs and drug user organisations (DUO) have with researchers structure what is ‘known’ about drug use. The capacity for people who use drugs to engage as knowledge makers themselves in both public and policy arenas varies according to the nature and strength of these relationships. Despite the signficance of these relationships, the nature, challenges and consequences of these relationships are rarely discussed.

This paper will examine some of the ethical and political issues in conducting research with drug users. After discussing challenges such data protection, consent and participant payments we will then discuss broader research issues such as who determines what research questions get asked and the influence of methods and sampling on what we come to know about drug use. Finally we examine the importance of recognising research as a knowledge making practice as well as issues such as representation, capacity building and mutual benefit.

Researchers and the individual and communities of drug users they are working with have different imperatives and at times conflicting sets of accountabilities. We argue that because research forms part of the regimes that regulate drug use in our society, it carries with it a particular set of ethical responsibilities. We draw on our experiences of several years of overlapping and collaborative work together to highlight some of the particular challenges of productive research relationships in this area. The paper concludes that researchers, drug users and the organisations that represent their interests need to speak about and reflect on the nature of our relationships if we are to see better quality research and better quality outcomes for those most effected by research.
TRUSTED INFORMATION: HEPATITIS C-RELATED INFORMATION SOURCES OF INJECTING DRUG USERS

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This paper presents data from interviews on information seeking practices of people with hepatitis C who attend needle and syringe programs. The interviews are part of a larger quantitative and qualitative research project exploring the use of print- and internet-based information sources by people with hepatitis C.

People responding to a national online survey of internet use for hepatitis C-related information, were asked to volunteer for a follow-up face-to-face interview. Twenty people, from NSW, VIC and WA, were interviewed. An additional 14 interviews were conducted with attendees at an NSP attached to a state drug user organisation.

The drug user organisation was the primary source of hepatitis C-related information for more than half the interview participants. Information from this source was highly valued as reliable, accurate, up-to-date, and relevant. Emphasis was placed on the trustworthiness and integrity of information provided by NSP staff, who many participants talked about as peers who understood the everyday concerns of injecting drug users. The organisation was frequently called upon to provide clarification on misconceptions and heresay relating to injecting drug use and hepatitis C transmission and prevention.

The paper concludes that drug user organisations, as valued sources of hepatitis C-related information, are well placed to ensure that injecting drug users benefit from current research and practice relating to hepatitis C transmission, prevention and treatment.

HEPATITIS C AND INJECTING-RELATED DISCRIMINATION IN NEW SOUTH WALES

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Hepatitis C-related discrimination is reportedly common however few studies have investigated this phenomenon. This paper presents findings from a cross-sectional study of people with self-reported hepatitis C virus (HCV) infection (N=504) conducted in New South Wales (NSW), Australia throughout 2001 and 2002. Participants completed a self-administered questionnaire enquiring into their experience of living with HCV. Over a half of participants (57.5%, n=290) reported that they had acquired their infection from injecting drug use. Discrimination was reported by 64.7% (n=326) of participants and health care was the most commonly reported site where discrimination occurred. A logistic regression identified the predictors of any discrimination as: knowing many other people with HCV infection; feeling tired due to HCV symptoms; and being younger (<51 years). Predictors of higher levels of discrimination were: knowing many other people with HCV infection; being limited in the time spent with family, friends, neighbours and groups due to HCV; and feeling pessimistic about HCV treatment and the future because of HCV-related ill health. Although discrimination occurred in a range of social domains, effort is needed to improve healthcare workers’ service delivery to people with HCV. Continued discrimination may inhibit people from seeking a range of health services and impede efforts to contain the epidemic.
OUTCOMES FROM THE GP THINK TANK ON HCV CARE IN THE COMMUNITY

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Australasian Society for HIV Medicine, Sydney Australia

The Australian Government Department of Health and Ageing funded ASHM to conduct a Think Tank on strategies for expanding access to therapy for people living with hepatitis C. The primary focus was to be on community based strategies and models adapted to suit a variety of setting across jurisdictions. It was recognised from the outset that no one solution would be found appropriate.

The Think Tank was promoted as a working meeting with a specific focus on looking at models for community based delivery of treatment to people living with HCV. It was invitation only meeting and focused on:

- people involved in administering or providing GP education programs;
- state, territory and national funding and policy bodies which support access programs
- those responsible for policy setting which hinders or facilitates access
- people with experience in particular models in hep C delivery and
- people with experience in models from other jurisdictions which might transfer

While people may not necessarily able to commit funds or agree to changes to program initiatives on the day they were able to indicate how that could be done.

The meeting was held in Sydney on the 20 February 2006, morning before the commencement of this conference. Discussion papers were distributed to the participants before the meeting. Presentations centred on activities which had been or were being piloted in hepatitis C care delivery, and on models in use in other conditions.

The recommendation presented in this session will be those developed from the Think Tank. A written report and strategic plan will be prepared based on the proceeding and any contributions gained from discussion following this presentation.

RESPONDING TO CHALLENGES ENCOUNTERED IN THE HEPATITIS C COMMUNITY PRESCRIBING PILOT

Ward A1; Hill S1
1Australasian Society for HIV Medicine, Sydney Australia

The NSW/ACT s100 hepatitis C community prescribing pilot officially commenced on 1 May 2004 and is due to conclude at the end of May 2007. Of the 82 prescribers accredited to prescribe HCV antiviral therapy, less than half have referred at least one patient or more under the pilot.

This paper addresses why the uptake in community prescribing of HCV antiviral therapy has not been as active as initially anticipated and how ASHM is responding to encourage greater participation. At December 2005, 165 patients were enrolled by 37 community prescribers, 28 of whom had received prescriptions from a community prescriber.

Three categories of community practitioners have enrolled patients:
- those working in the field of Drug and Alcohol
- those with high HIV caseloads
- those working in rural and regional locations

A survey of the community prescribers in February 2005 asked about barriers to patients initiating treatment and the reasons for lower treatment uptake than originally anticipated. The feedback is summarised in key themes in Table 1.

Table 1. HCV s100 Community Prescribing Pilot survey conducted February 2005

<table>
<thead>
<tr>
<th>Barriers</th>
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<tbody>
<tr>
<td>Liver biopsy</td>
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<tr>
<td>Distance to liver clinic</td>
</tr>
<tr>
<td>Waiting time to get liver clinic appointment</td>
</tr>
<tr>
<td>Fear of side-effects</td>
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<tr>
<td>Waiting for better treatment/lack of urgency given current condition</td>
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<tr>
<td>On investigation not meeting s100 criteria</td>
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</table>

<table>
<thead>
<tr>
<th>Patient factors</th>
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<tbody>
<tr>
<td>Chaotic life-style</td>
</tr>
<tr>
<td>Previous depression/fear of relapse</td>
</tr>
<tr>
<td>Other life matters more pressing</td>
</tr>
<tr>
<td>Impact of side-effects on work, study, family etc</td>
</tr>
<tr>
<td>Pregnancy, wanting to have child/partner wanting child</td>
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</table>

<table>
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<tr>
<th>Administrative constraints – Public V Private providers</th>
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</thead>
<tbody>
<tr>
<td>The pilot was restricted to referrals and treatment initiation being undertaken by a public hospital specialist. Several GPs had existing relationships with private gastroenterologists they could not refer to under the terms of the pilot.</td>
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</table>
issues of private providers being linked to the pilot, providing training to practice nurses to assist prescribers, and producing individualised patient management protocols for each pilot site.

In Victoria, the pilot has been rolled out in a somewhat different format which is largely driven by the liver clinic, via the CNC and participating specialist. Small clusters of community practitioners are aligned with a clinic and in Victoria enrolment has been proportionally greater.

Significant findings from the pilot to date include the crucial role of local relationships between liver clinics, specialists and community prescribers. The role of clinical nurse consultants is paramount to the success of community prescribing, as is careful targeting of motivated groups of community prescribers.

ACHIEVING EQUITY OF ACCESS TO TREATMENT FOR HEPATITIS C VIRUS: EVALUATION OF A PATIENT-TRIGGERED MODEL OF SHARED CARE

Mellor KL, Bell SJ, Watson KJR, Shaw RG, Chen RY, Thompson AJV, Iser D, Jakobovits S, Desmond PV. St. Vincent’s Hospital, Melbourne, Australia.

Treatment for Hepatitis C Virus (HCV) has been based in hospital liver clinics. Only 1500 Australians are treated annually, although 38,500 people living with HCV (PLHCV) are estimated to meet PBAC treatment criterion. Access to treatment for rural patients is difficult. Shared Care Programs (SCP) may expand access to treatment, but the safety and quality of care must be equivalent to city-based clinics.

To compare the outcomes for shared care patients with those from hospital clinics.

Patients attended the city-based Hepatology Nurse for education, followed by bimonthly visits, alternating between clinic and GP. GPs and patients were provided with printed resources and telephone advice. Over 12 months, we compared compliance, support requirements, dose reduction, and overall response.

Between 1/04/04 and 31/03/05, 106 naïve hepatitis C patients were treated. 18 (17%) were entered into the SCP. The majority were treated by rural GP’s (11% remote), the remainder in prison (22%).

The outcomes are summarized below.

<table>
<thead>
<tr>
<th></th>
<th>SCP n=18</th>
<th>CLINIC n=88</th>
</tr>
</thead>
<tbody>
<tr>
<td>Genotype 1</td>
<td>n= 8 (44%)</td>
<td>n=32 (36%)</td>
</tr>
<tr>
<td>Cirrhosis</td>
<td>n= 8/18 (31%)</td>
<td>n= 21/84 (25%)</td>
</tr>
<tr>
<td>Dose Reductions</td>
<td>n=10 (55%)</td>
<td>n=42 (47%)</td>
</tr>
<tr>
<td>Non Compliance</td>
<td>n=2 (11%)</td>
<td>n=8 (9%)</td>
</tr>
<tr>
<td>Required Significant Support</td>
<td>n=10 (55%)</td>
<td>n=12 (13%)</td>
</tr>
<tr>
<td>Overall Response:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ETR End of Treatment Response</td>
<td>n=3 (16%)</td>
<td>n=26 (29%)</td>
</tr>
<tr>
<td>NR Non Responders</td>
<td>n=4 (22%)</td>
<td>n=11 (12%)</td>
</tr>
</tbody>
</table>

These findings demonstrated that PLHCV could be treated safely and with equivalent quality and health outcomes in a SCP. There were a higher number of genotype 1 and cirrhotics in the SCP, which may explain the lower response rates. This patient-triggered model employs current infrastructure, and could be used to improve access to treatment.
ACCESS TO SCREENING, PREVENTION AND TREATMENT OF CHRONIC HEPATITIS C VIRUS (HCV) AND CHRONIC HEPATITIS B VIRUS (HBV) IN ALASKA NATIVES AND IN NORTH AMERICA

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HBV and HCV are significant problems in North America populations and indigenous populations in the Arctic including Alaska Natives (AN). Persons chronically infected are at risk for developing cirrhosis and hepatocellular carcinoma (HCC). In the US an estimated that there are 1.25 million Americans are infected with HBV and between 4 and 5 million with HCV. Among 120,000 Alaska Natives, 1350 are chronically infected with HBV and 1600 have been identified with HCV. Hepatitis B vaccine is available at no cost to all Canadians and American infants and children and the rates of acute HBV have dropped dramatically. Access to testing for HCV and treatment for HCV varies by country and region, and marginalized populations in the US such as prisoners, the 40 million uninsured Americans and guest workers are often unable to get care for these conditions. The majority of Alaska Natives live in isolated villages without road access. Each village has one or more community members who receive training as a Community Health Aide Practitioner (CHAP) to diagnose and treat common uncomplicated medical conditions. Using computerized registries, reminder letters are sent to all HBV and HCV infected persons every 6 months to have blood drawn in their local village clinic or hospital and sera are sent to a centralized laboratory where they are tested for liver aminotransferase levels (ALT and AST) for active liver disease and alpha fetoprotein (AFP) to screen for liver cancer. Those with HBV who have elevated ALT or AST are tested for HBV DNA level, and if levels are high (greater than 20,000 IU/ml) patients are sent to ANMC for liver biopsy to determine if they have more than mild liver damage and might need antiviral therapy. If AFP is elevated, they are brought in for liver imaging to attempt to detect HCC at a treatable stage. Persons with HCV and elevated liver enzymes are scheduled for regional liver clinics to be evaluated for treatment. These programs are able to deliver high quality care for HBV and HCV infected persons at a reasonable cost and have impacted morbidity and mortality from these infections.

LESSONS FROM THE NEW ZEALAND HEPATITIS B SCREENING PROGRAMME

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The Hepatitis Foundation Of New Zealand

From 1999-2002 177,000 people were screened for hepatitis B (HBV). 10,176 were found to be hepatitis B positive (HBsAg+). The programme was delivered by two health providers. The Hepatitis Foundation screened in the community in the North Island excluding Auckland and Northland. The Northern Regional Health Consortium screened in Auckland and Northland using a GP model of service delivery. The programme was targeted to adults in ethnic groups at high-risk of HBV infection (i.e. non European). Overall 27% of the target population was screened which equated to 39% of the programme target. Of those screened 87% were Maori, Pacific or Asian adults 15 years and older. Both programmes delivered similar levels of coverage. The northern programme achieved its highest level of coverage in urban Pacific populations while the Hepatitis Foundation achieved best results amongst Maori populations in provincial and rural centres. In retrospect, a combination of both models in both regions would likely have provided higher coverage of the target population.

The Foundation commenced screening nine months before Auckland and was constrained by a Health Funding Authority prohibition on national programme publicity pending the commencement of screening in Auckland. We believe this policy hindered the Foundations efforts to enrol programme participants at critical stages of programme roll-out.

Unlike other screening programmes which require repeated mass screening of a target population, HBV screening is a one off project in any given population; subsequently, only those HBsAg+ require follow-up testing. The Hepatitis Foundation now provides follow-up throughout the North Island using a combination of community and GP models of delivery with a compliance rate exceeding 80%. 
HIGHLY ENDEMIC HEPATITIS B INFECTION IN RURAL VIETNAM

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Hepatitis B is a major public health problem in Vietnam. However, estimates of the prevalence and risk factors for hepatitis B virus (HBV) infection in rural Vietnam are limited. A cross-sectional seroprevalence study was undertaken in two rural districts in Thai Binh province. The study population was randomly selected using multi-stage sampling. Demographic and behavioral risk information and serological samples were obtained from 837 participants. Mean age was 42.3 years ± 15.8 (range, 16-82 years), and 50.8% were female. Prevalence of HBV core antibody (HBcAb) and surface antigen (HBsAg) was 68.2% and 19.0%, respectively, and HBV e antigen (HBeAg) was detected in 16.4% of the HBsAg positive group. Prevalence of hepatitis delta virus (HDV) was 1.3% in the HBsAg positive group. Factors associated with HBV infection (HBcAb or HBsAg positive) were age sixty years or older (OR 3.82, 1.35-10.80; p=0.01), residence in Vu Thu district (OR 3.00, 2.16 – 4.17; p<0.0001), hospital admission (OR 2.34, 1.33-4.13; p=0.003) and history of acupuncture (OR 2.01, 1.29-3.13; p=0.002). Household contact with a person with liver disease (OR 2.13, 1.29 – 3.52; p=0.003), reuse of syringes (OR 1.81, 1.25 – 2.62; p=0.002) and sharing of razors (OR 1.69, 1.03-2.79; p=0.04) were independent predictors of HBsAg positivity. Alanine aminotransferase level was elevated (>40U/L) in 43% of the HBsAg positive group. HBV infection and HBV related liver disease remains a serious public health problem in rural Vietnam. Poor infection control activities in health care settings partly accounted for the high HBV prevalence in this region.

Keywords: hepatitis B, hepatitis D, prevalence, risk factors, liver cancer, rural Vietnam.

LONG TERM PERSISTENCE OF HEPATITIS B IMMUNITY IN CHILDREN WHO RECEIVED HEPATITIS B VACCINATIONS IN INFANCY

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Universal vaccination against hepatitis B virus (HBV) commenced in Australia in 2000. Prior to this, a selective immunisation strategy was used in NSW, targeting infants considered at risk of HBV infection because of their ethnicity, Indigenous status or because their mothers were HBV carriers. This study measured, for the first time in Australia, the long-term persistence of antibody to hepatitis B surface antigen (antiHBs) and response to a booster dose of the HBV vaccine in adolescents vaccinated in infancy over 10 years ago. Subjects were enrolled into two groups; Group 1- adolescents vaccinated in infancy (n=66, mean age 14.4yrs), Group 2 – adolescents who have never received HBV vaccine (n=25, mean age 15.3yrs). Subjects had their antiHBs level measured at baseline and then 14 days and 1 month post receipt of HBV vaccine. At baseline 61% (40/66) subjects in Group 1 had antiHBs <10 IU/ml (Group 1A), 35% (23/66) between 10-100 IU/ml (Group 1B), while 100% of subjects in Group 2 had antiHBs <10 IU/ml. Fourteen days following HBV vaccine booster, nearly all subjects (except n=1) in Group 1 had antiHBs >10, considered to indicate immune memory. Most (87%, 20/23) subjects in Group 1B had antiHBs >1000, 14 days post HBV vaccine booster, while only 28% (11, 31 IU/ml) in Group 1A had antiHBs levels >1000 IU/ml. This pattern remained the same 1 month following booster vaccine. In group 1 post-booster antibody levels correlated well with pre-booster antibody level. Only 2 subjects in Group 2 had antiHBs levels >10 IU/ml (11, 31 IU/ml) 14 days and 1 month following the first dose of HBV vaccine. This study demonstrates that immune memory persists for more than 10 years in subjects who had received HBV vaccines in infancy. If immune memory is protective from natural infection this suggests that adolescent booster doses are not required, although monitoring needs to continue. This study, the first in Australia, will finish recruitment soon and updated results will be available.
ANALYSIS OF THE ROLE OF DNA ENCODING THE HEPATITIS B SPLICE PROTEIN IN HBV PATHOGENESIS

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The recently identified Hepatitis B splice protein (HBSP), associated with chronic HBV (CHB) infection and liver fibrosis, is translated from a 2.2 kb spliced transcript defective in Pol, that is packaged and replicated by wild-type HBV. The role of the HBSP and splicing in HBV pathogenesis remains unclear. The aim of this study was to measure the amount of HBSP-encoding splice-derived DNA (spDNA) circulating in CHB patients, determine whether this was associated with disease severity, and whether it was influenced by factors such as drug therapy and HIV co-infection. Using Real Time PCR, we measured the amount of HBSP-encoding spDNA relative to genomic length DNA, circulating in patient sera. We investigated over 400 samples from CHB patients including cirrhotic patients, liver transplant recipients and patients co-infected with HIV who were on HAART. The amount of 2.2kb spDNA varied markedly, both within and between cohorts, in some cases representing over 40% of the circulating DNA. The following observations were made: (i) Liver damage: More spDNA was detected in patients with severe liver disease (ii) Genotypic differences: we generally observed less spDNA in genotype A patients relative to genotypes B and C; (iii) Antiviral treatment: the amount of spDNA increased in patients on nucleoside/nucleotide analogue therapy, relative to pre-treatment samples. Interestingly, the amount of spDNA decreased significantly on the development of drug resistance in many patients; (iv) Co-infection: generally, less spDNA was detected in CHB patients co-infected with HIV.

Our observations support previous studies that suggested the HBSP is associated with severe liver disease. The reason for the increase in circulating spDNA following the introduction of nucleoside analogue drug therapy, and the subsequent decrease on the development of drug resistance is unknown.

The marked variation in the level of spDNA circulating in CHB patients suggests that splicing and/or the HBSP may be important in HBV replication and pathogenesis.

ANALYSIS OF MUTATIONS OF FULL LENGTH GENOMES OF HEPATITIS B VIRUS (HBV) IN HIV AND HBV CO-INFECTED INDIVIDUALS

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In the setting of co-infection, the presence of HIV considerably modifies the natural history of HBV and lamivudine (LMV) resistant HBV develops more rapidly. It is unclear whether this is due to increased HBV virulence, anti-retroviral therapy, immune suppression, or a combination of factors. We previously examined the prevalence of genotypic antiviral drug resistance to LMV in an international cohort of 86 HIV-HBV co-infected patients from Melbourne, Sydney and the United States.

The aim of the current study is to analyse longitudinally, the evolution of mutations across the entire genome of HBV in HIV-HBV co-infected individuals receiving tenofovir/adenofovir as a component of HAART and to identify mutations and/or combinations of mutations in key genes and regulatory regions which may be important in viral pathogenesis in the setting of co-infection.

An initial subset analysis of the entire HBV genome of 10 patients from this cohort at baseline and again at least 2 years post lamivudine therapy revealed lamivudine resistance mutations had emerged in all patients. The HBeAg mutations at A1762T/G1764A within the basal core promoter region were detected in one patient while another patient selected the G1896A PreCore stop codon mutation. Importantly, we detected unique insertions and/or deletions in homopolymer nucleotide stretches of guanosine or thymidine located at nucleotides 66 and/or 192 within the core gene in all patients. These mutations resulted in premature termination codons and affected the deduced amino acids at codons 22 and/or 64 in core. These homopolymeric insertion or deletions alter the major immunological epitope of the core protein and may be important for immune escape. We subsequently determined that these homopolymer insertions and/or deletions are also detected in immunocompetent HBV mono-infected patients. The significance of these mutations will be investigated in vitro using a transient transfection system. Although it is not yet possible to determine the direct cause of severe liver disease in HIV co-infected patients, the complexity of HBV mutations identified throughout the genome, including drug resistant virus and putative immune-escape mutants may contribute to disease pathogenesis.
THE SPECIFICITY AND PHENOTYPE OF INTRAHEPATIC AND CIRCULATING HBV-SPECIFIC T-CELLS DIFFER IN CHRONIC HBV INFECTION


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HBV-specific T-cells play a key role in clearance of HBV and in the pathogenesis of liver disease. We therefore aimed to compare the specificity and phenotype of circulating and intra-hepatic HBV-specific T-cells in individuals with liver disease secondary to HBV. Identification of the immunodominant epitopes recognised by liver infiltrating lymphocytes (LILs) may improve our understanding of HBV-related liver disease.

An overlapping peptide library to the whole HBV genome (genotype A) consisting of 15-mer peptides overlapping by 11 amino acids was synthesised. Peripheral blood and liver biopsies were collected from HBV-infected (n=10) individuals who had not received HBV-active therapy, had an HBV viral load >100,000 copies/ml and had an ALT>2x the upper limit of normal. LILs were isolated from liver biopsies and were non-specifically expanded using anti-CD3 and IL-2 stimulation. PBMC from the same individual were also stimulated and cultured. Fresh blood, cultured LILs and cultured PBMC were each stimulated with 6 HBV peptide pools (50-100 peptides per pool) and production of IFNγ, TNFα, IL-2 and IL-10 was detected by intracellular cytokine staining and flow cytometry.

Following stimulation with HBV peptides, the most frequently detected cytokine response was the production of IFNγ and TNFα where as detection of IL-2 and IL-10 was rare in both CD4+ and CD8+ T-cells. There was no significant increase in the frequency of HBV-specific T-cells following non-specific expansion of PBMCs. The specificity and cytokine profile of HBV-specific CD4+ and CD8+ responses was similar following HBV peptide stimulation of both whole blood and cultured PBMC but was different to cultured LILs. Overall the magnitude of the HBV-specific response was lower in LILs than in whole blood and PBMC. We found an inverse correlation between HBV viral load and the frequency of HBV-specific CD4+ and CD8+ T-cells. The specificity and cytokine profile of HBV-specific intrahepatic LILs differs to circulating HBV-specific T-cells. The low frequency of circulating HBV-specific T-cells detected is not explained by compartmentalisation in the liver.

MOLECULAR MODELLING OF HEPATITIS B VIRUS POLYMERASE: COMPARISON OF ADEFOVIR, ENTECAVIR AND LAMIVUDINE RESISTANCE

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The antiviral treatment of chronic hepatitis B is limited by the selection of antiviral resistance mutations. To gain an understanding of the hepatitis B virus (HBV) polymerase and also mutations associated with resistance, a three-dimensional model of the HBV reverse transcriptase core region based on homology with HIV was created. Primary resistance to lamivudine (LMV) adefovir (ADV) and entecavir (ETV) were located on the molecular model. LMV resistance is due to mutations at rtM204I/V +/- rtL180M of the polymerase which causes steric hindrance and changes in van der Waals forces that alter the position between the changed amino acid (rtM204I/V) and the sulphur atom in the oxathiolane ring of LMV-tri phosphate (TP). Resistance to ADV is associated with a mutation in the D Domain at rtN236T that may potentially result in the perturbation of the ADV-DP binding site. Other ADV resistance mutations at rtA181V/T can affect the position of residue 204 resulting in discrimination between the analogue and the natural substrate. Two different mutation profiles for ETV occur in combination with the LMV resistance mutations. The first mutation profile includes mutations at rtM250V + rtI169T + LMV resistance that alter the interaction with the DNA primer and template; respectively. Whilst the second profile includes the mutations rtT184G + rtS202I + LMV resistance which alters the hydrophobic core interaction between the beta sheet that contains the catalytic aspartic acid residues at the terminal loop and the alpha helix of the DNA template binding region. Molecular modeling is an important tool in understanding primary antiviral resistance to antiviral agents, the interaction between resistance mutations and also the interactions between the polymerase, the nucleic acid template and new antiviral agents. It may provide insights for the improved treatment of patients on monotherapy and multiple combinations of antiviral agents.
SEQHEPB: A SEQUENCE ANALYSIS PROGRAM AND RELATIONAL DATABASE SYSTEM FOR CHRONIC HEPATITIS B

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SeqHepB is a system designed to correlate large numbers of patient clinical, pathological data, viral mutational data, and in vitro phenotypic data to further understand the natural history of hepatitis B. This system is composed of a hepatitis B virus (HBV) genome sequence analysis program and a relational database to house the data obtained from multiple disciplines.

The database currently contains pathological and virological data for 1,433 patients, and is the largest database for HBV in the world. Associated with these patients, there are 320 clinical histories, 1,417 treatment histories, 100 biopsy results, and 17,265 specimen records. In terms of pathological tests performed on the samples, there are 23,597 records in the database, and these include HBV, hepatitis C virus (HCV), and hepatitis D virus (HDV) related pathology test results, as well as liver function and haematology test results. Samples within the database are also associated with 2,962 HBV sequence information corresponding to 90,449 nucleotide or amino acid variation data points. The mutation data is correlated to in-house and published in vitro phenotype data.

Correlation of clinical, pathological and viral molecular biological data using different artificial intelligence technique facilitates the analysis of pathogenesis and natural history of hepatitis B. The initial correlation of these multi-disciplinary data has identified novel mutations associated with antiviral resistance and cross-resistance to lamivudine, adefovir and entecavir. A linkage that exists between a 3-dimensional structure viewing program and the database enables these mutations to be further analyzed within a 3D model of the polymerase.

Chronic hepatitis B is a disease with a complex natural history, and this complexity increases with the use of antiviral agents. The SeqHepB system is an important tool that will enable the physician to individualize patient management, to cope with the explosion of antiviral associated HBV mutations, and should prove to be a useful therapeutic guide in clinical settings as new antiviral agents and combination thereof are implemented.
PLANNING FOR HEPATITIS SERVICES IN 2020

Tyrrell H
Australian Hepatitis Council

This paper will explore some of the key supply and demand issues which will emerge in the health care system in general, and hepatitis services in particular, over the next 15 years. On the demand side of the equation, the combination of the natural history of the hepatitis virus; ageing of the population; the continuing high number of new infections; increasing consumer expectations of the health system; and loosening of the criteria to access hepatitis treatment will result in a significant increase in demand for hepatitis-related health services over the next 10 to 15 years. Cirrhosis, liver failure and hepato-cellular cancer are set to triple by 2020 and demand for liver transplants will increase substantially. A far greater number of acute hospital bed days will therefore be attributed to hepatitis related conditions in 2020 than is the case today.

On the supply side of the equation, competition for the limited healthcare dollar continues to favour hospital-based rather than community-based services and acute health services rather than health promotion and health maintenance support services. In addition it is already evident that there are health professional shortages in Australia (and worldwide) which will only worsen as the impact of demographic change is felt over the next 10-15 years.

This scenario of limited resources and limited health professionals combined with increasing demands on the healthcare system will necessitate a fundamental examination of models of care delivery, professional boundaries and setting of priorities for the effective use of the healthcare dollar. Incremental change is unlikely to be sufficient. Strategic thinking, planning and innovation therefore needs to start now to effectively deal with these inevitable changes and meet the needs of those with or at risk of viral hepatitis in 2020.

“FRONT AND CENTRE – SUPPORTING PEOPLE WHO INJECT DRUGS TO TAKE A STRATEGIC ROLE IN THE RESPONSE TO HEPATITIS C”

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Australian Injecting & Illicit Drug Users League (AIVL)

In the context of a large and growing hepatitis C epidemic amongst people who inject drugs in Australia, this presentation will examine why it is so important for current drug users to be supported to play a strategic role in all aspects of Australia’s response to the epidemic. In particular, the paper will look at whether peer-based drug user organisations have been adequately supported to undertake the key strategic roles that will be necessary if we are to address the epidemic amongst this group effectively. Issues such as the unique pressures and issues experienced by peer-based user organisations and those involved in them, the impact of the political environment, the role of government bureaucracy in supporting the response and the critical need to ‘re-engage’ drug users on hepatitis C will be explored. The paper will conclude by outlining the potential benefits and potential dangers of failing to strategically position those most affected by hepatitis C to respond to the epidemic.

STRATEGIC ISSUES FOR SMALL COMMUNITIES

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The impact of a 20+ year history of hepatitis C infection in the bleeding disorders’ community has required different approaches to advocacy, and the formation of new alliances and effective partnerships to address the challenges and meet the longer term needs of the community. How do the experiences of this relatively small group of people with complex health problems fit into the bigger picture, and what are the issues for the future?
THE NATIONAL HEPATITIS C PROJECT FOR PEOPLE FROM CULTURALLY AND LINGUISTICALLY DIVERSE (CALD) BACKGROUNDS

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Accessing health care services is known to be problematic for people from CALD backgrounds in Australia due to a myriad of personal, social and systemic barriers. The stigmatised and hidden nature of hepatitis C exacerbates these barriers. The National Hepatitis C Project is funded by the Australian Government Department of Health and Ageing to implement a series of initiatives that will increase awareness of hepatitis C and increase access to hepatitis C services for people from CALD backgrounds.

The aims of the Project are:
• To increase access by people from CALD backgrounds to culturally appropriate information on hepatitis C, including information on hepatitis C testing and treatment
• To increase awareness of hepatitis C among people from CALD backgrounds
• To increase the capacity of hepatitis C sector to provide appropriate responses to people from CALD backgrounds
• To enhance the inclusion of issues faced by people with hepatitis C from CALD backgrounds in Australia’s response to hepatitis C at all levels

These aims are being achieved via five main strategies, including the production of a 12-page booklet in 14 community languages, a workforce development Action Plan and a national awareness-raising ethnic media campaign. Project partnerships include multicultural, hepatitis C, youth, injecting drug user, needle & syringe programme and medical organisations.

This paper will outline the barriers that CALD individuals and communities face in accessing hepatitis C health care services; how the aforementioned Project initiatives have been put into place; how continuing partnerships and strategies are ensuring the sustainability of this Project’s aims; and the response to date from the media campaign.
The close nexus between crime, injecting drug use (IDU) and hepatitis C (HCV) infection, is reflected in the high HCV prevalence amongst prisoners. Approximately 37% of the NSW prison population is infected, representing 3,600 HCV infected inmates at any one time. Inmate populations are ethnically diverse and feature socio-economic disadvantage, low literacy and high rates of mental illness. These factors and the presumption of poor adherence are often used to justify withholding treatment for HCV.

The substantial challenge of establishing a program for surveillance, treatment and clinical research in relation to HCV has been faced in NSW prisons. Over the last decade, the Justice Health Service has implemented a targeted screening program for blood-borne viruses, an integrated network of hepatitis clinics for evaluation and treatment, and more recently the Centre for Health Research in Criminal Justice has been established to foster clinical research.

The targeted screening program for high risk inmates is currently delivered by 12 (full time equivalent) public health nurses covering 30 prison venues with harm minimisation education, counselling, immunisation and treatment interventions. The network of hepatitis clinics now encompasses 9 prison sites, providing specialist evaluation, liver biopsy and treatment services.

A systematic review of the clinical outcomes has revealed that in excess of 1,000 inmates with chronic HCV have attended the clinics over the last decade, of whom ~200 have had a liver biopsy performed, and ~150 have received anti-viral treatment. The treatment outcomes feature low rates of discontinuation and serious adverse events. The sustained virological response rate is consistent with community standards.

In collaboration with CHRCJ, an HCV research agenda has been established, including the NHMRC-funded Hepatitis C Incidence and Transmission in Prisons Study (HITS), which revealed an annual incidence of high risk events for HCV transmission of 2.2% of individuals and an HCV incidence of 11%. An evolving clinical trials program is also being established, including involvement in the NIH-funded Australian Clinical Trial in Hepatitis C (ATAHC). Despite these successes, substantial challenges remain, including development of appropriate triage strategies for both prevention and treatment, broadening of HCV education in the workforce, and ongoing resource limitations.
MEETING THE CHALLENGE OF DEVELOPING PRISON BASED HEPATITIS C AND OTHER BLOOD-BORNE VIRUSES EDUCATION PROGRAMS

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The Western Australian Department of Justice has had a mandatory blood-borne viruses program for inmates in place since 1998. In 2002 a collaborative partnership was established between the Department of Justice and the Department of Health to review the existing program and to develop a new program based upon the recommendations of the review. A key element of the review was extensive consultation not only with prison staff and inmates, but also with community based stakeholders. Inmates have also been actively involved in the development of the new program, which was implemented in early 2006.

The new program has placed an increased emphasis on hepatitis C, women’s information needs and is more inclusive of Aboriginal and Torres Strait islander inmates. A participatory, problem-solving approach has been taken, with the development of a low literacy flip chart as the primary teaching resource. The program is in two sections, the first being delivered on entry and the second being delivered within three months of an inmate’s earliest release date, as a part of their Re-Entry Program.

This paper will discuss the importance of inmate involvement in program development to ensure that programs have credibility with the target group, whilst at the same time working within the constraints of program delivery in a custodial setting.

A REVIEW OF THE OUTCOMES OF HEPATITIS C TREATMENT IN NEW SOUTH WALES

Boonwaat L, Haber P, Levy M, Jagger E, Lloyd A, on behalf of the Hepatitis Group, Justice Health and the Centre for Health Research in Criminal Justice.

Very few prison jurisdictions worldwide offer liver biopsy and treatment for inmates. The feasibility and clinical benefits of such a service remain unproven. Over the last decade, the Justice Health Service has developed a network of hepatologists and public health nurses supporting Hepatitis Clinics conducted in several prison venues across the state. An average of 7984 inmates were in full time custody in NSW in 2002/2003, including 548 females. The 2001 NSW Inmate Health Survey reported a hepatitis C (HCV) prevalence of 40% for male, and 64% for female, prison inmates.

The aim of this project was to describe the outcomes of the diagnostic work-up and antiviral treatment of inmates referred to the Hepatitis Clinics in NSW prisons.

A retrospective review of clinic datasets, medical and pathology records between 1996 and 2004 is being conducted. Demographic and criminological data are being collected for all subjects. Detailed demographic, criminological, and clinical data will be analysed for a nested case-control series, including all subjects who received antiviral treatment (cases) and untreated comparison subjects matched by age and sex.

In the study period 1047 prison inmates attended the Hepatitis Clinics, including 855 males and 192 females. Of this group, 240 received liver biopsy and 140 (13%) received treatment with either interferon (IFN)-α monotherapy or combination therapy with ribavirin. Preliminary analysis of 94 subjects from the treated group revealed 41 (43%) who achieved an end of treatment virological response and 20 (21%) who achieved a sustained virological response (SVR) 6 months after treatment completion. There were 9 (10%) were non-responders to treatment, 14 (15%) who discontinued treatment and 12 (13%).

An integrated hepatitis clinical service has been established in the NSW prisons. The service has identified a significant number of inmates who are suitable for, and willing to undertake liver biopsy and treatment for chronic HCV. Preliminary analyses showed an acceptable rate of both SVR and treatment discontinuation. Hepatitis C clinical assessment and antiviral treatment services in NSW prisons are both feasible and valuable.
HIV/VIRAL HEPATITIS CO-INFECTION: INSIGHTS FROM CASE STUDIES

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Estimates of the numbers of people living with hepatitis C, hepatitis B and HIV in Australia are 210,000, 90,000 – 160,000, and 15,000, respectively. Among people with HIV, an estimated 13% (1950) and 7% (1050) are co-infected with HCV and HBV, respectively.

Several aspects of the natural history of HCV and HBV infection are altered through HIV coinfection: progression to chronic HCV infection and chronic HBV infection is increased; levels of HCV RNA and HBV DNA are higher; and chronic liver disease progression is accelerated. Although markers of biochemical and histological hepatic inflammation are reduced in HIV/HBV coinfection compared to HBV monoinfection, the risk of progression to advanced liver disease is markedly increased. Case studies will be presented to describe several important clinical phenomena in the setting of HIV/viral hepatitis co-infection:

1) Reversal of HIV/HBV-related end-stage liver disease by marked and maintained HBV DNA suppression on tenofovir;
2) Risk of immune restoration hepatitis following commencement of highly active antiretroviral therapy (HAART);
3) Delayed anti-HCV antibody seroconversion and subsequent virological clearance associated with HAART initiation;
4) Sustained HCV virological clearance following HAART re-commencement, despite lack of end-of-treatment response to pegylated interferon and ribavirin therapy.

These cases will highlight the complex nature of HIV/viral hepatitis clinical management, and the central role of the immune response in determining clinical outcomes.

HCV/HIV AND HBV/HIV CO-INFECTIONS

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Coinfection with hepatitis C (HCV) and B (HBV) viruses affects 30% and 8% of human immunodeficiency virus (HIV) infected patients. The importance of treating HCV and HBV-associated morbidities in a growing population of patients coinfected with HIV has increased since introduction of highly active antiretroviral therapy. The first European Consensus Conference on the Treatment of Chronic Hepatitis B and C in HIV Co-infected Patients was held March 2005 in Paris to address these issues.

HIV/HCV-coinfected patients have higher HCV RNA loads and show more rapid progression of fibrosis than monoinfected patients. Combination therapy with pegylated interferon plus ribavirin is the standard of care for HCV in coinfected patients. The sustained response rate ranged from 20% to 40%. Therapy slows fibrosis progression, but toxicity prevents identification of the most effective ribavirin dose. Other challenges include anemia, mitochondrial toxicity and drug-drug interactions.

Chronic hepatitis C should be treated in HIV/HCV-coinfected patients, but steps must be taken to prevent and treat potential toxicities. HIV/HBV-coinfected patients have higher HBV DNA loads and showed higher risk of cirrhosis and liver death than HBV-monoinfected patients. Because anti-HBV therapy is exceptionally associated with HBe or HBs seroconversion, permanent suppression of HBV replication may be necessary to reach therapeutic objectives. The three approved drugs for the treatment of CHB include interferon alpha (IFN), lamivudine (LAM) and adefovir dipivoxil (ADV). LAM, tenofovir disoproxil fumarate (TDF) and emtricitabine (FTC) are approved for HIV and active against HBV. Prolonged monotherapy with LAM or FTC is associated with a high rate of HBV resistance. ADV and TDF are effective against wild type and LAM-resistant HBV in HIV co-infected patients. No HBV-resistance mutations have been documented in patients receiving nucleotide analogues but TDF or ADV was added to LAM in almost all the reported patients. Combination therapy with a nucleoside and a nucleotide analogue may ideally prevent long term HBV resistance and is recommended for the treatment of CHB in coinfected patients who required antiretroviral therapy for the control of HIV.
EXPRESSION OF THE CHEMOKINE CXCL-10 (IP-10) IN HEPATITIS C (HCV) LIVER INJURY

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Background: The mechanism by which the immune response to hepatitis C (HCV) infection causes intrahepatic fibrosis is poorly understood. Previous work by us and others has demonstrated upregulation of the small inducible chemokine CXCL-10 (IP-10) in human HCV associated cirrhosis. Therefore, we hypothesize that (1) CXCL-10 expression is an important mediator of the profibrogenic intrahepatic response to HCV infection and (2) CXCL-10 acts directly on the hepatic stellate cell (HSC) the pivotal cell involved in the development of hepatic fibrosis.

Methods: CXCL-10 mRNA expression was studied in pooled cirrhotic (n=4 per group) human liver explants (including HCV cirrhosis) as well as non-diseased controls (n=8) using 874 gene arrays. Further, HSC were isolated using collagenase/pronase perfusion and density gradient centrifugation from normal, bile duct ligated (BDL) and carbon tetrachloride (CCl4) treated Sprague Dawley rats. Additionally, culture activated rat HSC were treated with interferon (IFN) alpha, beta and gamma (1000U/ml) and subject to 4992 gene rat microarray analysis at 0, 20, 90 and 240 minutes after administration.

Results: Following human gene array analysis the upregulation of CXCL-10 mRNA was greatest in HCV cirrhosis (4.01x ND) followed by primary sclerosing cholangitis cirrhosis (3.78x ND) and autoimmune hepatitis cirrhosis (3.37x ND). CXCL-10 mRNA upregulation was not seen in primary biliary cirrhosis associated cirrhosis. Rat HSC were shown to express IP-10 mRNA and protein with the highest levels of expression seen in culture activated HSC, followed by in-vivo HSC activation (BDL and CCl4). The CXCL-10 expression was lowest in quiescent HSC isolated from normal rats. Following IFN alpha, beta or gamma administration microarray analysis demonstrated CXCL-10 mRNA upregulation in culture activated HSC within 90 minutes of administration.

Conclusion: CXCL-10 is upregulated in human cirrhosis with the greatest level of induction being seen in HCV associated cirrhosis. Further, IP-10 is expressed in HSC and upregulated in response to HSC activation. Additionally, rapid upregulation of HSC CXCL-10 expression was demonstrated in response to IFNs which are known mediators of the immune responses to HCV infection. Therefore, CXCL-10 induction in HCV is likely to be important in HSC activation and consequently an important mediator of intrahepatic fibrogenesis.
GBV-B/HCV P7 AND HVR1 CHIMERIC ENOMES ARE INFECTIOUS IN VIVO

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3 Dept of Medicine, The University of Melbourne

GBV-B is a close relative of HCV that causes hepatitis in tamarins and marmosets and represents an attractive model for HCV. The virus shares only 28% amino acid identity in its polyprotein with HCV polyprotein while their genomic organizations are identical. In both viruses, almost the entire genomes function as a single large open reading frame that is flanked by 5' and 3' untranslated regions (UTR); structural proteins are located at the N-terminus and nonstructural proteins at the C-terminus. In this study we used conventional fusion PCR and cloning methods to generate the chimeric full length cDNA of GBV-B/HCV. Two chimeric cDNA were constructed: 1) bearing HCV p7 protein replacing partial or the entire GBV-B p13 protein, 2) bearing an HVR1 epitope at the N-terminus of E2 protein. Following in vitro transcription, the run-off RNA transcripts from each construct were injected intrahepatically into one naïve marmoset. The animals were monitored for viremia by real time RT-PCR. All the animals injected with the chimeric RNA transcripts became transiently viremic and the viremia lasted for 1-2 weeks. Injection of one naïve animal with the serum from the animal injected with HVR chimera resulted in a transient infection and demonstrated that the serum contained infectious particles packaging the chimeric genome. Sequencing of the HVR1 insert region also demonstrated the kinetics of the insert during the course of infection.

In this study, for the first time, we generated and tested GBV-B/HCV chimeric RNA genomes for their infectivity and stability. We demonstrated that the chimeric genomes of GBV-B bearing either the HVR1 or p7 coding sequence were infectious in vivo. We also demonstrated that GBV-B/HCV HVR chimeric genome was packaged into infectious particles as it was confirmed by inoculation of a naïve animal with the week 1 post inoculation serum. We believe that chimeric GBV-B/HCV viruses can be used as valuable tools to study HCV and also to generate reliable HCV models to test potential vaccines and anti-viral agents in vivo.
increasing access

MONDAY 20 – WEDNESDAY 22 FEBRUARY 2006
THE SYDNEY MASONIC CENTRE, SYDNEY, AUSTRALIA

ORAL PRESENTATION
ABSTRACTS
WEDNESDAY 22 FEBRUARY 2006
WEDNESDAY 22 FEBRUARY 2006

Concurrent Session – Social Research
Living with Hepatitis C (9.00am – 10.30am)

RESPONSES TO DIAGNOSIS: REACTIONS AMONGST INJECTING DRUG USERS ON DISCOVERY OF AN HCV, HBV, OR HIV POSITIVE DIAGNOSIS

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The HCV Social Networks study is a longitudinal cohort study of Melbourne metropolitan injecting drug users (IDU), looking at Hepatitis C, risk behaviours and social networks. A group of young IDU are regularly interviewed and tested for presence of Hepatitis C virus, and Hepatitis B and HIV tests are also performed. Participants are recruited primarily through outreach methods, and research staff has ongoing contact with participants providing pre and post test counselling, referrals, and social support. Using the preliminary data from the Networks (“N2”) study, we will outline prevalence rates amongst this sample. Relatively high rates of HBV exposure have been found.

The researchers’ ongoing contact with participants has provided the opportunity to monitor individual responses over the initial period following diagnosis, providing information and support. Participants’ immediate and short term responses have ranged from indifference to alarm. There has been wide variation in participants’ attendance to health services after recommendation. In general, experiences contradict the conventional wisdom that IDU’s are uncaring about a positive HCV diagnosis, or have it ranked quite low on their list of priorities.

I THINK THERE IS NO SUPPORT AT ALL: YOU ARE A TOTAL LONE WOLF: THE IMPORTANCE OF SOCIAL SUPPORTS IN COPING WITH HEPATITIS C

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The detrimental effect of poor social supports on physical and mental health is a critical factor for people living with hepatitis C. However, little social research has addressed explicitly the benefit and meaning of social supports for people living with this virus.

This paper draws on a 2004 qualitative sociological study of the concerns and experiences of 20 individuals living with hepatitis C in Auckland, New Zealand. Semi-structured interviews were conducted with participants drawn from the Narcotics Anonymous fellowship and through the New Zealand Hepatitis C Resource Centre. This interview data is to be incorporated into an ongoing comparative research study looking at individuals’ experiences of living with hepatitis C in Auckland and Sydney.

One major finding of this research is that the stigma and silence surrounding hepatitis C contributes to a high level of social exclusion and isolation for people living with the disease. This paper will address participants’ experiences of isolation and support, with reference to the use of support groups and other avenues for gaining assistance and information about the disease. Interviews revealed a striking discrepancy between the way the participants from Narcotics Anonymous and those recruited through the Hepatitis C Resource Centre interviewed. While participants who belong to Narcotics Anonymous have stronger social supports the majority of participants were alienated by their disease and had little help in dealing with problems associated with chronic hepatitis C. The ideal of a supportive group was undercut by a variety of factors including elements of stigma and social division associated with methods of hepatitis C transmission. A consistent lack of support and information from the medical system meant that many participants became researchers of their own disease. Knowledge and information, while at times contradictory and confusing, helped to provide a sense of support against the vicissitudes of hepatitis C.
BIOGRAPHICAL DISRUPTION AND HEPATITIS C

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The theory of biographical disruption posits that the diagnosis and symptoms of chronic illness create a radical disruption to the recipient's life. The scant hepatitis C social research that has attended to this concept indicates that individuals with hepatitis C experience a similar disruption to their biographies upon diagnosis. However, in this paper I posit that the concept of biographical disruption is contextual; in that participants who had already experienced significant life threatening events incorporated the diagnosis of hepatitis C into their identity more readily than those with stable lives. This paper draws on a 2004 qualitative sociological study of the concerns and experiences of 20 individuals living with hepatitis C in Auckland, New Zealand. Semi-structured interviews were conducted with participants drawn from the Narcotics Anonymous fellowship and through the New Zealand Hepatitis C Resource Centre. This interview data is to be incorporated into an ongoing comparative research study looking at individuals' experiences of living with hepatitis C in Auckland and Sydney.

The contextual nature of biographical disruption is important as it helps clarify why current intravenous drug users often do not prioritise hepatitis C. Evident in the narratives of individuals who identified a past of intravenous drug use was a greater acceptance of their diagnosis. For marginalised individuals whose lives are already disrupted by poverty and stigma, a diagnosis of hepatitis C seems to be congruent, even expected. For the participants who didn't identify a history of drug use the diagnosis of hepatitis C created a stronger identity disruption. This has both to do with their previous experience of control and social acceptance, as well as the conflation of hepatitis C with intravenous drug use. While hepatitis C is invisible, and for some people asymptomatic, its association with a deviant lifestyle can do more damage than its symptoms.
BEFORE YOU KNOW IT YOU HAVE SLIPPED INTO THE UNDER CLASS, YOU ARE NOT EVEN THE WORKING CLASS ANYMORE: WOMEN, INEQUALITY AND HEPATITIS C

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The small amount of gendered research available shows that sexual and reproductive health is a major issue for many Australian women with hepatitis C (HCV) who express concerns about pregnancy, relationships and mothering and who reported low levels of contraceptive use compared to the Australian national average. Through in-depth interviews with 109 women in Canberra and Melbourne our study expands understandings of women's experiences of living with HCV, with a particular focus on their use of contraception. The data collection was enriched by more general investigation into participants' histories of injecting and other drug use, hepatitis C, their sexual and reproductive histories (including relationships) and access to, and experiences of, healthcare services.

Despite our focus on contraceptive use women's narratives painted a much more complex picture of the issues that override their sexual and reproductive health experiences. Most notably, both current and previous material, social and emotional inequalities featured at the core of many women's lives. These inequalities were reflected in their drug use, HCV experiences, family life, sexual and reproductive health and day-to-day existence.

The importance of these experiences to participants leads to complex questions about the role of drug use, gender and socio-economic position in relation to the transmission of inequality and the transmission of HCV. It also raises questions about how we as researchers should respond to differences between participants' views and our views of what should be the main research focus, in this case, sexual health or inequality.

INCREASING ACCESS AND UPTAKE OF HEPATITIS C TREATMENT BY INDO-CHINESE INJECTING DRUG USERS

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This paper examines hepatitis C-related decision-making by Indo-Chinese injecting drug users (IDUs) and explores implications for increasing treatment uptake in this vulnerable group.

Data are drawn from ongoing ethnographic research designed to understand how cultural beliefs and practices shape explanatory models of hepatitis C and barriers to treatment access and uptake. Fieldwork and in-depth interviews were conducted in South Western Sydney. Cambodian, Lao and Vietnamese background IDUs (n = 55) were recruited using theoretical and snowball sampling techniques based on street and social networks. A grounded theory approach was used to code and compare content and identify emergent themes.

Stoicism and self-responsibility played a key role in determining when, and for what purpose, participants were willing to seek help. Hepatitis C infection served as a potent symbol of contamination, with treatment viewed by many as a way to remove the “stain” of injecting drug use and participants associating treatment with “starting afresh” and cessation of drug use. Reluctance to engage with treatment was also influenced by fear of “losing face”, limited acceptability of western approaches to diagnosis and history taking, competing priorities and cultural beliefs regarding the management of liver problems and use of western medicine.

Despite awareness of potential positive treatment outcomes, cultural beliefs and personal circumstances had a significant influence on decision-making regarding when and for what purpose participants would seek treatment. Innovative, culturally sensitive service responses are needed to promote trust in practitioner-client relationships, conducive to frank discussion regarding both clinical and client perspectives of the benefit of hepatitis C treatment. Data will be used to inform the development of the second stage of the research consisting of a small trial of a culturally appropriate brief intervention and facilitated referral to a tertiary liver clinic.
COGNITIVE AND MOOD EFFECTS OF PEGYLATED INTERFERON ALFA-2A AND RIBAVIRIN COMBINATION THERAPY IN HCV MONOINFECTED AND HIV/HCV COINFECTED INDIVIDUALS

The objectives were to examine the impact of pegylated interferon (PEG-IFN) alfa-2a and ribavirin therapy on cognitive function and mood in HCV monoinfected and HIV/HCV coinfected individuals, including the effect of therapeutic HCV clearance and to explore correlations between changes in cognitive performance and mood.

In a prospective cohort study conducted between April 2003 and August 2005 in Sydney, Australia, HCV monoinfected and HIV/HCV coinfected individuals' cognitive function and mood were measured prior to, during and 24 weeks following PEG-IFN and ribavirin therapy using the National Adult Reading Test (NART), computer-based battery, Trail Making Tests A and B, and Depression Anxiety Stress Scales (DASS).

19 HCV monoinfected and 15 HIV/HCV coinfected individuals underwent HCV treatment. Pre-treatment cognitive performance and mood status were similar between the groups except that the reaction time in simple detection (simple reaction time) was significantly slower among the HCV monoinfected than the HIV/HCV coinfected group (2.72 vs. 2.68, effect size (ES) = 0.51, P = 0.03). The magnitude of changes during HCV treatment was small to medium (ES<0.50), with changes reverting to pre-treatment levels in both groups except the speed of simple identification (choice reaction time) among the HCV monoinfected group. Significant difference between individuals achieving a sustained viral clearance and those who did not was observed in post-treatment speed of performance relating to continuous attention (monitoring) independent of pre-treatment depression scores (2.49 vs. 2.57 ms, ES = 0.78, P = 0.05). An increase in depression score (from pre-treatment to week 18 on-treatment) correlated significantly with a poorer performance in simple detection (r = 0.42, P = 0.03) and TMT A (r = 0.50, P = 0.01).

Our findings demonstrate similar cognitive function and mood patterns in HCV monoinfected and HIV/HCV coinfected individuals prior, during, and following PEG-IFN and ribavirin combination therapy. There was evidence to support cognitive effects of HCV independent of mood status, but the association between cognitive performance and mood needs further investigation in a larger sample.
REFERRAL FOR CHRONIC HCV TREATMENT AMONG PATIENTS ON OPIOID REPLACEMENT THERAPY

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The aim of the study was to evaluate referral for interferon/ribavirin (IFN/RBV) treatment of chronic hepatitis C (HCV) in patients receiving opioid replacement treatment (ORT).

A prospective clinic audit was undertaken of clinical assessment, specialist referral, liver biopsy and IFN/RBV treatment of chronic HCV in patients receiving ORT at an inner city Sydney practice between December 2002 and November 2005.

A majority of patients (75%, 178/237) were HCV antibody positive, of whom 170 had no previous IFN-based treatment and no absolute treatment contraindications. Approximately 70% of these patients had evidence of chronic HCV, 50% (n=85) met pre-liver biopsy S100 criteria for HCV treatment, and 37% (n=63) were considered a high priority for treatment assessment based on pre-determined risk factors for significant hepatic fibrosis (such as duration of infection > 10 years + elevated hepatic enzymes). Of the 63 patients meeting referral criteria, 45 (71%) were referred to a specialist liver clinic, and 27 (43%) attended during the study period. Of these 27 attendees, 20 underwent liver biopsy staging and 7 had severe fibrosis/cirrhosis. All patients with biopsies had sufficient liver damage to meet S100 criteria for treatment. Of the 8 patients commenced on IFN/RBV treatment, 1 ceased due to non-response, 4 had a sustained virological response (SVR) and 5 achieved end of treatment (ETR).

Methods: Patients with CHC on drug dependency treatment commenced on IFN/RBV treatment and biopsies had sufficient liver damage to meet S100 criteria for treatment. Of the 8 patients commenced on IFN/RBV treatment, 1 ceased due to non-response, 4 had a sustained virological response (SVR), 2 had an end-of-treatment response (in SVR follow-up), and 1 is currently on treatment. Treatment has been planned for a further 7 patients and deferred in 7 patients due to relatively early liver disease (F1/2). Referral attendee patients were more likely to have HCV genotype 2/3 (73% versus 46%), but other factors including current injecting drug use, alcohol dependence, and other potential psychosocial barriers to treatment were similar among referral attendee and other patients meeting referral criteria.

Despite many potential barriers to HCV treatment in this ORT patient population, a considerable number have been referred for treatment assessment. The lack of early liver disease among patients meeting pre-determined referral criteria supports removal of mandatory liver biopsy. Preliminary treatment outcomes are favourable and suggest that HCV treatment is feasible in a large number of ORT patients in Australia.

PEGYLATED INTERFERON ALFA-2A PLUS RIBAVIRIN FOR PATIENTS WITH CHRONIC HEPATITIS C (CHC) ON DRUG DEPENDENCY TREATMENT: INTERIM ANALYSIS FROM THE METHADONE STUDY

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Background and Objectives: The majority of cases of chronic hepatitis C (CHC) in Australia are related to injecting drug use (IDU). An estimated 37,000 people receive drug dependency treatment in Australia.1 Despite this HCV treatment uptake has been limited in people on drug dependency treatment.1 This pilot study aims to determine the safety, efficacy, and tolerability of peginterferon alfa 2a (40KD) and ribavirin among people with CHC receiving drug dependency treatment (methadone, buprenorphine or naltrexone).

Methods: Patients with CHC on drug dependency treatment received standard regimens of peginterferon alfa-2a and ribavirin: genotype (Gt) 2 or 3 received 180 μg once weekly plus 800 mg/day of ribavirin for 24 weeks and patients with genotype 1 received 180 μg once weekly plus 1000-1200 mg/day of ribavirin for 48 weeks. Standard HCV RNA assessment of treatment response were undertaken at week 12 (EVR), end-of-treatment (ETR) and 24 weeks post-treatment (SVR).

The psychological impact of therapy was assessed using the Beck Depression Index (BDI II), MINI International neuropsychiatric interview (MINI) and State Trait Anxiety Index (STAI) prior to, during and after treatment.

Results: Twenty-six patients had commenced treatment had ETR data available. Of these 17/26 (65%) achieved ETR (12/15 Gt 2/3 and 5/11 Gt 1). Of the 17 patients with ETR, 7 have a SVR (all Gt 3), 2 had a post-treatment relapse (1 Gt 3, 1 Gt 1) and 7 continue in follow-up. 1 patient did not return for SVR assessment.

Conclusions: These interim results suggest that efficacy of pegylated interferon alfa 2a and ribavirin when used in a patient population receiving drug dependency treatment is similar to non-IDU populations. Further, although data on the psychological impact of therapy is limited, it suggests treatment does not have a negative psychological impact on this group of patients.
HEPATITIS C, HEPATITIS B AND HEPATOCELLULAR CARCINOMA

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It is unclear whether clinical presentation and outcome of hepatocellular carcinoma (HCC) differs according to the virologic aetiology of underlying liver disease. This study was performed to compare clinical presentation of HCC between hepatitis C and hepatitis B infected patients at a major teaching hospital in Sydney, Australia. A prospective HCC database has been maintained at RPAH since 1998. Of 235 patients with 12-month minimum follow-up to November 2003, 83 had chronic HCV, 82 had chronic HBV and 10 had both. Analysis was performed of HCV and HBV positive patients according to demographic features, severity of liver disease, stage of HCC at presentation and overall survival.

In univariate analysis of factors affecting survival, survival was not different according to underlying aetiology of liver disease, however Asian patients had a better survival compared to Caucasian patients (Median 34 mths vs 17 mths, OR 0.64 95% CI 0.45-0.90). These results were confirmed in multivariate analysis using a Cox regression model. In this model, the presence of ascites, impaired performance status, increasing tumour size or number, portal vein thrombosis, and AFP > 50 were all significant predictors of survival.

In conclusion, HCC patients with HCV were more likely to be Caucasian, have a history of excessive alcohol and be cirrhotic than those with HBV. Those with HCV had more advanced liver disease at presentation, however tumours were larger, more symptomatic and with higher AFP levels in HBV pts.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Hepatitis C</th>
<th>Hepatitis B</th>
<th>P Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male gender, n (%)</td>
<td>65 (79%)</td>
<td>68 (82%)</td>
<td>ns</td>
</tr>
<tr>
<td>Age, mean</td>
<td>57.0</td>
<td>54.6</td>
<td>ns</td>
</tr>
<tr>
<td>Ethnicity</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Caucasian Asian</td>
<td>49 (60%)</td>
<td>25 (30.5%)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Cirrhosis, n (%)</td>
<td>80 (98%)</td>
<td>73 (89%)</td>
<td>0.029</td>
</tr>
<tr>
<td>History of alcohol</td>
<td>25 (30.5%)</td>
<td>5 (6%)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Size of largest tumour</td>
<td>3.45</td>
<td>5.31</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Ascites</td>
<td>26 (32%)</td>
<td>20 (24%)</td>
<td>ns</td>
</tr>
<tr>
<td>Varies</td>
<td>46 (56%)</td>
<td>22 (26.5%)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Childs-Pugh, A/B/C</td>
<td>41(28/13)</td>
<td>59/15/7</td>
<td>0.011</td>
</tr>
<tr>
<td>Tumour symptoms</td>
<td>14 (17%)</td>
<td>26 (32%)</td>
<td>0.029</td>
</tr>
<tr>
<td>Extent &gt;50%</td>
<td>3 (4%)</td>
<td>14 (17%)</td>
<td>0.005</td>
</tr>
<tr>
<td>Portal vein thrombosis</td>
<td>4</td>
<td>7</td>
<td>ns</td>
</tr>
<tr>
<td>AFP ≥ 50</td>
<td>33 (40%)</td>
<td>48 (59%)</td>
<td>0.015</td>
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</tbody>
</table>

SPECIALISTS MEDICAL PRACTITIONERS AND KNOWLEDGE OF HEPATITIS C: RESULTS OF A QUEENSLAND SURVEY

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In 2003 – 2004 the HIV & HCV Education Projects of the University of Queensland, surveyed all medical practitioners registered in Queensland to assess their knowledge about viral hepatitis, and their current and preferred methods of acquiring information on hepatitis C (HCV). The two page survey was mailed out (11 332 surveys) by the Medical Board of Queensland with replies returned through a reply paid envelope (3186 surveys, 28.5%). Responses were received from 712 doctors who identified as Specialists. The specialities included Surgery (205, 29%); Medicine (165, 23%); Anaesthetics (126, 18%); Psychiatry (94, 13%); Paediatrics (62, 9%); and Obstetrics and Gynaecology (60, 9%). 21 Physicians listed their medical speciality as Gastroenterology or Infectious Diseases (ID). Nine questions were asked to assess knowledge about viral hepatitis; 5 related to HCV; 3 to hepatitis B and one to hepatitis A. Gastroenterologists and ID Physicians (n = 21) had the highest score for appropriate responses (mean 6.52 ± 1.12), followed by Paediatricians, other Adult Physicians, Obstetricians/Gynaecologists, Anaesthetists, Surgeons, then Psychiatrists (mean score 3.70 ± 1.76). 65 to 78% of Specialists indicated that household contact was not a significant risk factor for HCV transmission, with this figure being 100% for Gastroenterologists and ID physicians. 71% of this later group also indicated that HCV can be eradicated by treatment, while in the other specialties this ranged from 47 to 17%. Slightly over 40% of Adult and Paediatric Physicians indicated HCV was considered a sexually transmitted infection, while for the other Specialties this was in excess of 55%. Only Paediatricians and Gastroenterologists and ID Physicians scored better than General Practitioners on all 9 test items, although there were no significant differences when individual questions were examined. 85% of Specialists said they learnt about HCV from journals, with 71% learning from colleagues and 50% from meetings. Over 90% of Specialists
indicated their preferred method of learning about HCV is from fact sheets, with a further 51% each indicating videos and face-to-face learning would be alternatives. These data provide an overview of the Specialist Medical Practitioners understanding of viral hepatitis and provide insight into strategies to disseminate information about hepatitis C.
HEPATITIS C VIRUS INFECTION IN SOUTH AUSTRALIA: DURATION OF INFECTION AND BURDEN OF DISEASE ESTIMATES

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Hepatitis C virus (HCV) is a parenteral pathogen with a worldwide distribution and cause of chronic liver disease; thus, is of public health concern. South Australia undertakes enhanced surveillance on all cases of Hepatitis C virus (HCV) infection through mandatory notification, which began in 1995. Medical notification data at diagnosis include patient demographics, testing history, alanine aminotransferase (ALT) and details of likely exposure; including age at first injecting drug use (IDU). Testing history enables classification into prevalent and incident cases. Incident cases describe recently acquired HCV infections and account for fewer than 7% of new diagnoses each year. This study describes a subset of cases of HCV infection notified between 1995 & 2005 to assess the burden of chronic liver disease. Nominal age of first IDU allows calculation of maximum duration of infection where risk is IDU and where HCV infection is attributed to receipt of blood, the year of transfusion provides a marker of exposure. The maximum duration of HCV infection was estimated from notification data, and further analysed using demographic and epidemiological information.

The maximum duration of HCV infection was estimated for 5430 cases reported between 1995 and 2005. Of these, only six percent are likely to have been infected for more than 25 years, and 13% for 21-25 years. A further 22% may have been infected for 16 to 20 years and 20% for 11-15 years. Most cases were born between 1950 and 1979 and two thirds are male. Among 8633 prevalent cases reporting an ALT result at diagnosis, half were above the normal range, with a mean ALT of 99U/L. A picture of disease burden is drawn when ALT at diagnosis is related to likely length of infection.

Estimates of transmission show the main HCV epidemic occurred 15 to 30 years ago. The current disease burden contributed by HCV is likely to mirror the dynamics of the past epidemic. Cases at the peak of the epidemic are about to pass twenty years duration of infection, and will increasingly impact on health systems over the next 20 years.
VIRAL HEPATITIS AND HIV IN NZ INJECTING DRUG USERS - THE IMPACT OF ACCESS TO NEEDLE EXCHANGE 1997-2004

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We measured the seroprevalence of hepatitis C (HCV), hepatitis B (HBV) and human immunodeficiency virus (HIV) among New Zealand injecting drug users (IDU) attending needle exchanges, and examined trends in seroprevalence and risk factors by comparison with previous national seroprevalence surveys in 1997 and 1998. In November 2004, IDU clients attending nine peer-based NZ needle exchanges completed anonymous questionnaires, and provided finger-prick blood samples. Four hundred and twelve people completed questionnaires and matching blood samples were obtained for 403 people. Four respondents tested positive for HIV (1%). Almost two thirds (61%) of respondents tested were not immune to HBV. The prevalence of HCV was high (70%) and strongly associated with age and duration of injecting. Higher rates of HCV were found in males and those who had been on a methadone programme. No association was found between HCV status and ethnicity or recent injecting behaviours. Eighty-eight percent had been previously tested for HIV, 91% for HCV and 65% for HBV but many were unaware of, or didn’t understand their results.

The majority of respondents (94.5%) obtained their injecting equipment from a needle exchange. Half reported using a new needle and syringe every time they injected drugs and another 40% reported doing so most of the time. Sharing of other equipment such as spoons and tourniquets was reported by 40% of respondents. Approximately half did not use condoms with new sexual partners, or with casual sexual partners, and most did not use condoms with regular sex partners.

Seroprevalence of HCV is high among NZ IDU and has changed little since 1998. However, the prevalence of HIV remains low. Almost two thirds of IDU are not immune to HBV and are at risk of infection. Risky sexual behaviour is still highly prevalent amongst IDU, though there have been positive changes in their injecting behaviours. These results suggest that access to needle exchange has had an impact on the behaviours of IDU clients. However, it also identifies some significant challenges for the future, not least of which is improving access to needle exchange among those who don’t currently use this service.
HEPATITIS C VIRUS SEROPREVALENCE AND RISK BEHAVIOURS AMONG INDIGENOUS AUSTRALIAN IDUS 1995-2004

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Little is known about HCV seroprevalence and risk behaviours among Indigenous Australians who inject drugs. The NSP survey is a cross-sectional survey, conducted over a one week period annually at selected NSPs in all Australian states/territories. Participants are asked to complete a brief, self-administered, anonymous questionnaire about demographic characteristics and injecting and sexual risk behaviours. Participants are also asked to provide a capillary blood specimen for HIV and HCV antibody testing. Participants who reported Indigenous background in the survey years 1995 to 2004 were included in this analysis. Overall, 55%-65% of the 1614 Indigenous IDUs were male. The median age increased from 27 years (1995) to 34 years (2004), with little variance in age at first injection over the 10 year period (16-17 years). The median duration of injection was 7 to 12 years. Heroin was the most frequently injected drug from 1995 to 2000, with a significant decrease after 2001. After this time, an increasing proportion of Indigenous IDUs reported that the last drug injected was amphetamines. Reporting of daily or more frequent injection ranged from 46% (1995) to 69% (1999). The majority of participants reported imprisonment in the last year, ranging from 63% (2000) to 75% (2003).

Over the study period, HCV prevalence varied from 45% to 65% (P<0.001). The prevalence of HCV was higher in Indigenous IDUs reporting female gender, older age, longer duration of injection, injecting drugs other than amphetamine, recent imprisonment, and sex work. There was no obvious association between HCV infection and injection frequency, public injection, and sharing of needles and syringes in the last month among Indigenous IDUs in this analysis.

Anti-HCV prevalence among Indigenous IDUs in Australia has remained high over the last decade and is comparable to the HCV prevalence among non-Indigenous NSP attenders. Culturally appropriate public health interventions are needed to target the variety of HCV risk factors relevant to this population.

NATIONAL SURVEILLANCE FOR HEPATITIS C VIRUS INFECTION IN AUSTRALIAN CHILDREN

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The incidence and natural history of HCV infection in Australian children is not known. We aimed to describe the epidemiology, mode of acquisition and early management of children aged <15 years diagnosed with HCV infection. Between Jan 2003-Dec 2005 paediatricians (n=1052) on the APSU mailing list were asked each month to notify children seen by them with newly diagnosed HCV infection (positive anti-HCV antibody and/or HCV RNA) and to provide de-identified clinical data using a structured questionnaire. During 2003-2004, the return rate of monthly cards was 80%. Of 57 HCV notifications, 24 were incident cases, 6 duplicates, 18 reporting errors and 9 had missing data. Most reported HCV infected children were born in Australia (67%) to an HCV-antibody positive mother (83%). Other childhood risk factors for HCV included IV drug use (3/24) and parenternal exposure in a high prevalence country (1/24). Of the 3 children with documented IV drug use, 2 had HCV negative mothers, and the HCV status of the other child's mother was unknown. Maternal risk factors for HCV infection included maternal IV drug use in 15 (63%), invasive procedures in 5, tattoos in 7 (29%), 4 of whom also had a history of IV drug use, vaccination (1) and home electrolysis (1) (both these exposures occurred in an HCV endemic country). Median age at diagnosis was 5.3 years (range 1m-15y), 25% of children were diagnosed less than 2 years of age, and 67% less than 6 years of age. Most HCV infected children (19/24) were asymptomatic at diagnosis. Reported clinical features at diagnosis were: lethargy (2), bruising (1), hepatomegaly (1) and failure to thrive (1, in a child with lethargy). Mildly elevated alanine transaminase levels at diagnosis were recorded in 17/20 (85%); median AST value 05 IU/ml (range 38-232).

The majority of HCV infected children in Australia are born to HCV infected mothers, and are asymptomatic at diagnosis with mildly abnormal liver function tests. Some mothers had more than one risk factor recorded. The reported number of infected children is lower than predicted by Federal de-identified laboratory notifications. This may be a result of under-diagnosis and/or under-reporting.
Hepatitis C virus (HCV) is unusual for a RNA virus because a majority of individuals who are infected develop a lifelong persistent infection. The acute stage of the infection is often asymptomatic, and does not represent a clinical problem. In contrast, the persistent infection results in the development of hepatitis and cirrhosis in a high proportion of patients and may develop into hepatocellular carcinoma in some patients. The current treatment is a combination therapy of pegylated interferon-alpha and ribavirin and this is successful in approximately 50% of all patients, although these are generally highly selected. Furthermore, genotype 1 virus which is most prevalent in Western countries, is more resistant to treatment, and many patients encounter severe side effects during treatment.

Consequently, there is an urgent need for more effective, convenient antiviral agents or novel therapies. The HCV-specific immune response during infection is poor, most likely because several of the viral antigens are known to be immunosuppressive. We plan to examine the potential of HCV antigen-pulsed dendritic cells (DC) to influence the outcome of the infection. DC are the most powerful of the antigen presenting cells which initiate the immune response. The study will require patients who are infected with genotype 1 virus and have failed therapy to donate white blood cells by a process of leukapheresis. The white blood cells will then be manipulated in the laboratory to produce DC which will then be pulsed with HCV-specific lipopeptide antigens. This will result in the maturation of the DC which will then be returned to the same patient.

It is hoped that the mature, HCV antigen-loaded DC will then stimulate an effective immune response in the patient that may result in viral clearance.

The study has been approved by the Therapeutic Goods Administration and by the local ethics committee, and represents a novel form of DC immunotherapy that has not been trialled elsewhere.

The presentation will discuss the rationale behind the study and current progress towards the clinical trial which is planned to begin in March, 2006.
NEW ANTI-HCV DRUGS CURRENTLY IN CLINICAL TRIALS

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The current treatment regimens for chronic hepatitis C (CHC) consisting of a pegylated interferon alfa combined with ribavirin are associated with significant side effects. Many patients are not candidates for treatment or are unable to complete the course of treatment. Overall sustained treatment response rates are approximately 50 percent of those treated. A large number of compounds are currently in the preclinical or clinical state of development for the treatment of CHC. This discussion will be limited to those currently in clinical trials. Three major categories of anti-HCV agents are currently in the development stage: Ribavirin-like compounds (e.g. viramidine), new interferons (e.g. albumin-interferon alpha), and specific targeted antiviral therapy or STAT (e.g. VX950, SCH 503034, and valopicitabine). Viramidine appears to be farthest along, and barring unforeseen problems, should be available in the near future. Viramidine will most likely replace ribavirin in a segment of those treated, the primary benefit being a decreased incidence of drug-induced anemia. Albumin-interferon alpha showed promising results and may replace pegylated interferon in the near future. STAT are several years away from approval. While early viral suppression data appear promising, sustained viral eradication rates have not been determined. Also yet to be established are the effect of genotype on response, treatment durations, and the effect of various combinations of therapeutic agents. In addition, viral resistance may be problematic with certain of the new candidates for therapy.
This paper presents data from interviews on information practices of people with hepatitis C. The interviews are part of a larger quantitative and qualitative research project exploring the use of print- and internet-based information sources by people with hepatitis C.

Traditional modes of information provision within clinical encounters have been altered by public internet access to resources and information that were previously accessed almost exclusively by health professionals. People with hepatitis C and other chronic illnesses have access to medical databases, as well as drug company, government health department and community-based organisation websites.

While medical literature raises concerns among health professionals about the capacity for people with chronic illness to understand and benefit from treatment-related information primarily designed for a professional audience, little empirical research addresses health consumer practices and perspectives.

People responding to a national online survey of internet use for hepatitis C-related information, were asked to volunteer for a follow-up face-to-face interview. Fifteen people, from NSW, VIC and WA, were interviewed.

The results indicate that the internet is used extensively by some people with hepatitis C to obtain information about treatment options, including developments in treatment research, and to assist in decisions about treatment uptake. Internet mailing lists and other interactive facilities are valued as forums for sharing and discussing research developments, experiences of treatment side effects, and more generally as a source of peer support for people receiving hepatitis C treatment. Information from the internet is frequently used to complement and clarify, rather than to replace, information provided in clinical encounters.

The paper concludes that a more comprehensive knowledge of the range of information sources used by people with hepatitis C, along with a greater understanding of practices associated with these resources, will enable health professionals to provide more meaningful health service delivery.
CONSIDERING TREATMENT FOR HEPATITIS C

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The introduction of pegylated interferon has significantly improved hepatitis C treatment efficacy, but this has not been reflected in treatment rates, which still remain at about 1% of the estimated population of people with hepatitis C. While there is reasonably good understanding of clinical factors which enhance successful treatment, little research has examined the broader social context of treatment to determine the factors which may inhibit or facilitate successful clinical treatment.

A 12-month study of hepatitis C treatment conducted in Victoria used questionnaires and focus group discussions with general practitioners, specialist physicians and those with hepatitis C. Of the 224 participants with hepatitis C in the study (mean time since diagnosis = 7 years; mean time since self-reported infection = 18 years), some were currently receiving treatment (45), some had received treatment in the past (65), and some had never received treatment (n=114). This paper reports on the latter group - those who had never received treatment (51% of total sample of people with hepatitis C).

A range of psychological and social factors that impact on hepatitis C treatment uptake and which impede or assist treatment adherence were explored. Treatment issues were more likely than personal issues to influence people's decisions to proceed to treatment. Effectiveness of treatment, side effects, liver status, relationship with doctor/specialist and associated medical problems such as depression were considered important. Only one personal issue ranked very highly in the decision to take up treatment – having a supportive partner. Factors rated as not important were the need to use contraception, difficulties with drug administration, fear of discrimination and fear of liver biopsy. Forty-four people (39%) had considered and rejected treatment. Important issues in deciding against treatment were side-effects, and the belief that treatment success rate was not good enough. Many respondents were concerned that treatment would impact on work, family and friends. Fifty percent rated fear of liver biopsy as unimportant by those who decided against treatment.

Study results can be used to guide health care practitioners to engage with people's concerns about treatment. These results can be used both to assist people in their decisions to take up treatment as well as to improve the experiences of those currently on treatment.

STRENGTHS-BASED ASSESSMENT, SOCIAL SUPPORT AND RESILIENCE DURING TREATMENT FOR HEPATITIS C INFECTION

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People in treatment for hepatitis C virus (HCV) infection often report side effects from the treatment drugs, like depression which can significantly reduce quality of life. Past research indicates that a factor often found to be associated with, and predictive of good outcomes during negative life events is one's level of social support. Studies indicate an integral role for social support in protecting people, or acting as a buffer against the development of psychiatric disorders like depression, or mediating the negative effects of depression on quality of life across a variety of social and demographic contexts.

Interview data from a recent study conducted in Sydney with twenty people (n=20) in treatment for HCV and six clinicians involved in managing HCV treatment at three major metropolitan liver clinics highlighted a complex dynamic between support from partners and family, and participants' reported experiences of HCV treatment-related psychiatric impacts. People receiving treatment reported that as the treatment experience unfolded and side effects like depression became more salient, support was not always of a nature that they wanted because partners and families frequently misunderstood support needs. Support was understood by nurses and social workers as integral to the management of psychiatric side effects over the prolonged duration of HCV treatment regimens. Clinicians described careful pre-treatment assessment and planning with patients before HCV treatment commenced. Although informal strengths-based assessments of patients occurred, this was usually limited to identifying patients' possible sources of support.

Findings from this study suggest that strengths-based assessments be deployed to help determine whether the nature and quality of support available to people commencing HCV treatment will be appropriate to their needs. Applying a strengths-based, resilience paradigm during pre-treatment interviews can provide an opportunity to uncover what support means to individuals in treatment. Careful ongoing monitoring of the dynamics of support from partner and family during treatment can facilitate resilience and avoid misunderstanding between people in treatment, their caregivers and clinicians.
HOW INDIVIDUALS COPE: A STUDY OF SIDE EFFECTS AND COPING STRATEGIES ADOPTED DURING TREATMENT FOR HEPATITIS C INFECTION

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The increase in the hepatitis C virus (HCV) epidemic in Australia means more people are likely to undergo pegylated interferon and ribavirin treatment. This treatment regimen has recently been put on the $100 prescriptions category making it a more viable and affordable option for people with HCV. However, interferon has long been associated with severe physical and psychiatric side effects sometimes leading to dose reduction or discontinuation. People vary widely in their ability to cope therefore it is important to identify various coping strategies to deal with these side effects so that adherence to long regimens can be improved.

This paper discusses the common side effects and coping strategies noted by six health workers and twenty patients who had undergone HCV treatment in in-depth semi-structured interviews conducted during 2004-2005. A variety of physical side effects were identified including fatigue, insomnia and “cloudiness in the head” some patients described the cumulative impact of treatment in terms of aging. Participants noted a number of limitations to their quality of life such as having difficulty exercising, getting out of bed and managing to complete simple household tasks. Many noted that the side effects prevented them doing things they had done in the past or wanted to do. A number of coping strategies were identified including acquiring support from a variety of sources such as staff at treatment clinics, family, and support groups which were especially important to people who isolated themselves from others or rarely disclosed their HCV status. Other coping strategies included keeping busy (i.e. working, doing enjoyable things, or setting attainable goals). Preparation before commencement of treatment and reorganising one’s life around the side effects experienced were also recommended strategies for coping with treatment.

The findings show a variety of different types of side effects experienced and many different coping strategies used. It is hoped that some of these coping strategies can be generalised to future individuals undergoing treatment to help them adhere to their regimens and in so doing increase their likelihood of being cured.
HEPATITIS C VIRAL LOAD MONITORING PREDICTS DEVELOPMENT OF EARLY SUB-ACUTE LIVER FAILURE POST LIVER TRANSPLANT

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Background Recurrence of hepatitis C (HCV) in the liver allograft following transplantation is universal. Previously we have shown that HCV infection with genotype 4 is a predictor of early graft loss and that extremely high levels of virus are associated with aggressive cholestatic HCV liver injury and graft loss.

Aim To study serum HCV viral load in a large cohort of HCV positive liver transplant recipients and to identify individuals with aggressive cholestatic liver injury and graft loss.

Methods We retrospectively studied liver transplant recipients with HCV infection over an eight year period. Initially, serum HCV viral load was determined as clinically indicated. More recently a protocol was introduced for testing viral load at 1, 3, 6 and 12 months and then yearly. All samples were tested at a dilution of at least 1:100 using the Roche Cobas Amplicor HCV assay.

Results Between January 1997 and June 2005 a total of 120 patients underwent liver transplantation for HCV associated cirrhosis or HCC. 550 serial determinations of HCV load were available on 91 patients with a median follow up of 36 months. Three patients were identified with subacute liver failure due to cholestatic HCV recurrence following transplantation. Importantly, these 3 individuals were the only patients after transplantation with HCV loads of > 10^8 copies per ml. Further, these peak viral loads were observed in 7 serial samples as early as 4 weeks, 6 weeks and 10 weeks post transplant. These 3 individuals developed progressive liver failure due to cholestatic HCV recurrence following transplantation. Importantly, these 3 individuals were the only patients after transplantation with HCV loads of > 10^8 copies per ml. Further, these peak viral loads were observed in 7 serial samples as early as 4 weeks, 6 weeks and 10 weeks post transplant. These 3 individuals developed progressive jaundice, ascites and liver failure within 3 months following transplantation. Two of these 3 patients died at 7 and 9 months whilst one remains in liver failure off immunosuppression and anti-viral therapy at 6 months post transplant.

Conclusion Serial monitoring of viral loads post liver transplant may predict the onset of early aggressive cholestatic HCV liver injury induced allograft failure. The positive predictive value of a viral load > 10^8 copies for HCV related subacute liver failure post transplantation was 100%. Therefore, we believe, frequent HCV load monitoring in the early phase after liver transplant is necessary.

HIGH MOLECULAR WEIGHT ADIPONECTIN CORRELATES WITH INSULIN SENSITIVITY IN PATIENTS WITH HEPATITIS C GENOTYPE 3, BUT NOT GENOTYPE 1 INFECTION

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Prins JB1; Macdonald GA1
1 Centre for Diabetes and Endocrine Research, School of Medicine, The University of Queensland, Princess Alexandra Hospital, Brisbane; Queensland, Australia

Obesity is recognised as a cofactor in the progression of liver injury due to hepatitis C (HCV) infection. Adipokines are cytokines produced by adipocytes. They may be the link between increasing body mass index (BMI) and disease progression in HCV. Adiponectin is an anti-inflammatory adipokine that is present in serum in a range of multimeric forms that appear to have different metabolic functions. Trimeric and hexameric multimers are described as low molecular weight (LMW) adiponectins while 12-, 18- 24-mers and larger are designated high molecular weight (HMW) multimers. The role of the different multimers of adiponectin in HCV has not been established.

We studied 30 male patients with untreated chronic HCV (15 each with genotype 1 and 3) and 12 controls. The 3 groups were matched for age and BMI. Total adiponectin and HMW and LMW adiponectin multimers were measured. The relationships between adiponectin, BMI, insulin sensitivity (using the HOMA score) and liver histology were examined. As expected, genotype 3 infection was associated with greater hepatic steatosis, but there was also greater inflammation than with genotype 1. Patients with genotype 1 were less insulin sensitive than genotype 3, who had similar insulin sensitivity to controls. Insulin resistance was associated with a decrease in total and HMW adiponectin in both HCV and controls, while LMW adiponectin was unchanged. When the effect of genotype was examined, this association was present with genotype 3 but not genotype 1 infection. The proportion of adiponectin present as HMW multimers was associated with hepatic steatosis in genotype 1 but not genotype 3 infection. There was no association between adiponectin multimers and either hepatic inflammation or fibrosis.

These data demonstrate that the relationship between insulin resistance and adiponectin is similar in controls and patients with genotype 3 but not genotype 1 infection. The greater degree of insulin resistance in genotype 1 appears to be a genotype-specific effect.
HBV IN THE ANTENATAL SETTING: THE ROLE OF THE MORE SENSITIVE PCR AMPLIFICATION BASED HBV DNA ASSAY

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1Department of Gastroenterology, SSWAHS, Sydney, NSW, Australia; 2Public Health Unit, Sydney South West Area Health Service (SSWAHS), Sydney, NSW, Australia; 3Department of Microbiology, SSWAHS, Sydney, NSW, Australia; 4Area Hepatitis Team, SSWAHS, Sydney

Hepatitis B virus (HBV) replication varies with time in a host. Clinically significant viraemia is thought to be that above 10,000 genome copies per ml. This level coincides with the lower limit of detection of the standard hybridisation assays. More recently, PCR amplification assays have become available which can detect HBV viraemia down to levels as low as 300 genome copies per ml (Roche Amplicor HBV monitor Assay™). The prevalence and clinical significance of viral loads less than 10,000 copies per ml is unclear, although recent information suggests that the degree of viraemia is prognostically significant.

Screening for HBsAg is routinely performed in the antenatal setting. The clinical and virological characteristics of consecutive HBsAg positive mothers referred from the antenatal service of SSWAHS were determined. We use the PCR based amplification assay Roche Amplicor HBV monitor assay™. Women were divided into three groups based on their HBV DNA result: high-level replication (> 10,000 copies per ml), low-level replication, (detectable but below 10,000 copies per ml) or undetectable. We sought to determine the frequency and clinical significance of low-level viral replication.

204 consecutive HBsAg positive women have been assessed so far. Complete information is available on 184 women. There were 58 HBeAg positive women. Of these, 53 had high, 4 had low and 1 had undetectable DNA. There were 136 HBeAg negative women. Of these, 8 had high, 50 had low and 65 had undetectable HBV DNA. Thus 54 of the 204 had DNA levels that would have been undetectable by the hybridisation assay.

Elevated aminotransferases were present in 11/61 mothers with high levels and 6/54 mothers with low levels of HBV DNA and 1/65 mothers with undetectable HBV DNA. A higher rate of abnormal LFTs in the group with low levels of HBV DNA compared with undetectable DNA suggests that this is a clinically significant level of replication.

We have shown that using the Roche amplitcon HBV DNA monitor assay in HBsAg positive women a significant number with low level viraemia are identified. They are more likely to have abnormal liver function tests than those with undetectable HBV DNA suggesting this is clinically significant.

SURVEILLANCE OF HEPATITIS B VIRUS (HBV) MUTATIONS DURING TENOFOVIR (TDF) TREATMENT IN HIV AND HBV CO-INFECTED INDIVIDUALS

Ariffin N 1, Yuen L 3, Ayres A 3, Colledge D 1, Crowe S 1, Bartholomeusz A 1, Locarnini S 3, Mijch A 1, Lewin SR 1,2, Sasadeusz J 1,2
1The Alfred Hospital, Australia. 3VIDS, Australia. 1VIDRL, Australia. 4The Burnet Institute 5. Monash University

HIV and HBV co-infection is common due to common modes of transmission and occurs in 6.7% of Australian HIV patients. Tenofovir (TDF) has activity against both HIV as well as wild type and Lamivudine (LMV)-resistant HBV and is increasingly a component of HIV therapy. LMV resistance in HBV has mainly been associated with the combined rtL180M + rtM204I mutations. Recently, the rtA194T mutation combined with the LMV-resistant mutations has been associated with TDF resistance. The aim of this study was to identify and characterize mutations associated with the development of HBV TDF +/- LMV resistance while the patients were on TDF therapy.

Forty-six HIV-infected patients chronically infected with HBV and who had received TDF for at least 3 months with an available post treatment sample were identified at three Melbourne tertiary referral centres. The HBV polymerase from 32 of these patients was able to be amplified and sequenced. Seven (21%) samples post-TDF were PCR positive and LMV-resistant mutations were detected in 4 (57%) of these. No other polymerase mutations, including the TDF-resistant mutation at rtA194T, were identified. Of 29 available pre-TDF isolates, 18 (62%) were PCR positive, and 8 (44%) of these had the LMV-resistant mutations. The average time on TDF therapy for the 7 patients with PCR positive post-treatment samples was 13 months (range 3 to 27 months).

Conclusion: TDF resistance in HIV-HBV coinfection is rare. LMV-resistant mutations persist in the presence of TDF and a high percentage of patients have detectable HBV DNA despite the addition of TDF. Ongoing surveillance is critical to detect the future emergence of TDF resistance.
HIV-HBV CO-INFECTION: ANALYSIS OF RESISTANCE MUTATIONS IN THE HEPATITIS B VIRUS POLYMERASE SELECTED DURING THERAPY IN TWO PATIENTS WITH FULMINANT LIVER DISEASE RECEIVING TENOFOVIR

Singh K1,4, Bartholomeusz A1, Ayres A1, Torresi J3, Locarnini S5, Levin SR2,3, Sasadeusz J1,2
1Victoria Infectious Diseases Service, Royal Melbourne Hospital; 2Infectious Diseases unit, Alfred Hospital; 3Monash University; 4Victoria Infectious Diseases Reference Laboratory; 5The University of Melbourne, Melbourne, Australia

Co-infection with HIV and Hepatitis B (HBV) results in more rapid liver disease progression than HBV mono-infection. Both Lamivudine (LMV) and tenofovir (TDF) are used to treat HIV and are also active against HBV. Resistance to LMV is largely mediated by mutations in HBV polymerase at positions rtM204V or I +/- rtL180M. Recently, resistance to TDF and LMV in HBV polymerase at position rtA194T has been described.

We describe two patients co-infected with HIV and HBV who developed decompensated liver disease whilst on treatment with LMV and TDF. Both demonstrated very high levels of HBV DNA. No other cause of liver disease was identified. Both patients had a fatal outcome.

The HBV pol gene from both patients was amplified pre- and post-treatment by PCR and sequenced using specific primers. SeqHepB, an HBV resistance database, was used to analyse mutations.

HBV mutations were detected in one patient following combination LMV and TDF treatment. This patient initially selected a mutation at rtQ215S by the end of the first month. After 8 months of LMV/TDF, he presented with decompensated liver disease and HBV DNA >10E8 IU/mL. A further mutation at rtV214A was detected in the absence of the rtQ215S. Functional analysis showed that rtV214A and rtQ215S demonstrated resistance to LMV (17 and 10 fold increase in resistance respectively) and to Adefovir (13 and 4 fold increase in resistance respectively).

The second patient initially received treatment with LMV, stavudine and nelfinavir. After 3 years of LMV, rtL180M and rtM204V mutations were identified. Following the addition of TDF, HBV DNA declined to undetectable levels (<150,000 copies/mL, Digene assay). After 3 years of LMV/TDF, he presented with decompensated liver disease and HBV DNA >10E8 IU/mL. Full HBV DNA genetic sequencing at the time of hepatic decompensation showed persistence of the LMV mutations but no new mutations in polymerase were identified. Prolonged HIV suppression suggested adherence to medication.

In conclusion, we have demonstrated for the first time that HIV-HBV co-infected patients receiving TDF can develop HBV polymerase mutations and severe HBV flares, which can be fatal. Attention to compliance, dosing and co-administration of nucleos(t)ide analogues for treatment of HBV is needed.

PRESENCE OF SYMPTOMS CLUSTERS AND QUALITY OF LIFE IN PEOPLE LIVING WITH CHRONIC HEPATITIS C INFECTION

Lang CA1, Dunne MP2, Macdonald GA1
1School of Medicine, The University of Queensland, Brisbane, Queensland, Australia; 2School of Public Health, Queensland University of Technology, Brisbane, Queensland, Australia.

Quality of life (QOL) has been shown to be impaired in people living with chronic hepatitis C infection (HCV). Our previous research identified symptoms that impacted on QOL in people living with HCV. Many participants in that research complained of recurrent debilitating episodes with clustering of symptoms. The aim of this research was to characterise these symptom clusters in people living with HCV.

188 HCV antibody positive, treatment-naïve people participated in a cross-sectional interview-based study. 62% (116) reported experiencing clustering of symptoms and were asked about these symptom clusters and the triggers and strategies used to ameliorate these clusters. The questionnaire included measures of health-related QOL Short Form-36 (SF-36) and demographic variables. Hierarchical Cluster Analysis was used to cluster the participants according to their episodic symptoms and assign cluster membership.

A symptom cluster was defined as more than 3 symptoms, but less than 19.

These criteria were met by 96 patients. Their clusters generally occurred with no apparent pattern, were present throughout the day, lasting hours to days. The final cluster solution identified 5 coherent symptom clusters. In Cluster 1 the symptoms primarily experienced were irritability, mental tiredness and physical tiredness; Cluster 2, abdominal pain and nausea; Cluster 3, pain, sleep problems and physical tiredness; Cluster 4 was a blend of gastrointestinal and neuropsychiatric symptoms; while the final cluster was a migraine-related group of symptoms. Participants identified cluster triggers including food (27%), pain (11%), stress (47%), mood state (20%) and sleep problems (19%). Triggers varied according to clusters with people in Cluster 1 and 2 more likely to use individualized strategies to relieve symptoms (p=0.027). Sleep (night time or day naps) provided relief for all clusters. Although no significant association was shown between cluster membership and HRQOL (SF-36 subscales and domains), there was a moderate difference in mean scores across clusters for Physical Functioning, Vitality and the summary Physical domain.

These results confirm that symptoms occur in temporal clusters that are thematically related. They occur with unpredictable onset and variable duration and have identifiable triggers. A range of approaches ameliorate these symptom clusters.
Symposium – Speaking from Experience (1.30pm – 3.00pm)

DISCRIMINATION AND STIGMA

Morrison, MA
Alberton, South Australia, Australia

Looking back on my behaviour I have to admit that I, myself, have been guilty of discrimination in relation to Hepatitis C (Hep C). When first diagnosed I wanted to distance myself from the condition, especially how the majority of the population have contracted Hep C. I made a point of stating that I had never used intravenous drugs and that I had likely contracted it from a partner who had (through toothbrush & razor sharing, not needle sharing), like that made me more worthy of treatment in my mind.

What I will cover in my presentation will include:

• My own discrimination and the stigma I put upon myself
• My experience of health professionals and their own bias toward Hep C
• The varying reactions to my disclosure and how it led to "hide" my condition
• The lack of any real public knowledge of Hep C and how that fuels the stigma
• Very public examples of misinformation and it's impact on me (i.e.: the "Bewitched" Movie and "House" TV show & explaining that to family and friends).

Through my current involvement with the Hepatitis C Council of South Australia (HCCSA) I have also been privy to the experiences of others, particularly in Rural South Australia and would like to share those stories as part of my presentation. I feel that the rural experience of stigma and discrimination is far more insidious, particularly in the interactions with health professionals, that it is worthy of discussion.

HEP C AND ME

Gill P
Yokine WA

I still do not know when it was that I contracted hepatitis C. I guess it doesn't really matter that much. I found out I had the virus in 1995, quite a 'busy' year for me. I found out I had the virus as part of a research project that was essentially a needs assessment for an NSEP. The man that told me the results put it like this; "The good news is you don't have HIV, but you do have hep C! That didn't mean a lot to me at the time and I continued to do whatever it was I was doing. It was only some years later that I visited a doctor that knew a bit about hep C and she gave me some info and made preliminary moves to get me to have treatment. That didn't eventuate and I have been living with hep C, learning about hep C and working with other people at risk of hep C ever since then (1998).

The topics I wish to discuss are as following.

• No one tries to get hep C. It has only been in the last 17 years that we have known how to protect ourselves from it. No one is more 'innocent' than anyone else.
• I am still using I.V. drugs.
• As I and many of my peers get older we are becoming more symptomatic and how this affects me.
• I am a parent; I am working and am looking after a sick partner. I would like to talk about the level of support available. A lot of drug users and their partners have hep C. While many people look after someone with a chronic illness it is unusual that two people have a chronic illness.
• I would like to discuss the 'invisibility' of hep C and the affect it has when seeking support from work, extended family and medical professionals.

I feel that these subjects may be of most value to speak about in such a forum and I hope that these topics compliment the other speakers in providing the conference with a consistent, yet diverse and informative perspective on being hepatitis C positive.
A PATIENT’S PERSPECTIVE ON TREATMENT & THE DECISION PROCESS

O’Reilly M
Haemophilia Foundation Australia

I was diagnosed as Hepatitis C positive in 1990 following an annual haemophilia check up at a time when information about the virus was very scarce. I didn’t really become aware of the severity until I started having annual checkups of my ALT levels in 1994, which remained around the mid thirties consistently until 2001. This virtually normal level precluded me from any treatment up to this point.

In December 2001 when my ALT levels quite unexpectedly lifted to approximately 550 my medical specialist recommended that I considered having treatment. I then needed to consider what treatment involved, how it would affect me, my family and my work. After weighing these things up against the possibilities of treatment success we concluded the long term benefits seemed to far outweigh the negatives.

I commenced treatment in June 2002 and experienced slight flu like symptoms but no discernable mood changes. However in August I experienced a rapid rise in my uric acid levels which led to hospitalisation and the ultimate suspension of my hep C treatment. After further investigation by several specialists I later commenced pegylated interferon and ribavirin. I experienced no side affects and completed treatment in August 2003. After PCR tests over nine months I was confirmed PCR negative in June 2004.

The decision to undertake treatment for hepatitis C varies according to each individual’s case, and everyone’s experience of treatment will vary, but for me it was simple – a matter of six months of some possible side effects versus the rest of my life.
‘I’VE GOT HEP C AND YOU’RE SUGGESTING I BREAST-FEED – NO WAY JOSE’

Poeder F

I cried one day because I bled all over a play-tent I was helping to erect for some friends of one of my young daughter’s. Last week in discussion with a group of users (some positive and others not) I heard a mother say that if she were hep C positive she’d give up her kids, it wouldn’t be worth the risk of having them around and of them being potentially infected – she suffers from fits occasionally and she’s concerned about the chance of hurting herself during one of these episodes. While others totally agreed with her thinking, another person said they’d kill themselves if they infected one of their kids. Splashing bleach over a cut made through opening a tin can followed by 5 metres of bandaging. Toothbrushes kept so high it takes a step-ladder to reach them - even though there’s an even greater risk of falling and breaking numerous bones! Excessive? Over the top? Irrational? When other mothers fall and cut themselves their kids are allowed to offer comfort and help dress the wound (there’s a little nurse in all of them) – not those of the hepatitis C positive – (naturally and understandably) neurotic mother.

This presentation looks at hep C and having a family. Issues in the home such as; household transmission fears, worrying about kids getting hep C during pregnancy, disclosure and discrimination issues and talking to kids about hepatitis C.
## POSTERS LISTING

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increasing access

MONDAY 20 – WEDNESDAY 22 FEBRUARY 2006
THE SYDNEY MASONIC CENTRE, SYDNEY, AUSTRALIA

POSTER ABSTRACTS
Northern Sydney Health provides a range of blood borne virus health education and health promotion activities targeting specific population groups. These services are provided by a number of agencies, primarily HepNet, RUSH and the Liver Clinic. This abstract describes an education intervention developed by the HepNet, Liver Clinic and RUSH which targets clients of Drug and Alcohol services. Drug and Alcohol services have a significant number of Hepatitis C positive clients and provide what amounts to a captive audience for educational interventions. Over a period of 8 years, the local needle and syringe programme (now called RUSH) have been running a weekly BBV group for detox in-patients. This group is part of a health education approach which supports individual clients in their detox. One of the features of this inter-service arrangement is the degree of trust shown towards the RUSH team. The presence of a harm reduction based educational programme within a 12 step abstinence based detox is fairly unique and is seen as a valuable strength. Following a number of focus groups with staff of the Herbert St Detox, and discussions with group facilitators from RUSH, an opportunity was identified to review the weekly BBV group. While this group had been in place for a number of years, the content area had recently expanded to include Hepatitis C treatment and care issues. In addition, the group had been facilitated by a small number of RUSH staff. With a broadening of the facilitator group to include new staff, it was felt that there was a need to review the content and delivery of the group.
**P3**

**THE EFFECT OF ACUPUNCTURE ON PEOPLE WHO ARE HEPATITIS C ANTIBODY POSITIVE: THE STUDY PROTOCOL OF AN ONGOING RANDOMISED CONTROLLED PILOT STUDY**

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The use of Complementary and Alternative Medicine (CAM) in Australia has been steadily increasing. This has resulted in many people with Hepatitis C consulting CAM practitioners in the hope of alleviating some of the debilitating symptoms associated with this viral infection. In the mid 1990s, many hepatitis C positive residents in a Sydney alcohol and drug rehabilitation centre who were also receiving auricular (ear) acupuncture as part of their rehabilitation program, verbally reported decreases in their Alanine Aminotransferase (ALT) levels after approximately 16 acupuncture treatments (3 months). To investigate these anecdotal claims, a study was initiated at the University of Technology, Sydney to evaluate whether acupuncture has an effect on people with Hepatitis C.

The study is a randomised controlled single site study with blind, independent analysis. Thirty participants with specific eligibility criteria are currently being recruited and randomised into two groups. Participants will be randomly allocated to receive either traditional Chinese acupuncture or sham acupuncture (shallow needling at nonacupoint sites). Those participants allocated to receive traditional Chinese acupuncture will be further categorised according to the framework of Traditional Chinese acupuncture. Twenty four treatments will be administered over a twelve week period. The main outcome measure will be change in ALT levels measured by an independent laboratory. Secondary outcome measures will be changes in viral load and the Hepatitis Quality of Life Questionnaire (HQLQ). A credibility questionnaire will be undertaken at week 2, 6 and 12 of the program to identify if participants have detected which group they were allocated. A follow up evaluation (ALT, HQLQ) will be conducted six months after completion of the study.

The discussion will take into account the limitations of the study together with considerations such as standardisation of symptoms associated with each Chinese medicine diagnostic category, development of an acupuncture treatment protocol and choice of a control intervention. This study attempts to apply sufficiently rigorous methodology to be accepted as evidence based medical research while addressing the diagnosis and specific treatments within the theoretical framework of Chinese acupuncture practice.

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**P4**

**INNOVATIVE AND ECONOMICAL METHODS TO RESTORE AESTHETICS IN A PATIENT WITH HEPATITIS C AND CHRONIC DENTAL PROBLEMS**

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Patients with Hepatitis C experience widespread dental problems that impact on their quality of life. Replacement of missing anterior teeth is important to restore aesthetics and to maintain their social wellbeing. This case report involves immediate replacement of a tooth extracted due to a longstanding periodontal infection and tooth/root fracture. The fractured segment was extracted and the crown reshaped. It was then replaced using bondable reinforcement ribbon (Ribbond), and composite resin. The space from the missing tooth was filled and the patient’s appearance immediately restored by this cost effective procedure. Additional benefits of this treatment were that a removable denture was not required and more complex expensive treatment is still an option, if required by the patient at a later date.
P5
OUTCOMES OF A PRIMARY HEALTH CARE PROGRAMME FOR PEOPLE WITH HEPATITIS C

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C-CLEARLY was a community-based programme offering an holistic approach to health care for people with, or at risk of acquiring, hepatitis C virus (HCV). It was based in Adelaide, South Australia and ran from 2002 to 2004.

On enrolment, participants completed a survey including the sf36, Zung Depression Scale, Prime-MD diagnostic questionnaire for psychiatric disorders and a symptoms list. Participants were reassessed after a minimum of 12 months. 207 participants were initially enrolled. When the programme concluded, 80 participants had been reviewed at least one year after enrolment to measure changes in their health.

The programme provided unlimited free education and support sessions with a medically-qualified project officer. Personally targeted information was provided for the participant, partner and family. Plans for current and future management of hepatitis C were devised. Advocacy letters, particularly for housing, were written. Participants were offered free access to a Dietitian and Psychologists, and referral to specialised counselling services and liver clinics.

71 of 80 reviewed were HCV antibody positive. 9 of 38 current injecting drug users at enrolment had stopped injecting at review.

At enrolment, 52 participants had a current diagnosable Major Depressive Episode. This decreased to 36 at review. Mean Zung Depression score improved significantly from 55 to 49 (p<0.0001 in paired analysis). The number of participants with Generalised Anxiety Disorder fell from 16 to 2, Panic Disorder from 18 to 10, and Dysthymic Disorder from 27 to 21.

Self-rated health status improved across all sf36 domains with significant rises in mean Mental Health, General health, Vitality, and -Role Emotional scores domains (p<0.05).

This programme was associated with significant measurable improvements in mental health and social function. These changes would improve the quality of life of people with hepatitis C and could decrease mental health complications during treatment.

P6
HEPATITIS C OUTREACH SERVICE WITHIN A COMMUNITY BASED OPIOID PHARMACOTHERAPY CLINIC

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Hepatitis C is associated with significant morbidity and mortality. Antiviral therapy is associated with sustained viral response in 40-80% depending on genotype and treatment adherence. Approximately 75% of patients enrolled in pharmacotherapy programs are HCV antibody positive yet fewer than 5% receive antiviral treatment. Barriers to antiviral treatment in this population include comorbid substance misuse, mental health problems, limited motivation, difficulty accessing hospital based clinics and discrimination (Watson et al submitted). In 2004 an HCV clinic was established within an existing pharmacotherapy clinic for a two year trial. Initially, one private clinic with 350 clients agreed to participate by promoting the service and providing administrative support and space. The present model involves a monthly clinic with referral to the hospital for liver biopsy, mental health assessment and HCV treatment. The clinic started in late 2004 and 74 consultations have been provided to 39 patients. An assertive approach is adopted to follow-up with reminders from dosing staff and by telephone or SMS. 24 of 32 (75%) have attended follow-up to date. Biopsy appointments were kept in 5/6 (83%). Two patients have commenced treatment (6 and 10 months after first consultation; both with cirrhosis), 1 late hepatocellular carcinoma has been detected, 2 others with persistently raised aFP are under investigation, and 4 are awaiting liver biopsy. This outreach model appears feasible for clinical assessment and has been readily accepted by clients and clinic staff. Early experience has identified advanced liver disease. There remains reluctance to travel to hospital and this may be less often required once specialist nursing treatment support within the clinic is available and the S-100 requirement for liver biopsy is relaxed.
This exciting new project, “Fits Plus,” is a youth focused project aiming to educate young people at risk of hepatitis C through injecting drug use about the importance of not sharing or reusing other injecting equipment (besides needles and syringes). What we’re planning to do, will also raise awareness of the hepatitis C risks associated with injecting others and being injected by others, injecting in groups and provide some general blood awareness tips.

The Australian Injecting and Illicit Drug Users League (AIVL) has worked with a reference group made up of representatives from AIVL’s member organisations around Australia, which are peer based drug user organisations, to come up with a suggested approach. In addition to this involvement, AIVL has organised a series of consultations in conjunction with our member organisations and various local youth services to ask young injectors what they wanted.

It was a clear that our member organisations weren’t seeing large numbers of young injectors, so we realised we needed to do something that enabled us to get the messages about hepatitis C out into various publications and on radio stations that young people are listening to and reading. At the same time we wanted to promote the services available at AIVL’s member organisations and connect them with the range of resources available to help keep them safe and hepatitis C free.

Therefore we are looking to develop a generic article on hepatitis C, which after going through our normal approval processes via the Department of Health and Ageing, Hepatitis C Section, our member organisations can add their own local information about what their service has to offer and we’re hoping to get these articles published in local free street magazines. In addition to this we’re also planning to get approved a script for a slot on community radio to talk about hepatitis C and the local member organisation. Some of AIVL’s member organisations already have regular radio programs that they run, however in the other areas we will work with the local community radio stations to get air time for this important issue.

In Australia, approximately 7% of individuals infected with human immunodeficiency virus (HIV) are co-infected with hepatitis B virus (HBV). In the management of HBV mono-infection, liver biopsy and alanine amino transferase (ALT) levels are used routinely to inform disease stage and the initiation of antiviral therapy. We aimed to characterise the indication for and utilisation of liver biopsy in individuals with HIV-HBV co-infection in a large tertiary referral centre.

Between 1996 and 2005, 1954 HIV-infected individuals were tested for hepatitis B surface antigen (HBsAg). 202 individuals (10%) had detectable HBsAg and 19 had liver biopsies (9%). Over a similar time period, in 520 HBV mono-infected individuals, 295 liver biopsies were performed (57%).

At the time of liver biopsy in the HIV-HBV co-infected individuals, the median duration of HIV infection and AIDS was 10 and 4 years respectively and the median (range) CD4 and HIV viral load was 265 cells/µl (6-1177) and 4.1 log copies/ml (<1.7–5.36). Thirteen patients (68%) were on antiretroviral therapy (ART, 3 or more anti-HIV drugs) at the time of biopsy, which included lamivudine (LMV) alone (n=11; median duration=34 months) or LMV and tenofovir (n=2; median duration TDF=2 months).

With respect to HBV activity, all patients had an elevated ALT (median (range) = 101 U/L (46-398)) and detectable HBV DNA (median (range))=7.3 (2.6-8.5) log IU/ml. The HBV was most commonly genotype A, and HBcAg was detected in 63%. Indications for liver biopsy were diagnostic (n=4), assessment during a flare (n=7), assessment prior to therapy (n=3) and suspicion of cirrhosis (n=3). Findings at biopsy included advanced fibrosis (n=8), moderate fibrosis (n=3), mild fibrosis (n=6), hepatocellular carcinoma (HCC, n=1) and non-Hodgkin’s lymphoma (n=1). Seven patients (37%) have died, at a median (range) time after biopsy of 2 (1-31) months.

Cause of death included lymphoma (n=2), toxoplasmosis (n=1), sepsis (n=1), HCC (n=1) and liver failure (n=2).

In HIV-HBV co-infected individuals liver biopsy was performed infrequently, late in the course of HIV and HBV disease and uncommonly performed prior to commencing HBV-active ART. The utilisation of liver biopsy differs significantly in the management of HBV-infected and HBV-HIV co-infected individuals.
P9
‘ONE FOOT IN THE DOOR’ – THE INVOLVEMENT OF PEER WORKERS IN REDUCING BARRIERS AND INCREASING ACCESS TO HCV TREATMENT FOR INJECTING DRUG USERS

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Few injecting drug users access anti-viral treatment for Hepatitis C, despite the high prevalence and incidence of HCV among this group in Australia. Until recently (2001) current drug users were excluded from anti-viral HCV treatment. Although injecting drug use is no longer grounds for exclusion, the situation remains largely unchanged and drug users continue to experience significant barriers to HCV treatment. Innovative approaches and models of care are required to overcome current impediments to HCV treatment.

In August 2005, Turning Point Alcohol and Drug Centre, in conjunction with a range of partners including St Vincent’s Hospital and VIVAIDS (the Victorian State Drug Users’ Organisation) implemented the ‘Healthy Liver Clinic’ to complement its existing clinical services. The primary aim of the newly established liver clinic is to encourage drug users to consider the uptake of HCV treatment as a viable option. In order to achieve this aim, the ‘Healthy Liver Clinic’ provides a ‘one stop shop’ and combines access to drug treatment with access to treatment for Hepatitis C.

A key feature of the ‘Healthy Liver Clinic’ is the involvement of VIVAIDS and the employment of a ‘peer’ worker as a member of the clinic team. The peer worker’s role is to offer ongoing support and information during all stages of treatment. The peer worker, who has experience in peer-based HCV research and education, is also based in the Needle Syringe Program (NSP) at Turning Point. The NSP provides the initial point of contact for many clients and an informal context in which the issue of Hepatitis C is more easily discussed. Many clients have minimal knowledge of available treatment options and are encouraged to learn of the existence of HCV treatment and the high percentage of clients who demonstrate a sustained virological response (SVR) upon completion of combination therapy.

The paper discusses The Healthy Liver Clinic model and in particular the ‘peer’ factor and the involvement of staff, who identify as members of the target group (i.e. drug users). The paper focuses on the impact and implications of the involvement of peer workers in reducing barriers to HCV treatment.

P10
GENERAL PRACTITIONERS AND HEPATITIS C: RESULTS OF THE QUEENSLAND STATEWIDE SURVEY

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5 Kobi House, Toowoomba Base Hospital, Toowoomba, Queensland, Australia
6 School of Medicine, The University of Queensland, Rockhampton, Queensland, Australia
7 Tweed Heads Family Practice, Tweed Heads, New South Wales, Australia
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Brisbane, Queensland, Australia
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In 2003 – 2004 the HIV & HCV Education Projects of the School of Medicine, The University of Queensland, surveyed all medical practitioners currently registered in Queensland to assess their knowledge about viral hepatitis and their current methods of acquiring information on hepatitis C (HCV). The two page survey was mailed out (11 332 surveys) by the Medical Board of Queensland with replies returned through a reply paid envelope (31 186 surveys, 28.5%). 1114 responses were from General Practitioners (GPs) who were practicing and resided in Queensland at the time of the survey, with 709 (63%) from Brisbane and the Gold or Sunshine Coasts. Most responding GPs (711, 64%) had a small case load of 1 to 5 patients that they know to have HCV, 135 (12.1%) looked after 6 to 10 patients and few either have no known caseload (153, 14%) or >10 patients (117, 11%). Nine questions were asked to assess knowledge about viral hepatitis; 5 related to HCV; 3 to hepatitis B and one to hepatitis A. The mean number of correct answers was 5.69 (SD=1.51) and GPs tended to answer the non-HCV questions more accurately (mean score of 3.06 ± 0.77 from 4 questions) than of HCV questions (mean score of 2.64 ± 1.16 from 5 questions). 79% of GPs recognised that household contact was not a significant risk factor for HCV transmission; however, only 42% felt that HCV could be eradicated by treatment and 33% considered HCV a sexually transmitted infection. The main determinants of appropriate responses to HCV-related questions were doctor age, caseload of patients with HCV and attendance at courses run by the Hepatitis C Education Project. Only doctor age was associated with performance on non-HCV items. The main sources of information about HCV for respondents were Journals and Textbooks (95%), Specialists (68%), and work colleagues and meetings (54% each). 88% indicated they would like to learn about HCV from Fact sheets, while 79% indicated...
face-to-face CME activity, 57% small group case-based activities and 56% from videos or CDs. These data provide an overview of the GPs understanding of viral hepatitis and provide insight into strategies to disseminate information about hepatitis C.

P11
SLEEP QUALITY IN PEOPLE LIVING WITH CHRONIC HEPATITIS C INFECTION AND THE RELATIONSHIP WITH HEALTH-RELATED QUALITY OF LIFE MEASURED BY THE SHORT FORM-36 (SF-36)

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Health-related Quality of life (HRQOL) has been shown to be significantly impaired in people living with chronic hepatitis C infection (HCV). The aim of this research was to describe the contribution of disrupted sleep to HRQOL in people living with chronic HCV.

188 HCV antibody positive, treatment-naïve people participated in a cross-sectional interview-based study (125 men; mean age 42±10 years). HRQOL was assessed using the Short Form-36 (SF-36) subscales of Physical Functioning (PF), Role-Physical limitations (RP), Body Pain (BP), General health (GH), Vitality (V), Social Functioning (SF), Role-Emotional limitation(RE), Mental Health (MH), and summary domains of Physical (PCS) and Mental (MCS). Habitual sleep behaviors and sleep quality were assessed with a brief inventory.

Sleep problems were reported by 65% of the participants, and these problems were rated as more severe than other HCV symptoms (median 8, min, max., 1, 10). Bivariate analysis demonstrated that female gender and age under 40 years were independent predictors of increased sleep duration over a 24 hour period (p=0.009, p=0.009). Education less than 12 years was an independent predictor of increased sleep onset latency (p=0.009) and decreased sleep efficiency (p=0.005). Participants who were not earning a wage were more likely to wake during the night and stay awake (p<0.001), and to also have more naps each week than wage earners (p=0.006).

Increased sleep onset latency, and increased arousals during the night, were both associated with significantly poorer SF-36 scores on all subscales with moderate to large effect sizes (p<0.001). Sleep efficiency had a positive association with the RP, GH, RE, MH and MCS subscale scores (r>0.3, p<.001). More complex associations were found between daytime naps and SF-36 scores. This relationship was non-linear, with 5-6 naps each week associated with high SF-36 scores, but 7 or more naps each week associated with lower scores in all subscales (p<0.001).

These results suggest that poor sleep quality is a significant contributor to HRQOL in patients with HCV, and that gender, income source and education each contribute to sleep quality.
VERTICAL TRANSMISSION OF HBV INFECTION; DOES IT OCCUR IN AUSTRALIA?

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Hepatitis B virus (HBV) vaccination has reduced the prevalence of chronic infection in vaccinated populations. The efficacy of the vaccine is reportedly above 95%. Disturbingly however, in the setting of babies born to mothers with high viral loads, there are reports of significant transmission rates, despite vaccination.

In SSWAHS, HBsAg positive women detected in the context of antenatal screening are routinely referred to the hepatology service. The virological and clinical characteristics of the women were determined. Babies received HBIG within 12 hours of birth and HBV vaccine schedule 0,2,4 and 6 months after birth. We sought to prospectively determine the rates of transmission of HBV infection in those babies born to all HBV DNA positive mothers (Roche Amplicor HBV monitor assay; lower limit of detection, 300 genome copies per ml) when the babies reached 9 months of age. We aimed to test all babies for HBsAg, anti-HBc (IgG), and anti-HBs.

202 consecutive women HBsAg positive women have been assessed so far. 115 have detectable HBV DNA (above 300 genome copies per ml) when the babies reached 9 months of age. We aimed to test all babies for HBsAg, anti-HBc (IgG), and anti-HBs.

Blood samples have been collected from 42 babies that have reached the age of 9 months. For some babies, sufficient serum could not be obtained for all the tests.

41 of 41 tested were sAg negative, that is there were no cases of chronic infection. 39 of 39 tested were anti-HBs positive that is, immunity was achieved in all. Interestingly, 18 of 32 tested were anti-HBc negative and 16 were anti-HBc positive.

In our setting, HBIG and HBV vaccine is effective in protecting babies from chronic HBV infection. The high rate of anti-HBc positivity may be due to persistence of maternal antibody. This needs further investigation.
Through 2004 – 2005 the HIV & HCV Education Projects of the School of Medicine, The University of Queensland was funded by Queensland Health to conduct 22 education activities in hepatitis C (HCV) across Queensland. These courses were for General Practitioners, Health Care Workers and Mental Health Care Workers. At each of these courses participants were asked to complete a pre- and post- course survey of their knowledge about HCV with 4 questions. Participants completed the survey at the end of the introduction of the day’s program (approx. 10 minutes). The questions were repeated in the evaluation document participants were asked to complete at the end of the day. The results are shown in the Table:

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<td>107(63)**</td>
<td>82</td>
<td>30(36)</td>
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<td>42(66)**</td>
<td>60</td>
<td>51(85)</td>
<td>53</td>
<td>51(96)</td>
<td>212</td>
<td>151(71)</td>
<td>179</td>
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GP had better baseline knowledge than other health care workers who attended the course, but all groups showed similar improvements following course attendance. These data provide data about the baseline knowledge of HCV in participants who enrol in courses run by the HCV Education Project and demonstrate that these courses lead to an improved understanding of HCV in the short term at least.

* p<0.05, ** p<0.01, χ²
P14
QUEENSLAND FRAMEWORK FOR THE TREATMENT AND MANAGEMENT OF HEPATITIS C

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People with hepatitis C (HCV) access a diverse range of specialist, community and primary health care services in Queensland where an opportunity for treatment and management intervention exists eg. mental health and alcohol and drug services. However, a range of issues have been identified that may affect the delivery of treatment and management in these settings including the lack of an agreed statewide model of best practice (Queensland Framework) across the continuum of care from diagnosis to advanced disease.

In Queensland, there are currently a range of innovative local formal and informal models of care for treatment and management of hepatitis C delivered from a range of settings including sexual health services, general practice, public hospital and non-government organisations. These models attempt to address the needs of this client group within existing service delivery capacity and geographical limitations.

The Queensland HIV, Hepatitis C and Sexually Transmissible Infections Strategy 2005-2011 identifies a number of actions that aim to improve statewide delivery of best practice treatment and management services. To facilitate consultation on this issue, a discussion paper was developed to enable key stakeholders an opportunity to ensure that all relevant issues had been considered and to influence the development of the Queensland Framework for the treatment and management of HCV.

Following this consultation, a Queensland Hepatitis C Forum was held in February 2006 with invited key stakeholders to:

1. Discuss the key elements of and gain consensus on a Queensland Framework for hepatitis C treatment and management.
2. Identify what has already been achieved to address the identified issues.
3. Identify other innovative strategies and solutions to address the issues including identifying existing resources, gaps in resources and the risk of not responding.

This presentation will discuss the outcomes of this statewide consultation, implications for future service delivery in Queensland and issues of relevance at a national level.

P15
DIFFICULT VENOUS ACCESS IN PATIENTS WITH HEPATITIS C: INCREASING ACCESS TO HCV TREATMENT AND CARE

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The AW Morrow GE and Liver Centre provides services to patients requiring management and treatment of chronic hepatitis C. All patients undergoing antiviral therapy are managed by hepatitis C Clinical Nurse Consultants. Frequent clinic visits and blood testing are required to monitor treatment progress.

The most common mode of transmission of HCV in Australia is from injection drug use (IDU). A background of significant IDU has resulted in difficult venous access in a proportion of patients requiring antiviral treatment of chronic HCV. Poor venous access is compounded when the patient is required to fast for specific blood tests or when large volumes (up to 60mls) of blood are required.

In a recent survey of 39 patients (84% either ex or current IDUs) from the RPAH Liver Clinics and Pharmacotherapy Service, 48% reported difficulty having blood collected from conventional sites, 46% were reluctant to have blood collected and 7% had been denied access to medical services or treatment because of venepuncture difficulties.

In response to the need to enhance access to treatment for patients with difficult venous access, a protocol was devised to utilise the External Jugular Vein (EJV) for blood collection. This protocol involves referring the patient to an anaesthetist for assessment of the EJV for venepuncture, and if suitable to use, the CNCs perform all ongoing venepuncture from this site.

In the period October 2002 to October 2005 the GE and Liver Centre referred 24 patients (91% ex IDUs) for EJV venepuncture assessment. 18 (75%) of these patients were suitable for EJV puncture, 6 proceeded to antiviral therapy, 5 are being worked up for therapy, and 7 have ongoing blood monitoring. One patient has proceeded to liver transplantation following nonresponse to antiviral therapy and continues to have EJV venepuncture. 6 patients with advanced liver disease have cannulas inserted in the EJV for contrast CT scans for HCC surveillance. No complications have resulted from either procedure and all patients report high levels of satisfaction with the technique.

We have demonstrated that EJV puncture and cannulation are useful techniques for patients with difficult venous access and can have a major impact on access to complex procedures such as antiviral therapy, contrast imaging and liver transplantation.
P16
REVERSAL OF END STAGE LIVER DISEASE IN PATIENTS WITH HIV/HBV-RELATED CIRRHOSIS TREATED WITH TENOFOVIR
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Coinfection with HIV and HBV hastens progression to end stage liver disease. Tenofovir (TDF) is now widely used in HIV/HBV coinfected patients with and without lamivudine (LMV) resistance. The safety and efficacy of tenofovir in cirrhotic patients however has not been specifically reported.

HIV/HBV coinfected cirrhotic patients treated with TDF were reviewed. Hepatic function, Child-Pugh status, HBV viral load and HBeAg were recorded pre /post TDF start.

7 HIV/HBV cirrhotic patients were identified. All were Caucasian males, mean age 47 yrs, mean HIV duration 18 yrs, median nadir CD4 count 70 cells/mm^3. All patients were LMV experienced and LMV resistance was documented in 60% of those on LMV at TDF addition. Cirrhosis diagnosis was made by liver biopsy in 4 and clinically in 3. 3 patients had Childs A cirrhosis, 3 Childs B and 1 Childs C cirrhosis. HBeAg status was positive in 4/7, 1 patient had a precore mutant and 2 were eAg negative. Median HBV VL at TDF start was 6.23 x 10^7 copies/ml (range 2.62 x 10^2 – 1.16 x 10^10 c/ml).

Median duration of TDF use was 27 months (range 7 – 46m). TDF was well tolerated and no patient developed renal impairment. 5/7 suppressed HBV VL to undetectable (< 35 c/ml in 4), 1 suppressed to 182c/ml and 1 patient (7 m TDF exposure only) suppressed HBV from 5.82 x 10^8 c/ml to 1.19 x 10^4 c/ml. 3/4 patients lost eAg (2 seroconversions).

All 3 patients with Childs A cirrhosis remained stable with no hepatic decompensation. In the 4 patients with Childs B/C cirrhosis median albumin increased by 10 g/L, and median PT improved by 4 secs. In 2 patients ascites and/or encephalopathy resolved and all 7 patients were classified Childs-Pugh A by end of follow-up.

In conclusion, TDF is well tolerated in HIV/HBV cirrhosis and not only results in significant HBV viral suppression but may also result in eAg loss/seroconversion. Improvements in hepatic function and reversal of Child-Pugh status suggest that TDF may ultimately alter the natural history of liver disease in HIV/HBV coinfected individuals.

P17
TOLERABILITY AND SAFETY OF ANTIVIRAL THERAPY FOR HEPATITIS C VIRUS (HCV) INFECTION IN THE OLDER PERSON
Mellor KL, Bell S, Watson K, Shaw R, Chen R, Thompson A, Iser D, Desmond P. Gastroenterology Department, St. Vincent's Hospital, Melbourne, Australia.

Improvements in the efficacy of antiviral therapy for HCV mean that more patients are considering therapy, including those over 60. There is limited data regarding the safety and efficacy of antiviral therapy in the older person, as this population was not well represented in clinical trials.

The aim of this study was to assess the tolerability, safety and efficacy of antiviral therapy in the over 60 population. Demographic data, risk factors for HCV acquisition, genotype, histology and treatment outcome including side effect profile were retrospectively collected on the St Vincent's Hospital hepatitis C database. Patients over 60 years of age were compared with data collected for all treatment patients over the last 5 years.

623 patients were seen, with 56 over the age of 60. 62% received antiviral therapy (64% receiving pegylated interferon and ribavirin). In the over 60 cohort, 80% were not born in Australia, and 61% had unknown mode of acquisition, 36% acquired HCV through blood transfusions, and interestingly interavenous drug use as a risk factor was not seen in this cohort. 65% were infected with genotype 1 and over 2/3rds required treatment for 48 week. Advanced fibrosis (Metavir scores of F3 and F4) was seen in 63% and more than 50% developed cytopenia, resulting in 88% requiring dose reductions and 22% ceased treatment early due to side effects. Only 34% achieved their intended treatment length. Despite suboptimal treatment, 41% achieved an SVR.

These findings indicated that treatment is poorly tolerated, most likely due to the high proportion of advanced liver disease and significant dose reductions secondary to cytopenia. This resulted in a marked reduction in the median treatment length. However despite this, over 40% achieved an SVR, which indicates that treatment is worth considering in the over 60 year olds.
HEP573 STUDY OF ALTERNATIVE THERAPY FOR CHRONIC HEPATITIS C

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Hepatitis C (HCV) is a common cause of significant acute and chronic liver disease worldwide. Of the 200,000 Australians who have hepatitis C, only 10% have been treated with antiviral therapies. Some patients are not eligible, able or prepared to tolerate the side effects associated with antiviral therapy and choose not to undergo therapy. Alternative therapies are being used by an increasing number of patients to control symptoms and to modify inflammation in HCV. We report on progress of the HEP573 Study, a randomised, placebo controlled study of treatment with Silymarin alone, Silymarin with a number of other alternative medications and placebo in patients with chronic HCV infection. The study is based in 3 teaching hospitals in Sydney and Newcastle, NSW, Australia. (John Hunter Hospital, Newcastle, Westmead Hospital Sydney and Royal Prince Alfred Hospital, Sydney.)

Clinical details recorded include: source of infection, duration of infection, history of previous treatments, other medical illnesses including other liver diseases and alcohol and other drug usage previously and at the present. Hepatitis C genotype and viral load are measured at the initial visit and viral load is also measured while on therapy at 6 months and 6 months post treatment. These data will be used in the analysis of the response to therapy. Patients are treated for 6 months and will then be followed for a further 6 months monitoring the effect of treatment and cessation of treatment on disease progression and on a number of markers of liver injury including fibrosis markers – hyaluronic acid, haptoglobin, alpha-2 macroglobulin and markers of oxidative stress. The latter are being measured to determine a possible mechanism of action of the products included in the active therapies.

Liver biopsy has not been undertaken in the majority of patients, as ethics committee approval was unlikely to be given in a trial of a formally untested medication. Patients are all allocated identical coloured tablets of their medications in this double blind placebo controlled study. Patients are tolerating the medication well and a progress report will be provided at the meeting.
P20
MANAGEMENT OF PEGYLATED INTERFERON RELATED NEUTROPAENIA WITH GCSF

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Neutropaenia is a well known adverse event associated with anti-viral therapy for hepatitis C. At Royal Prince Alfred Hospital, Sydney, 21 patients have been able to access GCSF between 2001 and 2005. GCSF (Neupogen 300mcg, three times weekly) was introduced when significant neutropaenia was resulting in ongoing dose reduction of PegIFN in 8 women and 13 men. A retrospective review of patient records was undertaken to evaluate the usage of GCSF and treatment outcomes for these patients.

Average age at time of commencing antiviral therapy was 49.4 (27-61) years. 15 patients were genotype 1 and 6 were genotype 3a. Viral loads were

- 18 patients had undergone liver biopsy pre treatment.
- Fibrosis scores were F=1 (1) F=2 (2), F=3 (6), F=4 (9).
- 3 patients had haemophilia and were not biopsied. 3 patients were post liver transplant. All patients received Pegylated Interferon and Ribavirin.

<table>
<thead>
<tr>
<th>Pre treatment ANC</th>
<th>2.51 (1.40-4.77)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre treatment total WCC</td>
<td>4.83 (2.7-6.8)</td>
</tr>
<tr>
<td>Pre treatment platelets</td>
<td>141 (54-290)</td>
</tr>
<tr>
<td>Pre treatment Hb</td>
<td>138 (126-159)</td>
</tr>
<tr>
<td>Week first dose reduced</td>
<td>0.65 (0.2-1.05)</td>
</tr>
<tr>
<td>Lowest ANC</td>
<td>2.42 (0.7-4.4)</td>
</tr>
<tr>
<td>Lowest WCC</td>
<td>69 (28-200)</td>
</tr>
<tr>
<td>Lowest platelets</td>
<td>7.71 (0-36)</td>
</tr>
<tr>
<td>Week started Neupogen</td>
<td>23 (0-48)</td>
</tr>
</tbody>
</table>

12 patients completed their full treatment program and 5 are ongoing. Of those that ceased treatment early, 2 were NR, one had significant rash and one developed a chest infection. 5 (23.8%) patients achieved SVR (2 geno 3a and 3 geno 1). 6 (28.6%) were Relapers and 4 (19%) patients were NR.

P21
IMPROVING ACCESS TO HEPATITIS C PREVENTION, CARE AND TREATMENT FOR INJECTION DRUG USERS: ENHANCED CLINICAL SERVICES IN A HARM REDUCTION CONTEXT

Sydney South West Area Health Service.

Since the inception of the needle syringe program (NSP) in Australia in the late 1980s, most programs have been primarily concerned with the provision of injecting equipment with a basic level of health education and referral for clients. This approach has been credited with preventing an epidemic of HIV/AIDS, but not hepatitis C transmission, among drug injectors. NSPs that operate from fixed sites present the opportunity to offer additional health services to a population known to have limited access to primary health care and poor physical and mental health. International and national models have been established and demonstrate the feasibility of this approach. Barriers to establishing a new service included funding, health service amalgamation, attitudes to harm reduction services, and the need for interdisciplinary partnership.

A hepatitis C outreach service was established at the fixed NSP at Redfern in 1997, with testing and associated counseling, clinical assessment and referrals. The service closed in 2001 as other methods to access testing became available, few successful treatment referrals were made and broader primary health care needs were identified, which were not well met by a visiting medical specialist in hepatitis. In August 2005, 101 consecutive clients were surveyed. Of these, 27% did not have a regular general practitioner (GP) and 25% reported difficulty accessing a GP. 30% reported local complications of injecting drug use and 40% had not been vaccinated against hepatitis B. 70% clients reported feeling depressed or anxious in the last three months; 20% reported feeling like harming themselves.

The new service is thus designed to provide low threshold healthcare that meets needs of clients, that is easily accessible and is acceptable to clients and the broader community. The service has a focus on primary care, prevention and assessment of blood borne viral diseases and providing referrals into addiction and mental health services. In addition, specialist medical clinics in viral hepatitis, HIV, and sexual health are envisioned. It is hypothesized that via this primary health care approach, clients will utilise the additional health care services at the fixed site, and establish and maintain engagement with the broader health care system, yielding improved health outcomes with respect to blood borne viruses, physical and mental health.
"ONE STOP SHOP": A MODEL OF INTEGRATED ANTIVIRAL AND SUBSTANCE DEPENDENCE TREATMENT FOR INJECTING DRUG USERS

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Successful treatment of hepatitis C and HIV in injecting drug using populations is often enhanced by concomitant treatment of substance use. Unfortunately there is little integration between blood borne virus treatment services and substance use treatment. Here we describe a 'one stop shop' model of on site substance use and hepatitis C treatment in Melbourne. Turning Point Alcohol and Drug Centre is a specialist substance-use treatment centre providing methadone and buprenorphine maintenance pharmacotherapy for opiate dependence. Clinicians are also qualified hepatitis C antiviral prescribers. During treatment for opiate dependence, BBV screening identifies potential candidates for BBV treatment. Interested clients can then receive counselling, immunization, therapy or disease progression monitoring. BBV therapy is initiated on site after substance use stability is achieved, and although treatment is conducted within funding criteria, emphasis is made on managing co-morbidities effectively to facilitate therapy rather than excluding potential candidates. Hepatitis C therapy is directly observed at an onsite pharmacy. Ongoing management of HCV treatment occurs in consultation with specialist infectious disease clinicians and gastroenterologists from nearby hospitals. Preliminary data will be presented including demographics and an overview of the patient population accessing this program. Although uptake of treatment has been low, we have identified a substantial proportion of people who believed they were HCV positive but were not viremic. The mainstay of treatment remains opiate pharmacotherapy. This model of care facilitates a coordinated management of IDU’s treatment goals in a sympathetic environment.

IDENTIFICATION OF A SUBSET OF PATIENTS WHO DO NOT WARRANT A PRE-TREATMENT BIOPSY FOR HEPATITIS C (HCV)

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Most patients with HCV have a liver biopsy before they commence treatment. The major clinical reason for the biopsy is to determine whether patients have cirrhosis, as this would be an indication for a longer duration of treatment. Clinical predictors of cirrhosis suffer from lack of sensitivity and specificity. The aim of this study was to use our large database of people with HCV to determine negative predictors of cirrhosis i.e. which patients should not be biopsied. A prospective database of patients with HCV has been maintained since 1990: 1322 patients have had liver biopsies and 709 had data available for this analysis. We performed multivariate analysis to determine factors with the highest positive predictive value for mild disease (i.e. Metavir score 0,1 or 2). These were age, ALT level and platelets. A clinical predictive model was constructed using the combination of these factors. Receiver operating characteristic (ROC) curves were constructed to determine the best threshold for the ALT level (80) and platelet count (250,000) to maximise the negative prediction of severe fibrosis. The most powerful variable was age. The positive predictive value (PPV) of age <42 and ALT < 80 for prediction of mild disease was .95, with a sensitivity of .22 and specificity of .97. In contrast, the positive prediction of severe fibrosis was quite inaccurate (as previous work has shown). Adding a platelet count of >250,000 did not improve the test characteristics, and in fact worsened the likelihood pos:neg ratio.

Using this clinical model we demonstrate that very few patients under the age of 42 have cirrhosis. In this situation biopsy is not justified, most especially if the ALT is <80. Adoption of this recommendation would have avoided 180 out of 1322 biopsies in our clinic. We are investigating further evidence-based algorithms which could refine the indicators for biopsies in other subsets of patients.

A rationalisation of the requirement for liver biopsy would eliminate a barrier to treatment, increase access to treatment and decrease both risk and costs.
Hepatitis C and Mental Health – A Training Model

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2 Milton General Practice, Brisbane, Queensland, Australia
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4 Kobi House, Toowoomba Base Hospital, Toowoomba, Queensland, Australia
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9 Centre for Diabetes and Endocrine Research, The University of Queensland, Brisbane, Queensland, Australia

People living with hepatitis C report more psychiatric symptoms than those living with other chronic illnesses. There are biological and psychological causes for the higher prevalence of psychiatric symptoms and disorders in people living with hepatitis C. Health Care workers and Mental Health Workers have previously expressed concern about a range of mental health issues related to hepatitis C. In addition, through evaluation of courses in hepatitis C offered by the HIV & HCV Education Projects, School of Medicine, The University of Queensland identified the need for education and policy direction in mental health issues for individuals with hepatitis C.

Queensland Health through their Mental Health Unit and Communicable Disease Unit and in collaboration with key stakeholders developed the “Hepatitis C and Mental Health Protocols”, released in 2004. In the same year, the HIV & HCV Education Projects was funded by Queensland Health to conduct 6 “Hepatitis C and Mental Health Workshops” across Queensland.

This poster presentation showcases the training model delivered. A Management Committee identified priority training areas in the management of neuropsychiatric issues related to the treatment of hepatitis C (HCV) with interferon-based therapies, and the management of patients with HCV patients and a pre existing mental illness. These were incorporated into presentations and facilitated group work.

108 participants attended the courses with a mix of allied health, sexual health and mental health personnel. 83 evaluation documents were received (77%). Participants noted an increase in knowledge/ skills in this area and of greater awareness of treatment/service providers in the area of mental health. Evaluations also showed service providers felt more able to deal with complex mental health issues in people with HCV using the “Hepatitis C and Mental Health protocols”.

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SHARP THINKING: HEPATITIS C HEALTH PROMOTION PROJECTS TARGET YOUNG PEOPLE IN SA

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The Hepatitis C Council of South Australia in partnership with a wide range of agencies has had considerable success integrating the arts into health promotion initiatives, which present hepatitis C messages to young people.

This presentation will focus on two health promotion projects; one that utilised music and one mosaic as a way for young people to express themselves to their respective communities concerning prevention of hepatitis C.

“Tune Into Your Health Its In Your Blood” was a State-wide project that focused on young Indigenous people. The young people attended an education session about hepatitis C and then went on for a two-day workshop, which encompassed song writing and song recording. This resulted in a compilation CD featuring songs from nine regional areas in SA. The songs explore a variety of issues and perspectives using diverse musical styles.

The “Mosaic Project” was presented in Adelaide to six groups of young marginalised people. The young people were presented with health promotion sessions about hepatitis C, substance use, body art and mental health. They then did art pieces that depicted their thoughts and feelings about each particular subject presented. The individual art pieces were then made into a collective mosaic art pieces that now hang in the host agencies.

Both of these projects had positive feedback from the young people involved. Subsequent evaluations indicated improvements in knowledge, which is a known prerequisite for behaviour change.
EFFORTS TO INCREASE AWARENESS OF HEPATITIS C AMONG ARABIC SPEAKING BACKGROUND GP's IN NSW

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1 Multicultural HIV/AIDS & Hepatitis C Service (MHAHS), Sydney, NSW, Australia; 2 Australasian Society for HIV Medicine (ASHM), Sydney, NSW, Australia.

Hepatitis C is prevalent in many parts of the Arab world with WHO estimating a prevalence of 18% in Egypt, 5% in Palestinian Self Rule Areas, 3% in the Sudan and around 2% in Jordan. Consequently, Arabic-speaking background communities in Australia may be at increased risk of having acquired hepatitis C prior to arriving in Australia, or after settling in Australia through sharing injecting equipment or through unsterile medical procedures on return visits to countries-of-birth.

Arabic is the most common language other than English spoken at home in NSW. Arabic-speaking background GPs are in a unique position to deliver targeted screening and care to Arabic-speaking background patients with or at risk of hepatitis C. Providing updated hepatitis C information and resources to Arabic GPs is an important task in the effort to reduce the impact of hepatitis C in NSW.

The MHAHS, in partnership with ASHM and the Arab Council Australia, has commenced strategies to update Arabic-speaking background GPs around hepatitis C. Medical education sessions were developed to be culturally specific to Arabic GPs. The program focused on hepatitis C epidemiology and clinical issues related to Arabic-speaking background patients and provided hepatitis C resources in Arabic. Similarly, the marketing of the session was culturally specific.

The first session was delivered in mid-November 2005 with a second session planned for March 2006. The evaluation and learning from the project to date will be presented. This learning may serve as a useful model for efforts to reach GPs from other priority culturally diverse backgrounds in Australia to reduce the impacts of hepatitis C, especially among CALD background communities.
Our first study of the hepatitis C virus (HCV) in the social networks of injecting drug users (IDUs), networks I (N1), produced several important insights, notably that some IDUs remain HCV-free despite injecting and sharing needles with infectious partners. That finding - suggesting the existence of protective immunity to HCV - spurred the expansion of the collaboration to include immunological expertise, and work began on a pilot study of behavioural, virological and immunological aspects of HCV infection in late 2003. For the pilot, 50 mls of venous blood were collected from 12 IDUs along with behavioural and injecting network data as in N1. Blood specimens were tested for HCV RNA, hepatitis B virus DNA and HIV RNA using commercial assays and for antibodies to each virus. Genotypes were determined using the Line Probe assay and HCV core gene sequences for antibodies to each virus. Genotypes were determined to enable molecular epidemiology. Remaining blood was used to isolate Peripheral Blood Mononuclear cells which were HLA typed then tested for HCV specific CD8+ T cell response using minimal T cell epitopes (from genotypes 1 and 3a) based on donors’ HLA class I alleles. Epitopes eliciting HCV-specific T cell responses were identified in HCV RNA-positive as well as RNA and seronegative participants, reinforcing the notion of protective cellular immune response to HCV in our negatives. The outcomes of N1 and the pilot led to the NHMRC funding a second networks study. Since July 2005, social network methods have been used to recruit 207 mostly young (< 25 years) or beginning (< 3 years) IDUs from across Melbourne. Among 186 specimens tested to date, 30 have anti-HCV but not HCV RNA; 52 have neither anti-HCV nor RNA; 25 of the latter reported injecting with HCV RNA-positive IDUs. Participants will be interviewed at 3-month intervals over two years, providing repeat blood specimens for virological and immunological analyses plus behavioural and network data.

We expect our work will greatly advance understanding of the dynamics and immunovirology of HCV infection and contribute powerfully to vaccine development by identifying T cell epitopes and frequencies that might be associated with protection from or resistance to HCV.

**P28**

**TRANSMISSION OF HEPATITIS C VIRUS: OLD AND NEW, THE SOUTH AUSTRALIAN EXPERIENCE**

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Hepatitis C virus (HCV) is notifiable in South Australia under the Public & Environmental Health Act. Enhanced surveillance on all notified cases of HCV infection provides data that include demographics, testing history and details of likely route of infection; including age at first injecting drug use (IDU), and monitors state-wide HCV testing. Incident cases of HCV describe recent infections (acquired in the previous 12 months); however, fewer than 7% of new diagnoses are identified as such each year. This study reviewed medical notification data for cases reporting acute clinical hepatitis at diagnosis of HCV infection and all cases reporting a previous negative test for HCV antibodies, regardless of the time difference between positive and negative tests. Additionally, cases reporting year of transfusion, where HCV infection was attributed to blood products, and those where IDU exposure included a nominal age of first IDU were reviewed. From these data, two models estimated the likely year of HCV transmission. Model A demonstrates recent transmission; model B pictures transmission spanning 40 years. Between 1995 and 2004, 1514 notifications of HCV infection allowed calculation of the probable year of infection. In the majority of cases, IDU was the route of HCV transmission. Most cases were male (61%) and the mean age was 29 years; range 0-74 years. Model A shows recent transmission peaked in 1999, with a transmission period from 1989 to 2004. During 1997 to 2001 inclusive, Model A estimates that more than 150 people were infected annually. Laboratory testing data show HCV testing has increased with time; although the number of notifications has decreased.

The long-term Model B, used data from 8870 cases and estimated the year of HCV acquisition. These data suggest HCV transmission was stable until the mid-sixties, followed by a 5-fold increase in cases between 1970 and 1977. The epidemic peaked in the years 1982-4, after a slow decline for 10 years, was followed by a steeper decline. Model A demonstrates recent transmission; model B pictures transmission spanning 40 years. Between 1995 and 2004, 1514 notifications of HCV infection allowed calculation of the probable year of infection. In the majority of cases, IDU was the route of HCV transmission. Most cases were male (61%) and the mean age was 29 years; range 0-74 years. Model A shows recent transmission peaked in 1999, with a transmission period from 1989 to 2004. During 1997 to 2001 inclusive, Model A estimates that more than 150 people were infected annually. Laboratory testing data show HCV testing has increased with time; although the number of notifications has decreased.

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USE OF A HEPATITIS C VIRUS (HCV) SURVEILLANCE SYSTEM FOR RECRUITMENT OF PATIENTS WITH NEWLY ACQUIRED HCV INTO A CLINICAL TRIAL

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In Victoria, notifications by doctors and clinicians to the Department of Human Services (DHS) comprise the hepatitis C virus (HCV) passive surveillance system. Since May 2004, the Burnet Institute has been contracted to conduct enhanced HCV surveillance with the aim of identifying newly acquired infections and their risk factors. Concomitantly, Burnet began recruitment for the Australian Trial in Acute Hepatitis C (ATAHC). If a patient is identified through the surveillance system as being potentially eligible for ATAHC and permission is given by patients, they are referred to study researchers. ATAHC is a nationwide clinical trial aimed at providing people with newly acquired HCV with pegylated interferon treatment. Subjects are eligible if they have seroconversion from negative to positive anti-HCV antibody within 24 months, or acute clinical hepatitis C and are enrolled within 6 months of anti-HCV antibody positive result. Patients are being recruited through referral from clinics and general practitioners. We aimed to enhance recruitment to the ATAHC study through the Victorian HCV enhanced surveillance system.

In the first year of enhanced surveillance (June 2004- May 2005), 3013 HCV cases were notified to DHS; 263 of these were flagged as being potentially newly acquired (due to laboratory or clinical notes accompanying the notification) and referred to Burnet for enhanced surveillance. Through follow-up of doctors and patients, 107 (41%) were classified as newly acquired, 41 (38%) of these were potentially eligible for ATAHC, were contactable, and were referred to ATAHC researchers. Twelve of these have been successfully enrolled in ATAHC to date. These 12 patients comprise 50% of the 24 patients currently enrolled in ATAHC in Victoria.

The use of this surveillance system has been successful in identifying cases of newly acquired HCV which are often difficult to identify in a clinical setting. The system has also enabled a substantial number of patients to be referred to a clinical trial, allowing patients to access early HCV treatment for which it has been suggested that sustained virological response rates above 90% can be achieved. In addition, marginalised patients who may otherwise never have been referred to a clinic are able to access HCV treatment and specialist services.
P30
HEPATITIS-RELATED PREVENTION AND TREATMENT ACTIVITY IN THE CONTEXT OF METHADONE TREATMENT IN NEW SOUTH WALES

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Methadone and buprenorphine maintenance treatment potentially provides a sustained, stable context in which to conduct preventive interventions and facilitate treatment for hepatitis for injecting illicit drug users. In this study, structured telephone interviews are being conducted with public sector and private sector methadone/buprenorphine treatment providers at approximately 60 treatment sites throughout New South Wales. Quantitative and qualitative data are being collected regarding (a) incidence of a range of hepatitis B and C education, prevention and diagnostic activities; (b) incidence of hepatitis C treatment activity; and (c) treatment providers’ views regarding barriers to, and opportunities for hepatitis related activities. The study’s data collection phase will be completed by December 2005. This study is directly relevant to many of the goals in the 2005-2008 Australian National hepatitis C Strategy. It will provide clinically-relevant and policy-relevant recommendations for improving service provision in the context of opioid maintenance treatment, and will also provide baseline data that can be used in assessing the effectiveness of important aspects of the Strategy.

P31
A DECADE OF ANTI-HCV PREVALENCE AND RISK BEHAVIOUR SURVEILLANCE AMONG INJECTING DRUG USERS: THE NATIONAL NEEDLE AND SYRINGE PROGRAM SURVEY

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2 The Burnet Institute

Australia has an international reputation for early and extensive uptake of harm reduction measures, opening its first Needle and Syringe Program (NSP) in 1986. Over the past decade, the National NSP Survey has been the key surveillance mechanism for HCV and related risk behaviours among injecting drug users (IDUs). The survey has been conducted annually over a one week period since 1995. The number of participating sites has increased from 21 (1995) to 52 (2005). All clients attending participating sites during the survey week are invited to complete an anonymous questionnaire on injecting and sexual risk behaviours and to provide a capillary blood specimen for antibody HIV and HCV testing.

From 1995 to 2004, the sample size ranged from 1072 to 2694, with 65-68% reporting male gender, 81-87% reporting heterosexual identity, 4-9% reporting Indigenous background and 13-19% reporting imprisonment in the last year. The median age ranged from 27-32 years. The proportion of IDUs aged <25 years increased between 1995 (30%) and 1998 (35%), followed by a gradual decline (19% in 2004).

Anti-HCV prevalence remained high over the 10 year period (49-63%), with some variation between years. Anti-HCV prevalence was consistently higher among older IDUs, those with a longer injecting history and IDUs reporting imprisonment in the last year. Among those reporting imprisonment in the last year, prevalence was higher across all age groups with the greatest difference in IDUs aged <25 years. Reuse of someone else’s needle and syringe in the last month declined from 29% in 1995 to 16% in 2004.

In summary, anti-HCV prevalence has remained high over the past decade, despite reductions in reported sharing of needles and syringes. Public health and prevention strategies need to target young IDUs, particularly those at risk of imprisonment. There is a need for improved access to sterile injecting equipment for young people, alongside other HCV prevention activities.
CONTINUITY AND ENGAGEMENT: FOLLOW UP WITH IDUS IN A HCV SOCIAL NETWORKS STUDY

Higgs P, Winter R, Thach M, Duong D, Armstrong S, Aitken C

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Recruitment to and retention in research studies is an important and somewhat overlooked component of research with injecting drug users (IDUs). Working within a collaboration of epidemiologists, virologists and immunologists, a team of five outreach workers have already recruited over 250 injecting drug users to a social networks study where participants will be followed and re-interviewed regularly for two years.

Recruits are required to describe their social networks and nominate up to 5 IDUs with whom they inject. All participants are given pre and post test counselling for HIV, HBV and HCV and venous blood samples are taken and interviewed about their injecting behaviour.

We believe that fundamental to follow-up of participants is the researcher-participant relationship. To this end the outreach team spends many hours in the field recruiting and following participants. It is clear that there is a need to allow for the demands of the street drug market which include daily injecting and negotiation with law enforcement officers.

The evolution of this negotiated relationship is dependant on a perceived benefit by participants be it psychological, financial or health related. Continued engagement with IDUs in this setting is built on a dynamic participant focused model which is not discrete to individual research studies but built up over a long term involvement in the field.

THE ABANDONED GENERATION – HEPATITIS B IN THE NORTHERN TERRITORY

Hughes B

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Hepatitis B remains a significant health problem in the Northern Territory with continuing high background prevalence rates and high incidence of acute infections. The response by Territory Health Services has been to focus on childhood vaccination and not actively support adult interventions such as education, testing, vaccination and treatment. Current endorsed guidelines for management of medical conditions in rural and remote areas in the Northern Territory discourage testing and therefore treatment and vaccination for hepatitis B.

The public health response to hepatitis B in the Northern territory has abandoned indigenous adults with chronic infection who lack resources to access private treatment to suffer the personal consequences of untreated hepatitis B. Further transmission to other adults has not fallen as a consequence of poor education, vaccination and testing of adults.

The reasoning behind this policy including the lack of public access to resources essential for diagnosis and treatment of hepatitis B in the Northern Territory is discussed and challenged. Efforts to reverse this culture of abandonment being difficult without strong endorsement from Territory Health Services are described including the financial and social impact of this policy to be felt more acutely as other health outcomes in indigenous Australians improve.
The domino effect occurs when an entire row of standing dominos falls after the first. We describe the domino effect of a seemingly innocuous policy to restrict HCV nucleic acid testing by the public pathology provider for the NT and how it profoundly affects access to knowledge, prevention, resources and treatment of hepatitis C in the Northern Territory.

HCV nucleic acid tests, including HCV qualitative RNA PCR testing are performed through the Northern Territory pathology services only after prior approval by the chief pathologist; each test must be personally and individually discussed with the chief pathologist. The stated purpose of this procedure is to reduce costs.

I propose that while this policy may reduce public pathology costs, it is not cost effective. Further, the ramifications of such a policy are considerable including:

• An inability of Royal Darwin Hospital to provide treatment services;
• Quality control issues relating to pathology results as a result of fragmentation of services;
• Inadequate investigation and referral of hospital inpatients to treatment services provided off campus;
• Inability to provide investigation and treatment services in correctional facilities as these individuals have no access to Medicare;
• Barriers against testing with perceptions that treatment is not readily available or only available to those with private health insurance.
• Treatment and prognosis implications for people living with HCV who are unaware of their HCV RNA PCR status.

I encourage other state and national bodies to make sure that the Northern Territory Health Services improve health outcomes for those affected by and at risk for HCV by providing the same standard of public access to HCV nucleic acid testing that is available elsewhere in Australia.

Responsibility for hepatitis C prevention and management within Justice Health falls primarily within the parameters of the clinical services of the Population Health stream, with services expanding gradually over the past 6 years. During this time the high prevalence of hepatitis C amongst NSW adult inmates and juvenile detainees has become widely known and harm minimisation has become a focus within Population Health. There has also been considerable investment by Population Health in the development of a specialised service and workforce to respond to Blood Borne Viruses (BBV) and Sexually Transmitted Infections (STI) generally and hepatitis C in particular. Treatment efficacy for hepatitis C has improved and Justice Health is now also responsible for providing health care to adolescents in custody. It is timely therefore, for Justice Health to conduct a review of existing services and explore options for future directions. The completed review describes in detail current hepatitis C services and comprehensively documents strategic and evidence based options for the future provision of services.

This paper will provide an overview of the review process and will describe some of the issues that impact upon the provision of comprehensive and equitable hepatitis C service delivery in the correctional environment. Key gaps in services will be identified and a range of both immediate and long-term service planning recommendations will be presented.
P36 COUNTING THE COSTS – COUNTING THE BENEFITS OF PRISON BASED HEPATITIS C TREATMENT PROGRAMS

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The Western Australian Department of Justice determined that they would commence an expanded shared care program for the treatment of inmates given the high prevalence of hepatitis C in the prison system. It is important to note that in WA health services are provided by the Department of Justice, and as such all treatment costs are borne by the Department when the in-sourcing of treatment services is the preferred model for hepatitis C treatment. It was determined that it would appropriate to initially pilot a shared care program at a limited number of sites, to assess the existing capacity of health services to respond to the delivery of such a program. From an earlier prevalence study conducted in WA prisons it was reported that approximately 23% of male inmates were infected and 46% of female inmates across the state, although metropolitan prisons reported higher prevalence rates.

One year after the commencement of the Pilot Program a study was conducted to estimate the overall cost of the program, to inform future budgeting estimates and importantly to report on the satisfaction of inmates that had accessed treatment in prison.

The Pilot Program determined that a key aim was to in-source specialist treatment services, with such specialists also taking responsibility to mentor prison based health care providers to increase the local capacity to manage inmates undergoing hepatitis C treatments. Completion of the Pilot Program has demonstrated that prison health services do have the capacity to operate as partners in a shared care program, that there is a good level of treatment compliance by inmates and that health services now have a clear indication of the economic requirements of an expanded treatment program.

This paper will explore the elements involved in the provision of hepatitis C treatments primarily to inmates in regional prisons, with a special emphasis on economic implications.

P37 INCREASING ACCESS TO BLOOD-BORNE VIRUS SERVICES; INNOVATIVE STRATEGY FOR PARTNERS AND FAMILIES OF PEOPLE IN PRISON

Tapping L J

Outcare's Partners and Families of Prisoners Blood-Borne Virus (BBV) Program aims to prevent the transmission of BBV's to the partners and families of people in prison.

Rates of BBV's amongst people in correctional settings are significantly higher than in the general community. As the turnover of people in prison is high this has the potential to increase infection rates within the community.

Outcare's BBV Program identified a need to address access to BBV prevention and education initiatives. The partners and families of people in prison are a notoriously hard to engage, high risk group. Their health typically takes a much lower priority to other stressors in their lives.

An innovative Pilot Strategy was launched this year that aimed to address the barriers to accessing BBV services. This involved establishing a hepatitis A / B Outreach Vaccination Strategy at the prison visitors centre. Partners and families who were at high risk of getting a BBV could be vaccinated before or after their visit. Those who were identified as hepatitis C positive were vaccinated against hepatitis A and B.

As this is a Pilot Strategy only one Prison is currently targeted and this prison has a large percentage of people who are on remand, hence the release rates are high. As a result an accelerated Vaccination Program was utilised, so that within a 4 week time period people receive the required three injections.

As hepatitis B is vaccine preventable this strategy has the potential to reduce the burden of co-morbidity amongst a group where hepatitis C rates are high.

The Outreach Vaccination Service provided a supportive environment to increase the awareness of the risk of BBV transmission. Pre vaccination counselling and education on hepatitis B, hepatitis C and HIV/AIDS was provided to each person who accessed the vaccination service.

The initiative also provided an opportunity for referral to hepatitis C and drug treatment agencies.

To assess how effective the strategy has been in ensuring follow-up of the series of three injections and the efficacy of the education provided, an ongoing evaluation is being conducted.
P38
ESTABLISHING INTEGRATED HEPATITIS SERVICES IN OPIOID SUBSTITUTION THERAPY SETTINGS: A SERVICE DEVELOPMENT AND PARTNERSHIP INITIATIVE IN THE SWAHS

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Sydney West Area Health Service (SWAHS) is developing a program that aims to deliver on-site hepatitis clinical services to opioid substitution therapy (OST) patients across target sites in the area. This will include access to HCV antiviral therapy. This service development initiative represents an interdisciplinary approach between Area Hepatitis Services and tertiary liver clinic and addiction specialist services in the SWAHS. Anecdotal evidence suggests that IDU’s, a high-risk group for blood-borne virus (BBV) transmission under-access mainstream health services. Evidence demonstrates that up to 90% of HCV is transmitted by injecting drug use. Despite the high prevalence of HCV in this population and the improved efficacy of treatment modalities, uptake of HCV antiviral therapy by this group has been limited.

In the SWAHS (eastern cluster) Drug and Alcohol Services, approximately 800 people are on various treatments across the targeted sites. BBV screening has been done in the service recently and these findings support the establishment of the service model. 93% of the 97 patients tested returned HCV antibody positive results. 50% of these individuals also had raised alanine aminotransferase levels. Patients showed a high level of interest in undertaking treatment for hepatitis C if infected, with 82% indicating probable or definite interest.

Opioid substitution therapy (OST) patients frequently move between treatment and injecting drug use. OST settings therefore provide an access point for health interventions targeting HCV positive people, providing an opportunity for further interventions and referrals. This approach is consistent with the harm minimisation model in reducing the impact of HCV on the individual and the community while reducing the long-term public health cost of treating chronically infected individuals.

This program will offer public sector OST clients of D&A Services in the SWAHS (Eastern Cluster) access to a comprehensive hepatitis service. Drug and Alcohol services will undertake delivery, support and coordination of the clinics while the Storr Liver Unit will provide gastroenterology services. General hepatitis monitoring, advice and support will be available as well as hepatitis screening including pre and post test counselling and vaccination. On site access to HCV treatment can also be provided to clients who may be interested and eligible.

This initiative aims to build on the work previously done and plans to deliver workable and sustainable hepatitis arrangements. Progress to date will be discussed.

P39
SPECIFIC STRATEGIES USED IN ESTABLISHING HEPATITIS SERVICES IN OPIOID SUBSTITUTION THERAPY SETTINGS (OST). A SERVICE DEVELOPMENT AND PARTNERSHIP INITIATIVE IN THE SWAHS

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This program aims to deliver workable and sustainable hepatitis services in Drug and Alcohol settings. It involves a service development and delivery partnership initiative between Area Hepatitis Services, the tertiary liver clinic and Drug & Alcohol (D&A) Services (eastern cluster) in the SWAHS.

This initiative plans to offer public sector D&A OST client’s on-site access to comprehensive hepatitis services across targeted treatment centres in the SWAHS. The service will be delivered, supported and coordinated by drug and alcohol staff. On-site access to a gastroenterologist is available, clinically supported by the Storr Liver Unit. This poster will highlight the various strategies used in this project including workforce development initiatives, client consultations, and the development of clinical protocols.

Workforce development has been a key element. A general HCV session with a focus on HCV treatment was held for D&A staff. Approximately 45 health care workers attended from a range of disciplines across the service. Evaluations were positive and indicated a high level of support from within the service for the initiative. A number of key nursing staff interested in undertaking this work were identified. In collaboration with service managers, they were provided with enhanced HCV training and clinical placement in the Storr Liver Unit. Drug and Alcohol Case Managers were offered further training aimed at increasing levels of skill and confidence. Needs analysis was used to identify specific areas where they felt they would benefit from further training. Protocols have also been developed for this project.

It is recognised that an understanding of the broad issues and needs of clients who use the service will clearly be of benefit to all stakeholders. With support from a client advocacy group NUAA, a process of client consultations was undertaken. Input was sought from a range of clients utilising focus group and questionnaire methods. It is anticipated this feedback will also be useful in the development of client resources.
Many researchers have investigated the knowledge of medical professionals, particularly general practitioners (GPs) of blood borne viruses. These studies demonstrate a variable level of knowledge. Knowledge deficiencies were evident in risk factors for hepatitis C transmission, the impact of hepatitis C on the quality of life of those infected and the support needs of people with hepatitis C. There is an increasing recognition of the frontline role that GPs must play in managing hepatitis C, however if GPs' knowledge is insufficient, their ability to care and provide support for people with hepatitis C will be limited.

There is little consensus in the literature regarding effective training models that enable change to GP practice. Most studies however highlight the importance of implementing multiple strategies that reinforce key messages over time through a variety of media.

We describe an evidence-based hepatitis C education program for GPs. This program is funded by the Department of Human services and has been developed by the General Practices Divisions Victoria (GPDV) in consultation with the Hepatitis Subcommittee of the Victorian Ministerial Advisory Committee on Blood-Borne and Sexually Transmissible Infections.

The education program was developed with assistance from a multidisciplinary steering committee which included an infectious diseases physician, general practitioners, nurses, DHS policy officer and the community sector. This was a critical element in ensuring that the strategies were of high quality and appropriately targeted at GPs.

The key components of this education program include the development of an educational resource and educational events that are CME accredited. An evaluation component has also been included in this project to measure whether the described interventions can lead to behaviour change in GP practice in relation to hepatitis C testing, counselling and referral.

Preliminary data indicates that GPs are accepting of the educational strategies that are being implemented. 33 out of 33 GPs attending an education session agreed that the activity would have an impact their screening and management of patients with hepatitis.

The discrimination faced by people who inject drugs is well known. Many Opioid Treatment Program (OTP) clients also face discrimination, including in health care settings. This may lead to poor uptake of health care services and hepatitis C services. Prior experience at this clinic supports this observation – previous programs in Queanbeyan aimed at interventions in this group have been limited in their uptake by clients.

Crossroads is an OTP providing dosing and dispensing at a stand alone clinic. This allows increased opportunities for interaction with clients by the Sexual Health, HIV and Hepatitis C Service (SHS). This intervention differs from similar collaborative approaches used elsewhere in the Greater Southern Area Health Service (GSAHS) where clients are dosed in the community.

Following collaboration with Crossroads Clinic at the time of the Treatment Awareness Week Campaign in May 2005, a new approach was developed involving a nurse from the SHS interacting with clients by working in a dosing capacity weekly for one month. Sexual health services including Sexually Transmitted Infection and Blood Borne Virus (STI & BBV) screening were also offered. Rapport with clients and trust were developed in this time.

In the following three months the nurse worked in a sexual health capacity for three hours weekly, providing STI & BBV services to clients. This resulted in increased levels of access to clinical care, education, prevention and testing by OTP clients.

Outcomes include:

- 34 new clients seen, 6 self-identified as Aboriginal clients
- 8 newly diagnosed cases of hepatitis C; 13 previously diagnosed cases - provided with information, education, support and monitoring
- 2 clients referred to a liver specialist for hepatitis C treatment consideration by our service
- 4 clients referred to liver specialist by their GP following our intervention
- 3 new cases of hepatitis B diagnosed (2 co-infections with hepatitis C)
- 14 clients commenced hepatitis B vaccination.

The poster will further explain and explore this collaborative approach to providing services to a priority group and its demonstrated increased uptake of services. It provides evidence of a successful partnership approach between agencies.
P42
MEASURING ATTITUDES TOWARDS INJECTING DRUG USERS AND TOWARDS HEPATITIS C

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Recent social research indicates that people with hepatitis C (HCV) often face stigma and discrimination in the health care sector. This is largely because of the association of this virus with injecting drug use (IDU). Currently no valid and reliable measures exist to assess attitudes toward HCV and IDUs. This research aimed to develop such tools. Pre-existing scales used to measure attitudes towards a similarly stigmatized illness, HIV/AIDS and a similarly stereotyped population, homosexuals, were adapted to develop two new scales assessing attitudes to HCV and attitudes to IDUs. Comparisons between the new scales and their parent scales indicate that these new scales have good reliability and validity. The new scales also correlate well with other known predictors of negative attitudes towards homosexuals and AIDS, these being conservatism, religious fundamentalism and controllability of stigma. These findings indicate that these new scales provide reliable and valid attitudinal data. Currently the scales are being administered to 55 health care workers. Preliminary findings from these interviews support the reliability and validity of these scales when used in the field.

P43
IMPLICIT AND EXPLICIT ATTITUDES OF HEALTH CARE WORKERS TOWARD THEIR CLIENTS WITH HCV: ARE THESE RELATED TO TREATMENT EXPERIENCES?

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There are currently a small but growing number of research studies focusing on health care workers' attitudes towards their clients with hepatitis C (HCV). Most of these studies address only the explicit attitudes of health care workers. This study looks at the explicit (conscious) and implicit (unconscious and automatic) attitudes of health care workers and how these impact on treatment experiences. Based on the dual attitudes model proposed by Wilson, Lindsey and Schooler (2000) the following is hypothesized (i) health care workers will show divergent implicit and explicit attitudes towards their HCV positive clients (ii) given the current emphasis on decreasing HCV-related discrimination amongst health professionals, explicit attitudes will not be prejudicial, while more entrenched prejudice may be displayed in implicit attitudes of health care workers (iii) the largely negative implicit attitudes and the more positive explicit attitudes will independently influence the way health care workers act towards their HCV positive clients and will impact on treatment experiences. Sixty health care workers, 120 of their clients with HCV (acquired from injecting drug use) and 120 of their clients without HCV (and non injecting drug users) attending the same treatment facility participated in this study. Health care workers were administered a Single Category Implicit Association Test (SCIAT) assessing implicit attitudes and a feeling thermometer assessing explicit attitudes of health care workers toward IDUs. SCIAT analyses revealed that health care workers show negative implicit attitudes (M = -.36) towards their HCV positive IDU clients, t(59) = -6.71, p < .001. In contrast their explicit attitudes (M = 62.98) as measured by the feeling thermometer were significantly greater than the scale midpoint of 50, t(59) = 5.18, p < .001, suggesting that these health care workers have favourable explicit attitudes toward IDUs. However, neither the SCIAT nor the feeling thermometer predicted clients' treatment experiences (e.g., whether their complaints are taken seriously, how welcome they feel) and both measures were unrelated to apparent differences in treatment experiences and treatment satisfaction reported by HCV positive and HCV negative clients.
P44
HEALTH CHARACTERISTICS OF A COHORT
HEPATITIS C ANTIBODY POSITIVE PEOPLE

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A hepatitis C care and prevention programme in Adelaide,
Australia, enrolled 182 hepatitis C antibody positive
participants between 2002 and 2004. Participants' health was assessed on enrolment. Information
was sought on general medical history and possible
symptoms of hepatitis C. Psychiatric symptomatology
was assessed against the DSM-IV criteria with the Prime
MD diagnostic questionnaire, augmented by the Zung
Depression Scale. Subjective health status was assessed with
the Short Form 36 (sf36).

Current Major Depressive Episode (MDE) was diagnosed in
132 participants (73%). General Anxiety Disorder (GAD) was
diagnosed in 28 participants (14%). Panic Disorder (PD) was diagnosed in 44 participants (21%).
Dysthymic Disorder (DD- low grade persistent depressed mood) was diagnosed in 76 participants (37%).
Rates of MDE, GAD, PD and DD were significantly higher than
the South Australian population norms.

Scores for sf36 were significantly lower across all domains
of the questionnaire. Scores were particularly decreased in the areas of vitality, emotional and physical impacts on role
function and mental health.

Most commonly reported symptoms were: fatigue (81%),
poor concentration (82%), poor motivation (81%), irritability
(79%), anxiety (79%), mental fog (75%), depression (74%),
poor sleep (74%), dry mouth (69%), painful joints (64%), liver
pain (58%), loss of libido (58%).

Very high rates of depression, dysthymia and anxiety were
present in this cohort of hepatitis C antibody positive
people. This survey has further demonstrated the extensive
symptoms, mental and social problems related to hepatitis
C infection.

P45
LINKING RESEARCH, POLICY AND PRACTICE:
A CLEARINGHOUSE OF AUSTRALIAN
RESOURCES IN HEPATITIS C, HIV AND
RELATED DISEASES

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The presentation outlines the philosophy underpinning a
web-based clearinghouse of the Consortium for Social and
Policy Research on HIV, Hepatitis C and Related Diseases,
a research and community health services collaboration
funded by NSW Health. An overview of the scope of the
Clearinghouse and demonstration of its functions is also
provided, along with a discussion of possibilities for its
integration into current work practices of researchers,
policymakers and practitioners across the sector.

The Clearinghouse provides links and access to Australian
resources and documents related to social and policy
research, including conference presentations, journal articles,
policy documents, reports, education and prevention
campaign materials, and media information. It enables
sharing of resources, including health promotion materials
and organisational policies, across various government,
community and research-based organisations, and is
intended to facilitate existing and developing partnerships in
the field. It is hoped that easy access to resources from across
the sector will encourage dialogue, discussion and feedback
that will enable policy and resource developers to draw on
the strengths of existing resources in the development of
new initiatives. A central point of access to material housed
in university, government, community and other locations is
also intended to facilitate a more sound understanding of the
necessary links between research, policy and practice.
P46
STANDARDISED REFERRALS FOR HEPATITIS B INFECTED WOMEN IDENTIFIED THROUGH ANTENATAL CLINICS IMPROVES KNOWLEDGE AND INCREASES TREATMENT UPTAKE

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The hepatitis B virus (HBV) can cause liver damage and liver cancer. Full assessment of patients with HBV infection allows appropriate management decisions to be made.

Sydney South West Area Health Service – Western Zone (The Area) is home to one third of the hepatitis B infected population of NSW. It also has the highest number of births in NSW and the highest recorded number of infants born to hepatitis B surface antigen positive (HBsAg +ve) women, numbering between 150 -250 annually. Many of these women have been infected with HBV since birth, are asymptomatic and often unaware of the infection until their antenatal screen.

Up until 2002 HBsAg positive mothers received information on hepatitis B from the Antenatal clinic staff, however they were not assessed clinically in relation to their hepatitis B infection. To address this gap in service delivery, referral links to existing liver clinics were established, along with a Memorandum of Understanding (MOU) between services and a referral algorithm developed.

Since the programme was introduced in 2002, women now identified as being HBsAg positive on Antenatal screening are referred to a hepatitis nurse clinic for information, education and comprehensive virology/serology testing. The results are then reviewed with the patient at a subsequent visit. Depending on the results and specialist preference, patients are offered a review by a Staff Specialist Hepatologist for further clinical management or referred back to their local doctor for further monitoring.

Since March 2002, over 230 women have been reviewed by the liver clinics as a direct result of the new referral pathways. This has resulted in improvements in the following areas

- Patient education about HBV
- Screening and vaccination of household and sexual contacts
- Ceasing unnecessary precautions (such as separating eating utensils)
- Providing the diagnosis in some cases
- Antenatal staff knowledge
- Treatment uptake for this population

This model works well in SSWAHS-WZ. There are ongoing investigations into the benefits of educating and following up these women.

P47
“LOOK I’M FIT, I’M POSITIVE AND I’LL BE ALL RIGHT, THANK YOU VERY MUCH: COPING WITH HEPATITIS C TREATMENT AND UNREALISTIC OPTIMISM

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Hepatitis C treatment is known to produce significant physical and psychiatric side effects. Health professionals in hepatitis C treatment clinics focus on preparing people to cope with these side effects and offering medical, practical and emotional support once side effects become apparent. Judging oneself to be less at risk of negative events has been termed unrealistic optimism (UO). UO has been implicated as contributing to risky health practices and to delays in seeking help or facilitating coping with negative events. The role of UO in coping with the side effects of hepatitis C has not been previously explored.

Data from semi-structured interviews with 20 people undergoing combination pegylated interferon and ribavirin treatment for hepatitis C at three clinics in the Sydney area were explored for the presence of UO and also the impact that this had on participants’ processing of information pre-treatment and management of side effects during treatment.

Participants in this study did provide examples of UO in their approach to coping with hepatitis C treatment side effects. For example, being immediately dismissive of pre-treatment information about side effects as irrelevant to them, being ‘blasé’ about possibilities of side effects and making judgements of future vulnerability based on past experience (“I’ve never had depression, so I won’t have any trouble with it”) were suggestive of UO. Some of these participants described delays in seeking help for these unexpected side effects. Evidence for UO beliefs and orientations were found in some participants’ transcripts, including delays in help-seeking for side effects of hepatitis C treatment. There are divergent opinions in the literature concerning the aetiology and strategies to address UO. However, data from this study will contribute to an understanding of UO and its impacts on experience of hepatitis C treatment side effects, patients’ coping styles and impact on the social support available to the patient. This understanding will contribute to the range of tools available for health care professionals to assist individual patients in coping with hepatitis C treatment side effects.
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The following organisations support the aims of the conference and encourage their members, staff, students and associates to attend.

New Zealand Health Department

[Logos of various organisations]