CONFERENCE ENVIRONMENT POLICY

ASHM Conference, Sponsorship and Events Division implements a waste-reduction policy that addresses: Reduce, Reuse, Recycle. This is done before, during and after each Conference. Our waste-reduction policy aims to implement the following strategies:

• reduce the number of printed materials by using electronic communication means wherever possible, including the website, email, online registration and abstract submission.

• monitor final delegate numbers for an accurate forecast of catering requirements in order to avoid waste.

• research and prioritise purchasing items and equipment that support the use of recycled materials or can be recycled after use.

• ensure that recycling bins are available onsite at all events.

• minimise travel through the use of teleConferences instead of face-to-face meetings and holding meetings only when necessary.

• encourage all Conference stakeholders to consider the environment by suggesting the following: reduction in printing requirements; recycling Conference materials; and reusing Conference merchandise.
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AIVL is the national peak organisation for the state & territory drug user organisations and represents people with a history of injecting drug use at the national level. AIVL and its member organisations are peer-based – run by and for people who are at risk of and/or living with hepatitis C and hepatitis B. Over 90% of new hepatitis C infections, at least 80% of existing chronic hepatitis C infections and upwards of 70% of new hepatitis B infections are among people with a history of injecting drug use. If you want first-hand information and the perspective of those directly affected, then AIVL and its member organisations have what you’re looking for…

Meet us at the AIVL booth, see us present & check out our posters during the conference.

www.fb.com/aivlinc
www.aivl.org.au
www.twitter.com/aivl
WELCOME LETTER

Dear Delegate,

The Conference Collaborators are delighted to welcome you to New Zealand for the 8th Australasian Viral Hepatitis Conference, at SKYCITY, Auckland from 10 to 12 September 2012.

This year’s Conference marks a very exciting time for those who work in the viral hepatitis sector. Currently, more than half a million New Zealanders and Australians have chronic viral hepatitis B or C, of whom less than 10% have received antiviral therapy. As this infected population ages, the proportion with cirrhosis and liver-related complications will grow.

Over the last 10 years, extremely effective and well tolerated oral antiviral therapies have become available for active chronic hepatitis B, however treatment numbers still remain unacceptably low as many patients remain undiagnosed or lack access to appropriate information and care.

In contrast to chronic hepatitis B, low treatment uptake in people living with chronic hepatitis C in part reflects concerns about safety and efficacy of current interferon-based therapies. The recently introduced triple therapies including boceprevir and telaprevir will hopefully improve acceptability of treatment for many of those affected.

These developments will redefine the criteria for treatment with removal of many, if not all, current contraindications to treatment, resulting in a sudden increase in demand for treatment. Regardless of the advances in antiviral treatment however, hepatitis B and C still remain complex social conditions.

Stigma and discrimination associated with hepatitis C remains a key challenge for all sectors, particularly health care. Engaging with new groups and communities to facilitate access to culturally competent hepatitis B care and treatment to those who need it most will be a continuing challenge.

Our challenge will be to develop new models of care that will meet this increased demand, and to provide options for clinical treatment in ways that are acceptable and attractive to those living with viral hepatitis, including a reinvigorated focus on the prevention of viral hepatitis.

This conference, with integrated programming of sessions and a plethora of international and local speakers, provides an opportunity for issues to be examined across all disciplines, as relevant to laboratory research, clinical care, public health initiatives, community and policy sectors, from Australia to New Zealand, the Asia Pacific and beyond.

It also provides you with a great opportunity to network and learn about new tools and techniques to improve your skills set; learn about processes or best practices to increase productivity and efficiency, emerging and new technologies and advancements in clinical approaches.

Basic Science

Hepatitis B and hepatitis C continue to be major public health problems and these diseases remain the focus of researchers worldwide. There have been major breakthroughs in treatment strategies with new direct acting antiviral agents targeting hepatitis C virus and the discovery of host genomic polymorphisms allowing clinicians to personalise therapy. New technologies, such as Next Generation Sequencing, have given insights into the evolution of hepatitis B virus and hepatitis C virus under different selection pressures. This Conference provides an opportunity for delegates to hear from leading international and local experts on the latest developments in viral hepatitis.

Co-Chair: Tanya Applegate (representing the Australian Centre for HIV and Hepatitis Virology Research)
Co-Chair: Scott Bowden (representing the Victorian Infectious Diseases Reference Laboratory)
Clinical Care
The 8th Australasian Biennial Hepatitis Meeting marks an important watershed for all clinicians involved in the management of patients with chronic hepatitis B and hepatitis C. Hepatitis B is an important focus of this year’s meeting and Professor Henry Chan, from Hong Kong, will set the scene at the opening session by presenting the high morbidity and mortality of this condition throughout Asia-Pacific. This meeting also occurs at a very exciting time for those who manage chronic hepatitis C, with rapid development of direct-acting antiviral (DAA) therapy. Dr Jordan Feld will provide a state-of-the-art update on how we can use host genetics and the first generation protease inhibitors to optimise HCV treatment outcomes. Exciting new data on the first interferon-free, all oral regimen for all patient populations, will be presented by the NZ investigators from the Phase II ELECTRON study.

Several presentations will cover new innovative approaches to viral hepatitis clinical care. The role of the nurse in service delivery will be a particular focus. Janet Catt from the Royal Free Hospital in London will outline her role in leading hepatitis, cirrhosis and HCC clinics in secondary care.

Co-Chair: Greg Dore (representing the Kirby Institute)
Co-Chair: Edward Gane (representing the New Zealand Society of Gastroenterology)

Community and Social Research
The Community and Social Research theme brings together eminent thinkers, researchers, community members and practitioners to engage with current key issues in hepatitis prevention, treatment and care. Speakers will address issues such as human rights, stigma and discrimination, complexities in the social and political dimensions of viral hepatitis, models of care and working within communities to address viral hepatitis.

Co-Chair: Annie Madden (representing the Australian Injecting and Illicit Drug Users League)
Co-Chair: Carla Treloar (representing the National Centre in HIV Social Research)
Co-Chair: Helen Tyrrell (representing Hepatitis Australia)

Epidemiology, Public Health and Prevention
Epidemiology, Public Health and Prevention Chronic viral hepatitis has a profound impact on human health globally, and particularly in our region. It is essential that we continue to improve our understanding of the epidemiology of these infections to inform more efficient and effective public health responses.

The 8th Australasian Viral Hepatitis Conference will explore a number of themes which are emerging in this rapidly changing field, including innovative uses of notifiable disease surveillance systems; community and population level approaches to controlling viral hepatitis transmission and increasing access to treatment; new ways to establish the burden of viral hepatitis and liver cancer in priority populations; and the development of evidence-based strategies to reduce the impact of viral hepatitis in Australasia and throughout our Asia Pacific region.

Co-Chair: Benjamin Cowie (representing the ASHM Viral Hepatitis Program)
Co-Chair: John Hornell (representing The Hepatitis Foundation of New Zealand)
## ORGANISING COMMITTEE MEMBERS AND CONFERENCE PARTNER REPRESENTATIVES

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CONFERENCE PARTNERS OVERVIEW

Australasian Society for HIV Medicine (ASHM)
The Australasian Society for HIV Medicine (ASHM) is a peak organisation of health professionals in Australia and New Zealand who work in HIV, viral hepatitis and sexually transmissible infections. ASHM draws on its experience and expertise to support the health workforce and to contribute to the sector, domestically and internationally.

Australasian Society for Infectious Diseases (ASID)
The Australasian Society for Infectious Diseases (ASID) Inc. is an independent organisation, founded in Melbourne in 1976 by an eminent group of physicians, pathologists and scientists. The aim of the society is to advance postgraduate education in infectious diseases in Australasia and internationally; to promote research in all aspects of infectious diseases and to advocate for sound and evidence-based public health policy in matters related to infectious diseases. Membership encompasses Infectious Diseases Physicians, Clinical Microbiologists, Scientists, Infection Control Practitioners, Public Health Physicians, Sexual Health Physicians, Veterinarians and others eminent in the field of infectious diseases. ASID has constituted several Special Interest Groups which bring together members with interests in Paediatric infections, Hospital Infection Control, Mycology and Viral Hepatitis. It has also recently established a clinical trials network and a guidelines subcommittee.

Australian Centre for HIV and Hepatitis Virology Research (ACH²)
The Australian Centre for HIV and Hepatitis Virology Research (ACH²) is one of Australia’s four national centres for HIV research. The centre is directly funded by the Office of Health Protection, Commonwealth Department of Health and Ageing. The purpose of the Centre is to deliver virological and immunological research outcomes of significance to improve the diagnosis, treatment and prevention of HIV and HCV in Australia and in a broader regional and international context. To achieve this objective, ACH² funds applied and strategic research into the virology and immunology of HIV and Hepatitis C.

Australian Hepatology Association
The Australasian Hepatology Association (AHA) is the peak professional body representing Australian and New Zealand hepatology nurses and allied health professionals. The AHA is dedicated to ensuring excellence in the care and management of people affected by liver disease. We support and educate a wide range of nurses across the health-care sector. Website: www.heaptologyassociation.com.au
Australian Injecting & Illicit Drug Users League (AIVL)
The Australian Injecting & Illicit Drug Users League (AIVL) is the peak body of drug user organisations in Australia. AIVL and our members operate under a peer philosophy – run by and for people who are at risk of and/or living with hepatitis C and hepatitis B. With over 90% of new hepatitis C infections, at least 80% of existing chronic hepatitis C infections and upwards of 70% of new hepatitis B infections among people with a history of injecting drug use, AIVL and our members represent one of the most relevant and significant groups to a symposium such as the Australasian Viral Hepatitis Conference.

Burnet Institute
Burnet Institute is a leading independent Australian medical research and public health organisation focused on improving the health of poor and vulnerable people in Australia and internationally through research, education and public health. The Institute integrates world-class laboratory and field-based research into multidisciplinary programs to prevent, detect and treat diseases of global significance.

Coalition to Eradicate Viral Hepatitis in Asia Pacific (CEVHAP)
The Coalition to Eradicate Viral Hepatitis in Asia Pacific (CEVHAP) is the first organization of its kind in the region, established as an independent, multidisciplinary body to advocate for public policy reform to reduce the burden of and ultimately eliminate viral hepatitis in Asia Pacific. Incorporated in October 2010, CEVHAP membership is comprised of many world-renowned hepatitis experts, academics, patient representatives and people living with the infections. By utilizing their collective expertise and in partnership with a broad range of stakeholders, including government bodies these members work to develop effective strategies to inform the development of national responses to viral hepatitis in countries across the Asia Pacific. For more information, please visit www.cevhap.org

GES/A
The Gastroenterological Society of Australia (GES)/ALA sets, promotes and continuously improves the standards of practice, training and research in gastroenterology and hepatology in Australia. GESA is the chief advocacy group for the healthcare professionals and scientists working in this field.
Hepatitis Australia
Hepatitis Australia was incorporated in 1997 as the peak non-government organisation for Australia’s community response to viral hepatitis. Our mission is to ensure the needs of Australians affected by or at risk of viral hepatitis are met. We do this by providing national leadership and advocacy on viral hepatitis and forming partnerships with organisations that share our goals.

Working in conjunction with our members, the eight state and territory hepatitis organisations, Hepatitis Australia provides a coherent national voice to inform and influence national policy and practice. Our work is also directed at: community education on viral hepatitis and liver health literacy, strengthening the capacity of the community workforce to engage with priority populations and creating a comprehensive community-based response consistent with the national strategies. For more information please visit www.hepatitisaustralia.com

Hepatitis Foundation of New Zealand
Over the last 30 years, the Hepatitis Foundation of New Zealand has predominantly focused on hepatitis B. In 1999 it was contracted to deliver part of the national hepatitis B screening programme. During the programme over 170,000 New Zealanders were screened for hepatitis B. In January 2011 the Foundation was awarded a contract by the Ministry of Health to look at ways to improve hepatitis C services in New Zealand.

Kirby Institute
The Kirby Institute for infection and immunity in society (formerly the National Centre in HIV Epidemiology and Clinical Research) was established in 1986 and is responsible for the co-ordination of national surveillance programs, clinical research and clinical trials. The Kirby Institute works across a broad range of infectious diseases including HIV, STIs and viral hepatitis.

Ministry of Health – New Zealand
The Ministry of Health is the government’s primary agent in New Zealand’s health and disability system, and has overall responsibility for the management and development of that system. The Ministry of Health aims to ensure New Zealanders live longer, healthier and more independent lives.

National Centre in HIV Social Research (NCHSR)
The National Centre in HIV Social Research (NCHSR) at The University of New South Wales conducts multidisciplinary research regarding the social and behavioural aspects of HIV, sexually transmissible infections and viral hepatitis. NCHSR has been in operation since 1990 when it was established with funding from the Australian Government Department of Health and Ageing.
National Hepatitis B Alliance
The National Hepatitis B Alliance’s mission is to put hepatitis B on the National health agenda in order to improve the lives of people living with hepatitis B and reduce transmission of hepatitis B.

The Alliance aims to provide a forum for those working in hepatitis B to exchange ideas, findings and information. It seeks to increase awareness and understanding of hepatitis B in the health and research workforce, the community and in government. It aims to provide a collective voice speaking with clarity and authority on priorities for action related to hepatitis B, and to use this voice to improve outcomes for people living with hepatitis B, as well as to encourage government at all levels to respond appropriately to the challenges of hepatitis B.

New Zealand Society of Gastroenterology
Formed in 1966 as an off-shoot of the Royal Australasian College of Physicians the NZSG is now open to all physicians, surgeons, scientists and allied health workers interested in the broadest aspects of Gastroenterology. With over 140 current members the society exists for ‘…the advancement of knowledge,…promotion of improved standards in the practice and research in Gastroenterology and allied subjects’ as well as “…to conduct scientific and educational meetings” and “…foster national and international links with Societies and relevant Associations’. We are therefore very happy to be a co-sponsor of this Australasian meeting.

Victorian Infectious Diseases Reference Laboratory (VIDRL)
The Victorian Infectious Diseases Reference Laboratory (VIDRL) is the state’s largest public health reference laboratory with core responsibilities in virology and mycobacteriology. VIDRL fulfils a number of state, national and international roles, and is a designated WHO Regional Reference Laboratory for Hepatitis B.
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INTERNATIONAL KEYNOTE SPEAKERS

Professor Peter Simmonds
Professor of Virology, Centre for Infectious Diseases, University of Edinburgh, Scotland

Professor Peter Simmonds has been a Professor of Virology at Edinburgh University since 1995. His varied research programme embraces a common theme of the evolution and epidemiology of virus infections, and interactions with their hosts. Current research investigations range from evolutionary studies of virus variability and recombination, molecular epidemiology and investigations of viral pathogenesis and interactions of virus with host cell defences. Much of this work has been associated with the development of a variety of molecular biology and bioinformatic analysis techniques.

Professor Kimberly Page
Professor in Residence, Epidemiology & Biostatistics Department, University of California, San Francisco, USA

Professor Kimberly Page is a Professor in Residence in the Department of Epidemiology and Biostatistics at the University of California San Francisco (UCSF). She holds joint appointments in the Global Health Sciences group, Department of Medicine, in the School of Dentistry at UCSF, and at the San Francisco Veteran’s Administration Medical Centre (SFVAMC) Department of Medicine. Dr. Page is an infectious disease epidemiologist; her research is principally focused on HIV and hepatitis C virus (HCV) infections, principally prevention and biomedical intervention research. She is the PI of several large NIH funded grants, with research in the U.S. and also involving international collaborations. In addition to research, she is a Faculty Lead in the UCSF International training program, mentoring scientists and students in South and Central America as well as Southeast Asia.

Professor Tim Rhodes
Professor of Public Health Sociology and Director of the Centre for Research on Drugs and Health Behaviour, London School of Hygiene and Tropical Medicine, England

Professor Tim Rhodes is a Professor in Public Health Sociology and Director of the Centre for Research on Drugs and Health Behaviour at the London School of Hygiene and Tropical Medicine (University of London), and Conjoint Professor of the Sociology of Health at the University of New South Wales. He leads a programme of mixed-method qualitative research focused on understanding how social environments shape the health harms linked to drug use as well as how these are narrated. Current studies include: qualitative longitudinal research investigating therapeutic relationships and access to harm reduction among people who inject drugs in Kenya; qualitative studies investigating the experience of HIV, tuberculosis and hepatitis C treatment access in transitional Europe; qualitative longitudinal research with children and families affected by drug use and HIV in the UK, Uganda and Zimbabwe; and with Magdalena Harris, a life history study of how people who inject drugs in the UK avoid hepatitis C. He has published widely on the social relations of HIV and hepatitis C risk among people who inject drugs. He is Editor-In-Chief of the International Journal of Drug Policy.
Ms Janet Catt MSc RGN

Lead Nurse Specialist Practice, Royal Free Hospital, London

Ms Janet Catt MSc RGN is qualified as a Registered Nurse in 1990. Her nursing experience was initially in the fields of oncology, haematology, palliative care. In 1995/6 she directed her interest into public health, and qualified as a health visitor, which she found to be one of the most enjoyable and major learning experiences in her nursing career.

At the beginning of 2000, she again changed her career pathway and began work as a clinical nurse specialist in Blood Borne viruses, working between hospital and community developing outreach services/clinics for patient/clients with a substance misuse and viral hepatitis. In 2008 to the current time, Janet has been working as Lead Nurse specialist practice at the Royal Free Hospital in London, a tertiary referral centre with a diverse population treating viral hepatitis.

Professor Henry Lik Yuen Chan

Director, Cheng Suen Man Shook Centre for Hepatitis Research; Director, Center for Liver Health, Department of Medicine and Therapeutics, The Chinese University of Hong Kong

Professor Henry Lik Yuen Chan is a Professor in the Department of Medicine and Therapeutics, Director of Cheng Suen Man Shook Centre for Hepatitis Research and Director of the Centre for Liver Health of the Chinese University of Hong Kong. He has published more than 230 peer-reviewed papers and is among the top 1% most cited investigators under Clinical Medicine in the Institute for Scientific Information (ISI). He has received numerous research awards and was selected as one of the Ten Outstanding Young Persons in Hong Kong in 2008.

Dr Jordan Feld MD MPH

Assistant Professor of Medicine, University of Toronto Hepatologist, Toronto Western Hospital Liver Centre Scientist, Sandra Rotman Centre for Global Health, Toronto, Canada

Dr Jordan Feld MD MPH is an Assistant Professor of Medicine at the University of Toronto where he works as a hepatologist at the Toronto Western Hospital Liver Centre and runs a laboratory at the McLaughlin-Rotman Centre for Global Health. Following his clinical training, he spent 4 years doing clinical and laboratory research in the Liver Diseases Branch of the National Institutes of Health. His laboratory work focuses on understanding treatment non-response in hepatitis C infection and more broadly on understanding the antiviral immune response with the goal of developing new strategies for the treatment of viral hepatitis.
AUSTRALIAN AND NEW ZEALAND KEYNOTE SPEAKERS

Professor Paul Ward
Head, Discipline of Public Health, School of Medicine, Flinders University, South Australia; Honorary Professor, Centre for Values, Ethics and Law in Medicine (VELiM), University of Sydney, Australia

Professor Paul Ward is Head of the Discipline of Public Health at Flinders University, Australia. Paul is a social scientist with a background in medical sociology, geography and health services research. Paul’s main research interests are around socio-spatial inequalities and inequities in health, medicine usage and the provision of health and social care. Paul also has a particular interest in research around lay and professional perceptions, knowledge and understandings of health, healthcare, medicines, risk and trust. Paul is Chair of the Social and Behavioural Research Ethics Committee at Flinders University.

Professor Chris Cunningham
Professor & Director, Research Centre for Māori Health & Development, Massey University, Wellington, New Zealand

Professor Chris Cunningham of the Ngati Toa and Ngati Raukawa tribes of New Zealand (NZ), is Professor of Maori Health and has been Director of the Research Centre for Maori Health & Development at Massey University’s Wellington Campus since 1996. He has a strong background in both policy development and research. He has worked as a Senior Analyst with the Ministry of Maori Affairs, Education Review Office and Ministry of Health. He has been significantly involved in governance of publicly funded organisations, being a Director of the Health Research Council of NZ, the Hutt Valley District Health Board, and the Quit Group. He is also a trustee of the NZ Cancer Control Trust and Hepatitis Foundation of NZ, a former member of the Bioethics Council of NZ, and former Chair of the NZ Drug Foundation. He currently serves on the Lottery Health Distribution Committee and Chairs the Maori Knowledge and Development Panel of the Performance Based Research Fund (PBRF).

Chris is Director of two major Maori research programmes and is currently supervising 14 doctoral students and 5 post-doctoral students researching Maori health and development. His major research interests include non-communicable diseases (especially hepatitis B/C, cancer, diabetes and insulin resistance), whanau (family) health & development, ageing, longitudinal research, school-based interventions in physical activity and nutrition, and housing & health.

During 2010 he was Independent Advisor to the NZ Government’s Maori Affairs Select Committee Inquiry into the Tobacco Industry in Aotearoa and the Consequences of Tobacco Use for Maori.
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Gilead Sciences Pty Ltd. Level 1, 128 Jolimont Road, East Melbourne VIC 3002 Australia.
ABN 71 072 611 708. Phone: 61 3 9272 4400 Call Toll Free: 1800 806 112.
GENERAL INFORMATION

Disclaimer
The information in this brochure is correct at the time of printing. The Conference Secretariat reserves the right to change any aspect of the program without notice.

Venue
SKYCITY Auckland
Corner Victoria and Federal Streets
Auckland, New Zealand
Phone: 0800 SKYCITY (08 007 592 489) – this is toll free within NZ
Or: +64 9 363 6000
Fax: +64 9 363 6383
Email: enquiries@skycity.co.nz

The venue will host the Conference sessions, poster presentations, the breakfast session, Conference day catering and the trade exhibition.

Registration Desk
All enquiries should be directed to the registration desk in Marlborough Room 2 located on Level 5 and open at the following times:
- Sunday 9 September 2012: 4.00pm – 6.00pm
- Monday 10 September 2012: 7.30am – 6.30pm
- Tuesday 7 September 2012: 7.00am – 6.00pm
- Wednesday 8 September 2012: 7.30am – 1.00pm

Speaker Preparation Room
A speaker preparation room will be located next to the registration desk located on Level 5. This room will be open at the following times:
- Sunday 9 September 2012: 4.00pm – 6.00pm
- Monday 10 September 2012: 7.00am – 6.00pm
- Tuesday 11 September 2012: 7.00am – 6.00pm
- Wednesday 12 September 2012: 7.00am – 11.00am

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 breakfast or early morning session.

Exhibition
The exhibition will be located in the SKYCITY Auckland Rooms and Foyer area, located on Level 4, these rooms also contain the posters and all the catering.

The exhibition will be open during the following hours:
- Monday 10 September 2012: 11.00am – 8.00pm
- Tuesday 11 September 2012: 7.30am – 4.00pm

Poster Displays
Posters will be displayed on Monday 10 and Tuesday 11 September, grouped by disciplines in the SKYCITY Auckland Rooms located on Level 4.
Internet Hub
An Internet hub, proudly supported by the Conference Partners is located in the Exhibition Area. The computers will allow delegates to:

- Complete an online Conference evaluation survey
- Print a certificate of attendance
- View the abstract search database which allows you to view abstracts and Poster PDFs
- View the delegate list

Wireless Internet
Wireless Internet will be available in the Exhibition area on Monday and Tuesday during lunch breaks only.

Alternatively the internet hub will have a number of laptops and iPads available for your use.

Catering
Morning teas, afternoon teas and lunches will be held in the Exhibition Hall each day. Lunches will be served as an informal stand-up buffet. Dietary requirements noted on your registration form have been passed on to the catering staff. Vegetarian options will be available on the buffets. A separate buffet station will be available for other specific dietary requirements such as vegan, halal, gluten intolerance. Please ask the Venue staff at this station for assistance.

At the conference dinner, special dietary requirements such as vegetarian, gluten free meals will only be available for those who have previously advised during the registration process. If you wish to have a vegetarian meal or other and have not booked one, please see the staff at the Registration Desk on Monday 10 September to advise.

Quiet/Prayer Room
The Coromandel Room on Level 5 is available for use as a quiet room/prayer room for the duration of the conference.

Emergency and Evacuation Procedures
In the event of an emergency, such as a fire, the Venue staff will direct delegates accordingly.

Smoking
This Conference has a no smoking policy.

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

Messages
A message board is situated near the Conference Registration Desk and should be checked regularly.

The Conference Organisers do not accept responsibility for personal mail. Please have all mail sent to your accommodation address.
Luggage Storage
For guests that are staying in the hotel, their luggage can be stored with Concierge. Delegates may choose to store their luggage in the dedicated luggage store room located on Level 5 however this room will not be securely locked and delegates are advised that luggage left unattended will be at their own risk.

Taxis
Taxis are readily available from the Federal Street entrance to the Convention Centre.

Parking
A dedicated SKYCITY car park for Convention Centre guests is located at 65 Federal Street, open 24 hours, 7 days and only a minute’s walk to the SKYCITY Auckland Convention Centre. SkyCITY also has car parking facilities located on P1 – P6 of the complex. There are 3 entrances and exits to the car park. Federal Street, Hobson Street, Nelson Street. Open 24 hours, 7 days a week.

Name Badges
For security purposes, all attendees must wear their name badge at all times while in the Conference venue. Entrance to the exhibition will be limited to badge-holders only. If you misplace your name badge, please advise staff at the registration desk.

Delegate List
A participant list with name, organisation and state/country will be supplied to all exhibitors and delegates at the Conference (excluding those who indicated during registration they did not wish to be named on the delegate list). The delegate list will also be viewable by delegates at the Internet Hub.

RACGP Points
An application has been made to have attendance recognised for Quality Improvement & Continuing Professional Development. If you wish to claim these points please ensure you have completed your RACGP QI&CPD number during the registration process, complete the evaluation survey and sign the RACGP attendance sheet at the registration desk each day.

HCV Prescriber CME Points
HCV prescribers who are accredited in NSW/ACT/VIC/SA will receive one (1) Prescriber CME point per day at the Conference, with a maximum of two (2) Prescriber CME points for attending the entire conference.

RNZCGP Points
An application has been made to have attendance recognised with RNZCGP for CME Points.

Evaluation Surveys
Evaluation Surveys will be available on-line at the Internet Hub. All delegates will be emailed after the Conference with the online survey link. In order to improve the Conference we kindly request your feedback.

Liability/Insurance
In the event of industrial disruptions or natural disasters the Conference secretariat cannot accept responsibility for any financial or other losses incurred by delegates. Nor can the Secretariat take responsibility for injury or damage to property or persons occurring during the Conference or associated activities. Insurance is the responsibility of the individual delegate.
The Conference Partners, supporters and sponsors are proud to support the following participants through the Conference Scholarship Program to attend the Conference:

<table>
<thead>
<tr>
<th>First Name</th>
<th>Last Name</th>
<th>Organisation</th>
<th>Country</th>
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<tbody>
<tr>
<td>Bilal</td>
<td>Ahmed</td>
<td>Aga Khan University</td>
<td>PAKISTAN</td>
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<tr>
<td>Justine</td>
<td>Block</td>
<td>Deakin University</td>
<td>AUSTRALIA</td>
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<tr>
<td>Carina</td>
<td>Burns</td>
<td>Liverpool Hospital, Gastroenterology Department</td>
<td>AUSTRALIA</td>
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<tr>
<td>Crystal</td>
<td>Connelly</td>
<td>Department of Corrective Services</td>
<td>AUSTRALIA</td>
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<tr>
<td>Alexandra</td>
<td>Cranston</td>
<td>LabPlus- Auckland City Hospital</td>
<td>NEW ZEALAND</td>
</tr>
<tr>
<td>Michelle</td>
<td>Cutmore</td>
<td>Hunter New England Local Health District</td>
<td>AUSTRALIA</td>
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<tr>
<td>Pooja</td>
<td>Deshpande</td>
<td>School of Anatomy, Physiology and Human Biology, University of Western Australia</td>
<td>AUSTRALIA</td>
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<tr>
<td>Mark</td>
<td>Fuller</td>
<td>Lismore Liver Clinic</td>
<td>AUSTRALIA</td>
</tr>
<tr>
<td>Jan</td>
<td>Hagley</td>
<td>Opioid Treatment Service CCDHB</td>
<td>NEW ZEALAND</td>
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<tr>
<td>Christine</td>
<td>Janssen</td>
<td>Liver Clinic, St George Hospital</td>
<td>AUSTRALIA</td>
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<tr>
<td>Rhondda</td>
<td>Lewis</td>
<td>Cairns Sexual Health Service</td>
<td>AUSTRALIA</td>
</tr>
<tr>
<td>Pauline</td>
<td>Marshall</td>
<td>Opioid Treatment Service In Auckland (AOTS)</td>
<td>NEW ZEALAND</td>
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<td>Karen</td>
<td>Maskell</td>
<td>North West Area Health Service DHHS</td>
<td>AUSTRALIA</td>
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<tr>
<td>Sandi</td>
<td>Mitchell</td>
<td>Sydney Medical School, University of Sydney</td>
<td>AUSTRALIA</td>
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<tr>
<td>Cheryl</td>
<td>Nevin</td>
<td>Queensland Health - NSP - Alcohol Tobacco And Other Drugs</td>
<td>AUSTRALIA</td>
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<tr>
<td>Jeffrey</td>
<td>Wegener</td>
<td>NSW Users and AIDS Association</td>
<td>AUSTRALIA</td>
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<tr>
<td>Irena</td>
<td>Petrovski</td>
<td>Liverpool Hospital</td>
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<tr>
<td>Michelle</td>
<td>Santos</td>
<td>Royal Prince Alfred Hospital</td>
<td>AUSTRALIA</td>
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<tr>
<td>Janice</td>
<td>Scott</td>
<td>South Australian Prison Health Service</td>
<td>AUSTRALIA</td>
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<tr>
<td>Kelly</td>
<td>Somes</td>
<td>Gastroenterology Liverpool</td>
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<tr>
<td>Adam</td>
<td>Spinks</td>
<td>S.H.Op101- Ipswich Sexual Health Service</td>
<td>AUSTRALIA</td>
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<tr>
<td>Benjamin</td>
<td>Stewart</td>
<td>School of Psychology, University of Adelaide</td>
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<tr>
<td>Peter</td>
<td>Waples-Crowe</td>
<td>Victorian Aboriginal Community Controlled Health Organisation Inc.</td>
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<td>Pamela</td>
<td>Wood</td>
<td>Hep C Australasia</td>
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VENUE FLOOR PLANS – SKYCITY AUCKLAND

Ground Level
LEVEL 4 – Exhibition and Catering in Auckland Rooms
LEVEL 5 – Session Rooms and Registration
You are cordially invited to the Roche satellite symposia:

Expanding frontiers for effective management of chronic hepatitis

1.15pm - 2.30pm, Monday 10th September 2012, Room: New Zealand 1

Agenda

Chair: Dr Dominic Ray-Chaudhuri
1.15pm - 1.20pm Opening remarks from the Chair

HCV RNA quantitation with new DAAs – Professor Edward Gane
1.20pm - 1.40pm

Utility of HBsAg and HBV DNA quantitation – Professor Henry Lik Yuen Chan
1.40pm - 2.00pm

Diagnostic assays optimised for clinical decision making – Ms Ahila Padmanathan
2.00pm - 2.15pm

Q and A
2.15pm - 2.25pm

Closing remarks from the Chair
2.25pm - 2.30pm

Visit our exhibition stand - Booth number: 12
ASSOCIATED EVENTS

Pre-Conference Hepatology Nursing Workshop
10.30am – 5.00pm, Sunday 9 September 2012
SKYCITY Convention Centre, New Zealand Room 3 and 4, Level 5

Satellite Session: Roche Diagnostics: Expanding frontiers for effective management of chronic hepatitis
1.15pm – 2.30pm, Monday 10 September 2012
SKYCITY Convention Centre, New Zealand Room 1, Level 5
This first part of this symposium aims to highlight how advances in knowledge gained from accurate quantification of HBsAg and HBV DNA levels can be used to optimize patient management. The faculty will draw on their expert knowledge and experience to discuss appropriate monitoring and management strategies, both prior to and during therapy.

The second part highlights the burden of HCV and how sensitive screening and monitoring assays can be used to optimise patient management. In addition, the faculty will discuss appropriate treatment options for both treatment-naïve and treatment-experienced patients.

1.15pm – 1.45pm, Monday 10 September 2012
SKYCITY Convention Centre, New Zealand Room 3, Level 5

“Afternoons with Max Marshall: a short film exploring drugs, discrimination and the media”. Produced by the Australian Injecting and Illicit Drug Users League (AIVL), this quietly challenging portrayal explores the layers of discrimination that people who inject drugs face in their daily lives, and the role the media play in exacerbating the eventuating social exclusion.

This exclusion means that people who use drugs are reluctant to access any medical service, including hepatitis C treatment and care. Given that: the injecting drug using community is experiencing the results of over thirty years of living with hepatitis C; we are currently witnessing increases in end-stage liver disease and liver cancer; and, if we hope to stabilise the number of people who will die we now need to treble our current treatment numbers - we must name and acknowledge that entrenched stigma and discrimination are at the root of lack of treatment access. We will make no gains improving the life expectancy of people who inject drugs and living with hepatitis C if these people will not come forward, or if they do access services, they experience extremely poor treatment which drives them away again.

The film screening will be accompanied with a brief presentation by AIVL’s representatives Annie Madden and Jude Byrne. Annie and Jude will give an overview of the film’s development and get the audience thinking about their own and the community’s thoughts in relation to drug users.

Welcome Reception and Poster Viewing Evening
6.20pm – 8.00pm, Monday 10 September 2012
SKYCITY Convention Centre, Exhibition Hall, Auckland Rooms, Level 4

All delegates are invited to enjoy a relaxing end to the first day of the Conference. This is also the dedicated time where you will have the opportunity to meet with the poster presenters. It is an opportunity to catch up with old friends and make new ones whilst enjoying drinks and canapés.
Satellite Session: BMS Symposium: A Commitment to Liver Health
7.30am – 9.00am, Tuesday 11 September 2012
SKYCITY Convention Centre, New Zealand Room 3 and 4, Level 5
BMS is committed to Liver Health.
This symposium will focus on the extensive Entecavir body of evidence in the real world setting in addition to giving you a snapshot of our exciting Hepatitis C product portfolio.

Satellite Session: ALAF: Implementing National and Regional Strategies on HIV/Viral Hepatitis Co-infection in Asia
12.45pm – 1.45pm, Tuesday 11 September 2012
SKYCITY Convention Centre, New Zealand Room 1, Level 5
HIV, viral hepatitis and co-infection continues to be one of the major health issues in the Asian region. 50 to 90 percent of people infected with HIV in Asia are also co-infected with hepatitis, and treating viral hepatitis can significantly improve health outcomes for these people. In February 2011, 13 leaders in HIV and viral hepatitis management from six different Asian countries took part in Round 8 ALAF-ASHM training program concerning HIV and Viral Hepatitis Co-infeciton Management in Asia. In this session, fellows from Cambodia, Indonesia, Lao, Sri Lanka, Thailand and Vietnam will present on the situation in their country and the successes and challenges of the strategic responses developed to contribute to decreased patient morbidity.

Satellite Session: The e health journey, from you to PCEHR and everything in between
12.45pm – 1.45pm, Tuesday 11 September 2012
SKYCITY Convention Centre, New Zealand Room 4, Level 5
This presentation will give a high level overview of NEHTA, a patients journey and pragmatic information on who, what, where and why. The NEHTA work program has included the develop of a service to enable health care providers to seamless send information to each other and creates an environment to share this information with their patients. The establishment of this capability will have a significant impact on the provision of patient care and provides both care providers and consumers with an opportunity to benefit. The purpose of this presentation is to demystify, engage and inform.

Conference Dinner
7.00pm, Tuesday 11 September 2012
Voyager New Zealand Maritime Museum, Corner Quay and Hobson Streets, Viaduct Harbour, Auckland
The Conference Dinner will be a great opportunity for delegates to catch up with colleagues and network in a relaxed atmosphere. Delegates will enjoy a lovely three course meal and drinks at the beautiful Voyager Maritime Museum. With expansive views across the sparkling Waitemata Harbour this will be a great evening of fine food, New Zealand wine and a good opportunity for networking with colleagues.
This event is sold out. Please ensure you attend or provide your ticket to the secretariat if you cannot on the day (no refunds will be available).
## EXHIBITION BOOTH LISTING

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<tr>
<th>NUMBER</th>
<th>COMPANY NAME</th>
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<td>The Kirby Institute</td>
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<td>Hepatitis Foundation of New Zealand</td>
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<td>3</td>
<td>New Zealand Needle Exchange Programme</td>
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<td>Gilead Sciences</td>
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<td>CEVHAP</td>
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<td>NCHSR</td>
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EXHIBITION FLOOR PLAN
# EXHIBITION DIRECTORY

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<th>The Kirby Institute</th>
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| 1 | **The Kirby Institute**  
The Kirby Institute for infection and immunity in society, established in 1986, is responsible for the co-ordination of national surveillance programs, clinical research and clinical trials. The Institute is divided into 11 distinct research programs across a broad range of infectious diseases and marginalised communities.  
The Viral Hepatitis Clinical Research Program is a rapidly expanding area of research within the Kirby Institute. Program areas of interest are; natural history of newly acquired Hepatitis C (HCV); treatment of acute and chronic HCV particularly in the setting of injection drug use; HIV/HCV and HIV/HBV coinfection and HCV reinfection, superinfection and protective immunity.  
**The Kirby Institute** (formerly the National Centre in HIV Epidemiology and Clinical Research)  
University of New South Wales  
CFI Building, Cnr Boundary and West Streets  
Darlinghurst NSW 2010 Australia  
Tel: +61 2 9385 0900  
Fax: +61 2 9385 9214  
Web: www.kirby.unsw.edu.au |
| 2 | Hepatitis Foundation of New Zealand |
|   | The Hepatitis Foundation of New Zealand is a charitable trust with the aim to promote positive health outcomes to people living with chronic hepatitis B and C in New Zealand.  
For over 10 years, the Foundation has been the national provider for long term follow-up of people living with chronic hepatitis B and more recently, chronic hepatitis C. Over 13,500 people are enrolled in the programme, with an annual drop off rate of less than 5%.  
The Foundation is also set to launch a HCV pilot, aimed at improving services to those chronically infected.  
**The Hepatitis Foundation of NZ**  
Tel: +64 7 579 0923  
Free Phone: 0800 33 20 10  
Web: www.hepfoundation.org.nz |
### New Zealand Needle Exchange Programme

The NZ Needle Exchange Programme consists of 21 dedicated Needle Exchanges and 190 participating pharmacies and alternate outlets throughout NZ.

80% of our annual distribution is through the peer service model situated at exchanges; introducing free 1-4-1 distribution in 2004 has seen a reduction in Hepatitis C amongst needle exchange attendees from 70% to 50% in 2009. Cost benefit analysis reveals the NEP to be one of the most effective public health interventions ever undertaken in NZ.

Our aim is to maintain the low level of HIV prevalence, reduce the incidence and prevalence of HCV, and ensure that our service keeps pace with harm reduction local and international developments.

**Needle Exchange Programme**

National Office  
136 St Asaph Street  
Christchurch  
Phone: +64 3 366 9402  
Fax: +64 3 366 9405  
Email: charles@needle.co.nz liz@needle.co.nz  
Web: www.needle.co.nz www.hepc.co.nz

### Australian Injecting & Illicit Drug Users League (AIVL)

AIVL is the voice of those most affected by hepatitis C in Australia: As the national peak drug user organisation, AIVL has been representing people with a history of injecting drug use for over 20 years. AIVL and its member organisations are peer-based – run by and for people who are at risk of and/or living with hepatitis C and hepatitis B.

If you want first-hand information and the perspective of those directly affected, then AIVL and its member organisations have what you’re looking for.

AIVL’s members include:

- NSW – NUAA: www.nuua.org.au
- ACT – CAHMA: cahma@aivl.org.au
- QLD – QuIVVA: www.quivva.org.au
- QuIHN: www.quihn.org.au
- VIC – HRVic: www.hrvic.org.au
- NT – NTAHC: www.ntahc.org.au
- WA – WASUA: www.wasua.com.au

**Australian Injecting & Illicit Drug Users League (AIVL)**

Tel: +61 2 6279 1600  
Fax: +61 2 6279 1619  
Email: info@aivl.org.au  
Web: www.aivl.org.au  
Facebook: www.fb.com/aivlinc  
Twitter: www.twitter.com/aivl
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<tr>
<th>5</th>
<th><strong>Siemens</strong></th>
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<tr>
<td><strong>SIEMENS</strong></td>
<td>The Siemens Healthcare Sector is one of the world’s largest suppliers to the healthcare industry and a trendsetter in medical imaging, laboratory diagnostics, medical information technology and hearing aids. Siemens offers its customers products and solutions for the entire range of patient care from a single source – from prevention and early detection to diagnosis, and on to treatment and aftercare. By optimizing clinical workflows for the most common diseases, Siemens also makes healthcare faster, better and more cost-effective. Siemens Healthcare employs some 48,000 employees worldwide and operates around the world. In fiscal year 2010 (to September 30), the Sector posted revenue of 12.4 billion euros and profit of around 750 million euros. For further information please visit: <a href="http://www.siemens.com/healthcare">www.siemens.com/healthcare</a>.</td>
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<th>6</th>
<th><strong>Auckland Clinical Studies</strong></th>
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<tr>
<td><strong>ACS</strong></td>
<td>Auckland Clinical Studies (ACS) is an early-phase Clinical Pharmacology Unit based in Auckland, New Zealand. ACS works in close cooperation with its Christchurch-based sister company, CCST. Between the two units, we have 40 beds dedicated to Phase 1 &amp; 2 clinical studies and have conducted more than 180 trials for large and small pharma and biotech companies. We are internationally recognised for our work in hepatitis but also work in nephrology, oncology, dermatology and RA patients as well as conducting renal and hepatic impairment studies. In healthy volunteers we have significant experience with Entry-in-Human, SAD, MAD, BA/BE and biosimilar studies. We also offer umbrella protocols from EIH right through to patient groups saving time to POC. Our pharmacy offers compounding services and our lab can conduct complex PD analyses. New Zealand has a supportive regulatory and IEC environment without need for IND; we usually have studies up and running within 4-6 weeks of receipt of final documentation. We offer physician-led, cost-effective, quality clinical research.</td>
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<td><strong>Hepatitis Australia</strong></td>
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<td>Hepatitis Australia was incorporated in 1997 as the peak non-government organisation for Australia’s community response to viral hepatitis. Our mission is to ensure the needs of Australians affected by or at risk of viral hepatitis are met. We do this by providing national leadership and advocacy on viral hepatitis and forming partnerships with organisations that share our goals. Working in conjunction with our members, the eight state and territory hepatitis organisations, Hepatitis Australia provides a coherent national voice to inform and influence national policy and practice. Our work is also directed at: community education on viral hepatitis and liver health literacy, strengthening the capacity of the community workforce to engage with priority populations and creating a comprehensive community-based response consistent with the national strategies.</td>
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<td><strong>Hepatitis Australia</strong></td>
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<tr>
<td></td>
<td>PO Box 716, Woden, ACT 2606, Australia</td>
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<tr>
<td></td>
<td>Tel: 02 6232 4257</td>
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<td></td>
<td>Fax: 02 6232 4318</td>
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<tr>
<td></td>
<td>Web: <a href="http://www.hepatitisaustralia.com">www.hepatitisaustralia.com</a></td>
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<td></td>
<td>Email: <a href="mailto:admin@hepatitisaustralia.com">admin@hepatitisaustralia.com</a></td>
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<td></td>
<td>Facebook: <a href="http://www.facebook.com/HepAus">www.facebook.com/HepAus</a></td>
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<th><strong>Bristol-Myers Squibb</strong></th>
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<td>Bristol-Myers Squibb is a global biopharmaceutical company firmly focused on its mission to discover, develop and deliver innovative medicines that help patients prevail over serious diseases. Around the world, our medicines help millions of people in their fights against cancer, cardiovascular disease, diabetes, hepatitis B, HIV/AIDS, rheumatoid arthritis and psychiatric disorders.</td>
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<td>QIAGEN is a global leader in sample and assay technologies for life sciences, applied testing and molecular diagnostics. Its products are considered standards that comprise complete solutions from sample to result. QIAGEN offers the broadest portfolio of molecular diagnostic assays for infectious diseases including the only test for human papillomavirus (HPV), which has both FDA and CE-approvals. The company has developed a comprehensive portfolio of more than 500 proprietary, consumable products and instruments for sample collection, nucleic acid and protein handling, separation, purification, detection, and open and target specific assays.</td>
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| 10 | **FibroScan®**  

To date, 1,000 FibroScan® devices have been installed worldwide. FibroScan® is used to diagnose 1.5 million men, women and children every year.  
As an adjunct to biopsy, FibroScan® aids in decision making and enhances both patient and practice management.  
VCTE™ is a proprietary elastography technology developed by Echosens. VCTE™ allows for measurement of tissue elasticity with quantitative, reproducible, real time results expressed in kPa (kiloPascal) and is a standard recognized by hepatologists and validated by a large number of publications.  
MTA has approximately 50 Fibroscan® installations throughout New Zealand and Australia, it has been a major influence in reducing Liver biopsies with substantial cost savings and efficacy. |
|---|---|
| 11 | **MSD**  

Today’s MSD is a global healthcare leader working to help the world be well. MSD is a tradename of Merck & Co., Inc., with headquarters in Whitehouse Station, NJ, U.S.A. Through our prescription medicines, vaccines, biologic therapies, and consumer care and animal health products, we work with customers and operate in more than 140 countries to deliver innovative health solutions. We also demonstrate our commitment to increasing access to healthcare through far-reaching policies, programs and partnerships. For more information, visit www.msd-australia.com.au.  
(Note: For New Zealand, please visit www.msd.co.nz)  
**MSD Australia**  
Level 4, 66 Waterloo Road  
North Ryde, NSW 2113  
Australia  
Ph: +61 2 8988 8000 |
12 Roche

Headquartered in Basel, Switzerland, Roche is a leader in research-focused healthcare with combined strengths in pharmaceuticals and diagnostics. Roche is the world's largest biotech company with truly differentiated medicines in oncology, virology, inflammation, metabolism and CNS. Roche is also the world leader in in-vitro diagnostics, tissue-based cancer diagnostics and a pioneer in diabetes management. Roche's personalised healthcare strategy aims at providing medicines and diagnostic tools that enable tangible improvements in the health, quality of life and survival of patients. In 2010, Roche had over 80,000 employees worldwide and invested over 9 million Swiss francs in R & D.

Roche Diagnostic tests
New Zealand: Letitia O'Dwyer, Medical Marketing Manager
Roche Diagnostics NZ Ltd;
DDI: +64 9 259 5132
Email Letitia.odwyer@roche.com
Australia: Christian Hawkins, Product Manager
Virology Molecular Diagnostics, Roche Diagnostics Australia Pty Ltd;
Tel: +61 2 9860 2374
Email christian.hawkins@roche.com

Roche Pharmaceutical products
New Zealand: Sangita Ranchhod, Pegasys Product Manager
Roche Products NZ Ltd; Ph: +64 9 635 1500
Email sangita.ranchhod@roche.com
Australia: Kathleen Jeffreys, Brand Manager at Roche Products Australia Pty Ltd:
Tel: +61 2 9454 9163
Email kathleen.jeffreys@roche.com

13 Gilead Sciences

Gilead's mission is to advance patient care by developing therapeutics to treat life-threatening diseases. We apply biopharmaceutical science to create medicines to treat conditions including HIV/AIDS (Eviplera® (tenofovir disoproxil fumarate & emtricitabine & rilpivirine), ATRIPLA® [tenofovir disoproxil fumarate & emtricitabine & efavirenz], Truvada® [emtricitabine & tenofovir disoproxil fumarate], Emtriva® [emtricitabine], Viread® [tenofovir disoproxil fumarate]), chronic hepatitis B (Viread® [tenofovir disoproxil fumarate], Hepsera® [adefovir dipivoxil]), and systemic fungal infections (AmBisome® [liposomal amphotericin B])

Gilead Sciences Pty Ltd
Level 1, 128 Jolimont Road, East Melbourne, Victoria, 3002, Australia
Phone: +61 (0)3 9272 4400
Fax: +61 (0)3 9272 4411
Over the last half-century, we have brought together a family of innovative pharmaceutical companies all with one overarching mission: to address and solve some of the most important unmet medical needs of our time.

Janssen companies are focused on developing groundbreaking treatments in five major therapeutic areas: Neuroscience, Infectious Diseases, Oncology, Immunology, and Cardiovascular/Metabolism, and our product portfolio addresses other critical areas as well. We are people helping people — we work closely together to harness our combined knowledge and resources, leverage the power and promise of outstanding science, and enhance the length and quality of life for people throughout the world. At Janssen, we passionately pursue science for the benefit of patients everywhere.

Janssen-Cilag Pty Limited
Address: 1-5 Khartoum Rd, North Ryde NSW 2113 Australia
Phone: 1800 226 334
Fax: +61 2 8875 3300

Abbott Molecular, a subsidiary of Abbott, is an emerging leader in molecular diagnostics – the analysis of DNA, RNA, and proteins at the molecular level. Our instruments and reagents detect pathogens and subtle changes in patients’ genes and chromosomes, which permits earlier diagnoses, the selection of appropriate therapies, and improved monitoring of disease progression.

Our real-time PCR instruments and assays reduce the time required to complete key infectious diseases tests, monitoring patients on HIV & Hepatitis therapies. Patented comparative genomic hybridization (CGH) technology can be used to analyze multiple targets in a single test.

Our reagents are also being used and validated by labs to detect cancers, the genetic causes of mental retardation, inheritable diseases, and high-resolution HLA (human leukocyte antigen) transplant testing. We’re exploring the application of novel biomarkers for determining predisposition to certain diseases including myocardial infarction, rheumatoid arthritis, and others.

Our multiple technology platforms can help deliver greater value to our customers – and to patients. We can efficiently provide multiple solutions from a single source. Automated instrument systems with high throughput capabilities and broad test menus help our customers improve workflows, simplify training, and reduce costs. And our alliance with Celera Diagnostics helps ensure a steady stream of new products that reflect continuing advances in genomic diagnostics. Because delivering better molecular products is our way of life.

We believe that molecular diagnostics hold the promise of personalized health care and longer, healthier lives. And we are committed to bringing high-quality, innovative molecular products to the physician, the laboratory, and the patient.
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<tr>
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<th>Coalition to Eradicate Viral Hepatitis in Asia Pacific (CEVHAP)</th>
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<tr>
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<th>The National Centre in HIV Social Research (NCHSR)</th>
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## MONDAY 10 SEPTEMBER

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
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<tbody>
<tr>
<td>7.30am</td>
<td>Registration, Level 5</td>
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<tr>
<td>8.30am-11.00am</td>
<td>Opening Ceremony and Plenary: 1</td>
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<tr>
<td></td>
<td>Room: New Zealand 1 and 2, Level 5</td>
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<td></td>
<td>Chairs: Ed Gane and John Hornell</td>
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<td>8.30am</td>
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<td>Ngati Whātua, Kaumatua David Hillman (He Kamaka Oranga)</td>
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<tr>
<td>9.00am</td>
<td>Opening address</td>
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<td></td>
<td>The Hon. Tony Ryall, Health Minister, New Zealand</td>
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<tr>
<td>9.15am</td>
<td>Introduction by Representative of the 2012 Viral Hepatitis Conference Partners</td>
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<tr>
<td>9.20am</td>
<td>Professor Edward Gane, Deputy Director, New Zealand Liver Transplant Unit, Auckland, New Zealand</td>
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<tr>
<td>9.20am-9.25am</td>
<td>Launch of the AHA Consensus-based Nursing Guidelines for the Care of patients with Liver Disease</td>
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<td>Ms Sue Mason, President, Australasian Hepatology Association, NSW, Australia</td>
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<tr>
<td>9.25am</td>
<td>Announcement of the Junior Research Award Recipients</td>
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<tr>
<td>9.30am</td>
<td>Professor Greg Dore, Past President, Australasian Society for HIV Medicine, NSW, Australia</td>
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<tr>
<td>9.30am-10.00am</td>
<td>Health Burden of HBV on the Asia Pacific Region</td>
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<td>Professor Henry Chan, Director, Cheng Suen Man Shook Centre for Hepatitis Research; Director, Center for Liver Health, Department of Medicine and Therapeutics, The Chinese University of Hong Kong, Hong Kong</td>
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<tr>
<td>10.00am</td>
<td>To trust or not to trust….. that is the question</td>
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<tr>
<td>10.03am</td>
<td>Professor Paul Ward, Head, Discipline of Public Health, School of Medicine, Flinders University, South Australia, SA; Honorary Professor, Centre for Values, Ethics and Law in Medicine (VELiM), University of Sydney, NSW, Australia</td>
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<tr>
<td>10.30am-11.00am</td>
<td>That's right, women are...different: Sex differences and HCV infection</td>
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<td>Professor Kimberly Page, Professor in Residence, Epidemiology &amp; Biostatistics Department, University of California, San Francisco, USA</td>
</tr>
<tr>
<td>11.00am-11.30am</td>
<td>Morning Tea in Exhibition and Poster Area, Auckland Rooms, Level 4</td>
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</table>
### Symposium Session: Clinical Care: Innovative models of hepatitis C treatment and care

**Room:** New Zealand 1

**Chairs:** Greg Dore and Sue Mason

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<td>Enhancing treatment for hepatitis C in opioid substitution settings: The ETHOS Study</td>
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<td>Trust and stigma: Exploring the interactions for policy and practice</td>
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<td>The use of next generation sequencing to understand the host-viral interplay</td>
<td>Silvana Gaudieri, Associate Professor, School of Anatomy and Human Biology, University of Western Australia, WA, Australia</td>
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### Symposium Session: Epidemiology, Public Health and Prevention: Not just counting: Using surveillance and modelling for prevention and management

**Room:** New Zealand 2

**Chairs:** Margaret Hellard and Christine Selvey

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<tr>
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<tr>
<td>11.45am-12.00pm</td>
<td>Count on it; new approaches to value-adding HBV surveillance in Australia</td>
<td>Benjamin Cowie, Epidemiologist &amp; Physician, VIDRL / VIDS, Melbourne Health, Melbourne, VIC, Australia</td>
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<tr>
<td>12.00pm-12.15pm</td>
<td>The complexity of hepatitis C epidemiology and transmission demands new and innovative surveillance responses</td>
<td>Mark Stoove, Head, HIV/STI Research Group, Burnet Institute, Melbourne, VIC, Australia</td>
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<td>Sexual transmission of hepatitis C, designing a resource that raises awareness without creating stigma</td>
<td>Jake Lewis, Training and Education Officer, Hepatitis Queensland, South Brisbane, QLD, Australia; Rhondda Lewis, Health Promotion Officer, Viral Hepatitis, Cairns Sexual Health Service, Cairns, QLD, Australia</td>
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### Symposium Session: Community and Social Research: Stigma and Discrimination – Looking for Answers in all the right places

**Room:** New Zealand 3

**Chairs:** Suzanne Fraser and Tiia Harrison

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<tr>
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<td>Trust and stigma: Exploring the interactions for policy and practice</td>
<td>Jude Byne, Senior Project Manager, Australian Injecting and Illicit Drug Users League (AIVL), Canberra, ACT, Australia</td>
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<tr>
<td>11.50am-12.10pm</td>
<td>Stigma, the heart of darkness</td>
<td>Jude Byne, Senior Project Manager, Australian Injecting and Illicit Drug Users League (AIVL), Canberra, ACT, Australia</td>
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<td>12.10pm-12.30pm</td>
<td>Stigma, the heart of darkness</td>
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<tr>
<td>12.30pm-12.45pm</td>
<td>Application of next-generation sequencing technologies to study viral hepatitis: From bioinformatics to vaccine development</td>
<td>Fabio Luciani, Research Fellow, University of NSW, Sydney, NSW, Australia</td>
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### Symposium Session: Basic Science: New Technologies

**Room:** New Zealand 4

**Chairs:** William Abbott and Eric Gowans

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### Symposium Session: Clinical Care: Innovative models of hepatitis C treatment and care

**Room:** New Zealand 1

**Chairs:** Greg Dore and Sue Mason

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| 12.18pm-12.30pm | Makes you want to do treatment: Increasing treatment readiness among clients of a hepatitis C community clinic in Christchurch, New Zealand  
Heath Te Au, Trainee Counsellor, Care New Zealand, Milton, New Zealand |
| 12.15pm-12.30pm | Monitoring Hepatitis C and Associated Risk Behaviour in People Who Inject Drugs: The Australian Needle and Syringe Program Survey (ANSPS)  
Lisa Maher, Program Head, Viral Hepatitis Epidemiology and Prevention Program, Kirby Institute for Infection and Immunity, Sydney, NSW, Australia |
| 12.30pm-12.50pm | My Blood is Always Red  
Heath Te Au, Trainee Counsellor, Care New Zealand, Milton, New Zealand |
| 12.45pm-1.00pm | Discussion  
Panel Discussion  
John Hornell, Benjamin Cowie, Mark Stoove, Lisa Maher, Nicole Wiggins |
| 12.30pm-1.00pm | Discussion  
Panel Discussion  
Greg Dore, Paul Haber, David Baker, Reilly Barkay, Carla Treloar, Annie Madden, Janett Catt |
| 1.00pm-2.30pm | Lunch in Exhibition and Poster Area, Auckland Rooms, Level 4 |
| 1.15pm-1.45pm | Satellite Session: Roche Diagnostics - Expanding frontiers for effective management of chronic hepatitis  
Room: New Zealand 1  
Chair: Dominic Ray-Chadhuri |
| 1.15pm-1.20pm | Opening remarks  
Dr Dominic Ray-Chadhuri |
| 1.20pm-1.40pm | HCV RNA quantitation with new DAAs  
Professor Edward Gane, Deputy Director, New Zealand Liver Transplant Unit, Auckland, New Zealand |
| 1.40pm-2.00pm | Utility of HBsAg and HBV DNA quantitation  
Professor Henry Chan, Director, Cheung Suen Man Shock Centre for Hepatitis Research, Director Center for Liver Health, Department of Medicine and Therapeutics, The Chinese University of Hong Kong |
| 2.00pm-2.15pm | Diagnostics assays optimised for clinical decision making  
Mrs Anila Padmanathan, Regional Manager Asia Pacific, Medical & Scientific Affairs, Roche Diagnostics, Petaling Jaya, Malaysia |
<p>| 2.15pm-2.30pm | Q &amp; A and Closing remarks from the Chair |</p>
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<tr>
<td>2.30pm-2.45pm</td>
<td>Proffered Paper Session: Clinical Care: Hepatitis B treatment: Advances in understanding</td>
<td>Room: New Zealand 1 Chairs: Frank Weilert and James Fung</td>
</tr>
<tr>
<td>2.30pm-2.45pm</td>
<td>Proffered Paper Session: Community and Social Research: HCV Models of Care – Reflections on Research</td>
<td>Room: New Zealand 3 Chairs: Helen Tyrrell and Paul Ward</td>
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<tr>
<td>2.30pm-2.45pm</td>
<td>Proffered Paper Session: Basic Science: Influence of host and virus on infection outcome</td>
<td>Room: New Zealand 4 Chairs: Michael Beard and Fabio Luciani</td>
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<tr>
<td>2.30pm-2.45pm</td>
<td>Serologic and clinical outcomes of horizontally acquired chronic hepatitis B infection in NZ Maori: Results from a 27-year follow up study</td>
<td>Tien Huey Lim</td>
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<tr>
<td>2.30pm-2.45pm</td>
<td>High but declining HCV incidence in people who inject drugs in Sydney, Australia Bethany White</td>
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<td>2.30pm-2.45pm</td>
<td>Shaken not deterred: the Christchurch Hepatitis C Community Clinic Jenny Bourke</td>
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<td>2.30pm-2.45pm</td>
<td>Characterising Hepatitis B in Northern Australia by Molecular Epidemiology - The CHARM NT Study Jane Davies</td>
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<td>2.45pm-3.00pm</td>
<td>Entecavir in chronic hepatitis B “real world” experience at Auckland City Hospital Alex Lampen-Smith</td>
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<tr>
<td>2.45pm-3.00pm</td>
<td>Impact of disclosure of Hepatitis C virus infection on injecting frequency and behaviour in a network of people who inject drugs Rachel Sacks-Davis</td>
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<td>2.45pm-3.00pm</td>
<td>Providing hepatitis C care and treatment in opiate substitution settings: A qualitative evaluation of four ETHOS sites Jake Rance</td>
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<td>2.45pm-3.00pm</td>
<td>Characterisation of IFN-lambda producing cells in chronic HCV infection Jeffrey Smith</td>
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<td>3.00pm-3.15pm</td>
<td>Adherence to hepatitis B virus anti-viral therapies Suzanne Polis</td>
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<td>3.00pm-3.15pm</td>
<td>Quantifying the fraction of cirrhosis attributable to alcohol among patients chronically infected with hepatitis C: Implications for treatment cost-effectiveness studies Sharon Hutchinson</td>
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<td>3.00pm-3.15pm</td>
<td>Increasing Attendance for Hepatitis C Care: Service Delivery Models that Attract Clients Sandi Mitchell</td>
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<td>3.00pm-3.15pm</td>
<td>Analysis of IL28B variants in an Egyptian population defines the 20 kilobases minimal region involved in spontaneous clearance of hepatitis C virus Vincent Pedergnana</td>
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<td>Perinatal management of hepatitis B positive mothers and their infants Jing Dong</td>
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<td>3.15pm-3.30pm</td>
<td>Behavioural sequelae of hepatitis C screening and infection disclosure among active injection drug users: A longitudinal study Julie Bruneau</td>
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<td>3.15pm-3.30pm</td>
<td>Acceptability of psychological support in Australians living with chronic hepatitis C Benjamin Stewart</td>
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<tr>
<td>3.15pm-3.30pm</td>
<td>IL28B SNP RS12979860 genotyping of Hepatitis C patients in New Zealand Neil Van de Water</td>
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3.30pm-3.45pm  
**Antiviral treatment of chronic HBV infection in remote-dwelling Aboriginal patients in Australia’s Northern Territory**  
Suresh Sharma

3.30pm-3.45pm  
**Association between harm reduction intervention uptake and HCV prevalence and incidence among injecting drug users attending sites that provide sterile injecting equipment in Scotland**  
Sharon Hutchinson

3.30pm-3.45pm  
**We ask questions, but are we asking the right questions?**  
Fiona Poeder

3.30pm-3.45pm  
**Plasma IP10 level predicts spontaneous clearance in acute HCV infection independent of IL28B genotype**  
Jason Grebely

3.45pm-4.00pm  
**Chronic Hepatitis B: An Exploration of Current Awareness and Practice in Primary Health Care in North Queensland**  
Yvonne Drazic

3.45pm-4.00pm  
**Assessment and treatment of hepatitis c virus infection among people who inject drugs in the opioid substitution setting: The ETHOS Study**  
Maryam Alavi

3.45pm-4.00pm  
**Redesigning responsibility: Hepatitis C prevention in sexual partnerships**  
Suzanne Fraser

3.45pm-4.00pm  
**IL28B genotype is associated with intraphepatic interferon stimulated gene expression in HCV genotype 1 but not genotype 3 infection**  
Alex Thompson

4.00pm-4.30pm  
**Afternoon Tea in Exhibition and Poster Area, Auckland Rooms, Level 4**

4.30pm-6.00pm  
**Conference Plenary: 2**  
Room: New Zealand 1 and 2  
Chairs: Annie Madden and Charles Henderson

4.30pm-5.00pm  
Professor Tim Rhodes, Professor of Public Health Sociology and Director of the Centre for Research on Drugs and Health Behaviour, London School of Hygiene and Tropical Medicine, England

5.00pm-5.30pm  
**Hepatitis B and Maori Health - Engaging with the future**  
Professor Chris Cunningham, Professor & Director, Research Centre for Māori Health & Development, Massey University, Wellington, New Zealand

5.30pm-6.00pm  
**The riddle of HCV persistence; early interactions between genomic RNA and cell defence mechanisms**  
Professor Peter Simmonds, Professor of Virology, Centre for Infectious Diseases, University of Edinburgh, Edinburgh, Scotland

6.00pm-6.05pm  
**Launch of the First Australian Hepatitis B Testing Policy**  
Dr Scott Bowden – Head, Molecular Microbiology Laboratory, Victorian Infectious Diseases Reference Laboratory (VIDRL) and Assoc Prof, Department of Microbiology, Monash University, Melbourne, VIC, Australia

6.05pm-6.20pm  
**Auckland Statement**

6.20pm-8.00pm  
**Welcome Reception & Poster Viewing Evening in Exhibition and Poster Area, Auckland Rooms, Level 4**
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<td>7.00am</td>
<td>Registration, Level 5</td>
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<tr>
<td>7.30am-9.00am</td>
<td><strong>Satellite Session: BMS Symposium: A Commitment to Liver Health</strong></td>
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<td>Room: New Zealand 3 and 4</td>
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<td>Chair: William Sievert</td>
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<tr>
<td>7.30am</td>
<td><strong>Breakfast Served until 7.45am</strong></td>
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<tr>
<td>8.00am-8.05am</td>
<td>Opening remarks from the chair</td>
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<td>Professor William Sievert, Director, Gastroenterology and Hepatology, Monash Medical Centre, Melbourne, VIC, Australia</td>
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<tr>
<td>8.05am-8.25am</td>
<td>Hepatitis C treatment beyond interferon</td>
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<td>Professor Ed Gane, Deputy Director, New Zealand Liver Transplant Unit, Auckland, New Zealand</td>
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<tr>
<td>8.25am-8.55am</td>
<td><strong>New insights: potent oral antiviral therapy for HBV</strong></td>
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<td>Dr James Y.Y. Fung, Specialist, Gastroenterology and Hepatology, Transplant Hepatologist, Department of Medicine, Queen Mary Hospital, Hong Kong</td>
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<tr>
<td>8.55am-9.00am</td>
<td>Closing remarks from the chair</td>
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<td>Professor William Sievert</td>
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<tr>
<td>9.00am-10.30am</td>
<td><strong>Conference Plenary: 3</strong></td>
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<td>Room: New Zealand 1 and 2</td>
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<td>Chairs: Stephen Locarnini and Sue Mason</td>
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<tr>
<td>9.00am</td>
<td><strong>Primer to the Future Treatment of HCV</strong></td>
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<td>Dr Jordan Feld, Assistant Professor of Medicine, University of Toronto Hepatologist, Toronto Western Hospital Liver Centre Scientist, Sandra Rotman Centre for Global Health, Toronto, Canada</td>
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<tr>
<td>9.30am</td>
<td>Development and application of an in vitro system to investigate protease inhibitor susceptibility and resistance development in HCV genotypes 1-6</td>
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<td>Professor Peter Simmonds, Professor of Virology, Centre for Infectious Diseases, University of Edinburgh, Edinburgh, Scotland</td>
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<tr>
<td>10.00am-10.30am</td>
<td><strong>Changing landscape for Hepatitis C pathway</strong></td>
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<td>Ms Janet Catt, Lead Nurse Specialist Practice, Royal Free Hospital, London, England</td>
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<tr>
<td>10.30am-11.00am</td>
<td><strong>Morning Tea in Exhibition and Poster Area, Auckland Rooms, Level 4</strong></td>
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<tr>
<td>11.00am-12.30pm</td>
<td><strong>Proffered Paper Session:</strong> Clinical Care: Strategies for expanded access to viral hepatitis assessment and treatment</td>
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<td>11.00am-12.30pm</td>
<td><strong>Proffered Paper Session:</strong> Epidemiology, Public Health and Prevention: Hepatitis B and liver cancer: Burden of disease and systematic responses</td>
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<td>11.00am-11.15am</td>
<td>Development of hepatology nursing guidelines - A contemporary, consensus-based guide for hepatology nursing practice in Australia</td>
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<td>11.00am-11.15am</td>
<td>Impact of conditional cash transfers on hepatitis B vaccination completion in people who inject drugs: The Hepatitis B Acceptability and Vaccination Incentives Trial (HAVIT)</td>
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<tr>
<td>11.00am-11.15am</td>
<td>Health promotion, health protection, health rights - It's time to change</td>
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<tr>
<td>11.15am-11.30am</td>
<td>Establishment of the Melbourne health integrated hepatitis B service</td>
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<td>11.15am-11.30am</td>
<td>The Forgotten Ones: Responding effectively to hepatitis B in remote settings</td>
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<tr>
<td>11.15am-11.30am</td>
<td>‘DULANGIRR GUBBYNIDGEL’ NEW BEGINNINGS: Hepatitis C peer education kit</td>
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<tr>
<td>11.00am-11.05am</td>
<td>Epidemiology, Public Health and Prevention: Introduction</td>
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<tr>
<td>11.00am-11.10am</td>
<td>Willingness to receive treatment for chronic hepatitis C virus infection among people who inject drugs in the opioid substitution setting: The ETHOS Study (Alavi, M)</td>
</tr>
<tr>
<td>11.00am-11.15am</td>
<td>Population-Attributable risk estimates for risk factors associated with hepatitis B and C in Pakistan, policy implications for pakistan and other South Asian Countries (Ahmed, B)</td>
</tr>
<tr>
<td>11.10am-11.15am</td>
<td>Planning for viral hepatitis in NSW/Australia at a Medicare Local and Local Health District Level (Crooks, L)</td>
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<tr>
<td>11.30am-11.45am</td>
<td>Can primary health care identify the diverse population living with chronic hepatitis B? Benjamin Cowie</td>
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<tr>
<td>11.45am-12.00pm</td>
<td>Doctors are doing it by themselves: Experience of a hepatitis C virus (HCV) treatment initiation pilot in general practice in New South Wales, Australia Max Hopwood</td>
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<tr>
<td>11.00am-11.15am</td>
<td>Growing burden of HCV-related advanced liver disease related to enhanced fibroscan-based screening Dianne How-Chow</td>
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<tr>
<td>12.15pm-12.30pm</td>
<td>Transient elastography for fibrosis staging in patients with chronic hepatitis B, hepatitis C and non-alcoholic fatty liver disease. A single centre experience David Orr</td>
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<tr>
<td>11.30am-11.45am</td>
<td>Universal newborn hepatitis B vaccination in the Northern Territory two decades on: The end of the Australia antigen? John Kaldor</td>
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<tr>
<td>11.45am-12.00pm</td>
<td>Hepatocellular carcinoma in the Northern Territory – High incidence and mortality, and the need for a screening program Joshua Davis</td>
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<tr>
<td>11.30am-11.45am</td>
<td>Its like hiding the vegetables - Engaging young people in safer drug using education Sam Liebelt</td>
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<tr>
<td>11.45am-12.00pm</td>
<td>People who inject drugs and hepatitis C projects: Ensuring community control and relevance Sione Crawford and Jeffrey Wegener</td>
</tr>
<tr>
<td>12.00pm-12.15pm</td>
<td>Clinical Care: Introduction 1: Female sex and variations in IL28B are independently associated with spontaneous clearance of acute HCV infection (Grebel, J) 2: Outcomes of a cohort of prisoners with Genotype 1 hepatitis C treated with standard double therapy. We report success rates of &gt;90% (Wake, C and Siddall, D) 3: Use of fibroscan in assessment of chronic hepatitis B virus infection (Lim, TH) 4: HDV testing in Victoria, Australia 2000-2009: Insights into epidemiology and clinical management (MacLachlan, J)</td>
</tr>
<tr>
<td>12.15pm-12.30pm</td>
<td>Community and Social Research: Introduction 1: Overdose Management: What’s this got to do with Hepatitis C? (Wiggins, N) 2: Peer Education in Aboriginal communities (Camilo, L) 3: “It’s taken so long to do treatment”: A program aimed at engaging people using illicit drugs and living with hepatitis C (Fitzpatrick, K)</td>
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<td>12.30pm-2.00pm</td>
<td>Lunch in Exhibition and Poster Area, Auckland Rooms, Level 4</td>
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<tr>
<td>12:45pm-1:45pm</td>
<td><strong>Satellite Session: The e health journey, from you to PCEHR and everything in between</strong></td>
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<td>12:45pm-1:45pm</td>
<td><strong>Cambodia: Co-infection of HIV and viral hepatitis in Cambodia</strong></td>
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<td><strong>Indonesia: HIV/hepatitis co-infection management: Experience from Indonesia</strong></td>
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<td><strong>Laot: HIV and viral hepatitis co-infection in Laos: Experience of Mahosoth and Sathabthiprath Hospital</strong></td>
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<td><strong>Sri Lanka: An overview of the management of HIV and HIV/hepatitis co-infection in Sri Lanka</strong></td>
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<tr>
<td>2.00pm-3.30pm</td>
<td><strong>Symposium Session: Clinical Care: Advanced Liver Disease</strong></td>
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<td><strong>Symposium Session: Epidemiology, Public Health and Prevention: Viral Hepatitis and ageing</strong></td>
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<td><strong>Symposium Session: Community and Social Research: Health Promotion in a Cultural Context</strong></td>
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<td>2.00pm-3.30pm</td>
<td><strong>Symposium Session: Basic Science: Host virus interactions</strong></td>
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<td>2.15pm-</td>
<td><strong>Management of patients with advanced hepatitis B</strong></td>
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<td>2.30pm</td>
<td><strong>‘Double jeopardy’- AIVL's investigation of ageing and hepatitis C</strong></td>
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<td>2.25pm-</td>
<td><strong>Where’s the Shame, Love Your Liver! Shame surrounds hep C but we need to talk about it</strong></td>
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<td>2.50pm</td>
<td><strong>Can we prevent cirrhosis complications with antiviral treatment</strong></td>
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<td>2.50pm-</td>
<td><strong>Barriers and enablers to effective management of people with chronic hepatitis B</strong></td>
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<td>3.00pm</td>
<td><strong>“Ma Wai e Taurima?” (“Who’s looking after the Marae?”)</strong></td>
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<td>3.15pm-</td>
<td><strong>Interferon non-response: New pieces to a very complicated puzzle</strong></td>
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<td>2.45pm-</td>
<td><strong>Nurse led follow up clinic for patients with stable cirrhosis</strong></td>
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<td>3.00pm</td>
<td><strong>Panel Discussion</strong></td>
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<td>3.30pm-5.30pm</td>
<td><strong>Afternoon Tea in Exhibition and Poster Area, Auckland Rooms, Level 4</strong></td>
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<tr>
<td>4.00pm-5.30pm</td>
<td><strong>Proffered Paper Session: Clinical Care: New directions in treatment monitoring and delivery</strong></td>
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<tr>
<td>4.00pm-5.30pm</td>
<td><strong>Proffered Paper Session: Epidemiology, Public Health and Prevention: New horizons: modelling, linkage and registry studies in viral hepatitis</strong></td>
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<tr>
<td>4.00pm-5.30pm</td>
<td><strong>Proffered Paper Session: Community and Social Research: Engaging Communities</strong></td>
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<tr>
<td>4.00pm-5.30pm</td>
<td><strong>Proffered Paper Session: Basic Science: Hepatitis Infections: Control and prevention</strong></td>
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**4.00pm-4.15pm**
- **The DAA development race - Innovative ways of getting to POC quickly**
  - Nicky Cranshaw
- **Impact of hepatitis C virus infection on life expectancy: A population-based linkage study**
  - Maryam Alavi
- **"Our C-Ciety": The targets and challenges of social media**
  - Fiona Poeder
- **PPARα agonists increase interferon sensitivity and may be an effective supplementary treatment for difficult to treat patients with hepatitis C**
  - Mark Douglas

**4.15pm-4.30pm**
- **ELECTRON: Once-daily GS-7977 plus ribavirin for 12 weeks provides SVR without interferon in treatment-naive and experienced HCV GT 1/2/3**
  - Edward Gane
- **Most hepatitis c reinfections that clear spontaneously go undetected – Bayesian analysis of a prospective longitudinal study**
  - Rachel Sacks-Davis
- **Empowering, skilling and equipping C- Me community champions to represent their communities’ voice, have it heard and access the services they need**
  - David Pieper
- **Screening of ISGs reveals viperin and the IFITM family of proteins to be novel anti-HCV effectors**
  - Michael Beard

**4.30pm-4.45pm**
- **Patterns of HCV RNA during acute hepatitis C virus infection guide optimum timing for therapeutic intervention**
  - Behzad Hajarizadeh
- **Liver cancer in Victoria, Australia: Epidemiological determinants and secular and geographic trends 1982-2007**
  - Kylie Carville
- **Using theatre to break down the barriers: a Partnership approach to Hepatitis C Awareness**
  - Lauren Proudfoot
- **Immune responses against founder hepatitis C viruses in acute asymptomatic subjects**
  - Fabio Luciani
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<td>4.45pm-5.00pm</td>
<td>Impact of treatment on injecting drug use behaviours during recent HCV infection</td>
<td>Jason Grebely</td>
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<td>4.45pm-5.00pm</td>
<td>Modelling new HCV antiviral treatments for prevention of HCV among people who inject drugs: a multi-country analysis of impact</td>
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<td>Yvonne Drazic and Linh Nguyen</td>
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<td>Australian Trial in Acute Hepatitis C (ATAHC) II Study</td>
<td>Gail Matthews</td>
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<td>What's in a name? Evaluation of a novel screening tool for identifying overseas-born primary care patients at risk of chronic hepatitis B</td>
<td>Jennifer MacLachlan</td>
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<td>The role of General Practitioners in managing patients with chronic hepatitis B</td>
<td>Jacqui Richmond</td>
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<td>Quantification of HBsAg in nucleos(t)ide-naive patients treated for chronic hepatitis B (CHB) with entecavir (ETV) monotherapy or ETV plus tenofovir (TDF) in the BE-LOW study</td>
<td>Cyril Llamoso</td>
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<tr>
<td>5.15pm-5.30pm</td>
<td>An assessment of the cost-effectiveness of treating chronic HCV infection among People Who Inject Drugs in Victoria, Australia</td>
<td>Margaret Hellard</td>
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<tr>
<td>5.15pm-5.30pm</td>
<td>To B or not to B - That is the question</td>
<td>Annie Madden</td>
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<tr>
<td>5.15pm-5.30pm</td>
<td>Utility of next-generation sequencing for Hepatitis B virus genotyping and detection of antiviral resistance</td>
<td>Fahimeh Rahnama</td>
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<td>5.15pm-5.30pm</td>
<td>A second generation therapeutic cellular vaccine for hepatitis C virus</td>
<td>Eric Gowans</td>
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7.00pm Conference Dinner, Voyager Maritime Museum, Auckland Viaduct Harbour
**Wednesday 12 September**

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<tr>
<td>8.30am</td>
<td>Cross-Track Symposium Session: Treatment as prevention of liver cancer</td>
<td>Greg Dore, Kirby Institute for infection and immunity in society. The University of New South Wales, NSW, Australia</td>
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<td>Cross-Track Symposium Session: What can research with people who inject drugs tell us about how to avoid hepatitis C? (the long term?)</td>
<td>Sam Friedman, Director of HIV/AIDS Research, National Development and Research Institutes, New York, USA</td>
</tr>
<tr>
<td>8.45am</td>
<td>What are the current perceptions about the link between liver cancer and chronic hepatitis B in Australia's Chinese and Vietnamese communities?</td>
<td>Zhihong Gu, Program Manager, Ethnic Communities Council of Queensland (ECCQ), West End, QLD, Australia, Emily Adamson, Hepatitis B Program Coordinator, Cancer Council Victoria, Carlton, Victoria, Australia</td>
</tr>
<tr>
<td>9.05am</td>
<td>Strategies long term injectors use to avoid HCV infection</td>
<td>Magdalena Harris, Centre for Research on Drugs and Health Behaviour, London School of Hygiene and Tropical Medicine, London, UK</td>
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<tr>
<td>9.35am</td>
<td>Staying Safe Sydney: The logic of care and trust in hepatitis C testing</td>
<td>Lisa Maher, Deputy Director, National Centre in HIV Social Research, Sydney, NSW, Australia</td>
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<td>9.50am</td>
<td>Discussion</td>
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**Room New Zealand 1 and 2**

**Chair: Benjamin Cowie and Joshua Davis**
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<td>Morning Tea in Exhibition and Poster Area, Foyer, Level 5</td>
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<tr>
<td>10.30am-12.00pm</td>
<td><strong>Cross Track Symposium Session: Treatment as prevention of HCV transmission</strong></td>
<td>Room: New Zealand 1 and 2 Chairs: John Hornell and Charles Henderson</td>
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<tr>
<td>10.30am-10.45am</td>
<td>Reducing HCV in people who inject drugs: Total coverage, test, tell and targeted treatment</td>
<td>Margaret Hellard, Centre Head, Centre For Population Health, Burnet Institute, Melbourne, VIC, Australia</td>
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<tr>
<td>10.45am-11.00am</td>
<td>Modeling the impact of HCV treatment on transmission</td>
<td>Natasha Martin, University of Bristol; London School of Hygiene and Tropical Medicine, UK</td>
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<tr>
<td>11.00am-11.15am</td>
<td>Keeping the individual central to HCV prevention, treatment and care</td>
<td>Sione Crawford, Director, Community Programs &amp; Services, NSW Users and AIDS Association (NUAA), Surry Hills, NSW, Australia</td>
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<tr>
<td>11.15am-11.30am</td>
<td>HCV treatment as prevention: Key components for feasibility</td>
<td>Greg Dore, Kirby Institute for infection and immunity in society, The University of New South Wales, NSW, Australia</td>
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<tr>
<td>12.00pm-12.30pm</td>
<td><strong>Cross Track Symposium Session: Co-infection</strong></td>
<td>Room: New Zealand 3 and 4 Chairs: Edward Gane and Julie Bruneau</td>
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<td>10.30am-12.00pm</td>
<td>HCV transmission among men who have sex with men</td>
<td>Joe Sasadeusz, Associate Professor, Royal Melbourne and Alfred Hospitals, Melbourne, VIC, Australia</td>
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<td>10.45am-11.00am</td>
<td>Impact of HIV and HBV co-infection on morbidity and mortality among people with HCV</td>
<td>Janaki Amin, Biostatistics and database program, The Kirby Institute, NSW, Australia</td>
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<td>11.00am-11.15am</td>
<td>Therapeutic strategies for HIV/HCV co-infection</td>
<td>Gail Matthews, Senior Lecturer, Viral Hepatitis Clinical Research Program, The Kirby Institute, NSW, Australia</td>
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<td>11.15am-11.30am</td>
<td>Therapeutic strategies for HBV HCV dual infection</td>
<td>David Iser, Department of Gastroenterology, St Vincent’s Hospital, VIC, Australia</td>
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<td>11.30am-12.00pm</td>
<td>Discussion</td>
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<td>12.00pm-12.30pm</td>
<td>Closing Plenary</td>
<td>Room: New Zealand 1 and 2 Chairs: Greg Dore and Carla Treloar</td>
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<td>12.00pm-12.30pm</td>
<td>Conference Wrap-Up and Close</td>
<td>Greg Dore and Carla Treloar</td>
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<td>12.30pm</td>
<td>Conference Close</td>
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BARACLUDE™ (entecavir monohydrate):
a first-line treatment option for chronic hepatitis B in real-life clinical practice,
with an established long-term safety and tolerability profile.¹²

References:

PBS Information: Private Hospital Authority Required.
Refer to PBS Schedule for full information.

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ORAL PRESENTATION ABSTRACTS
– MONDAY 10 SEPTEMBER 2012

All proffered paper and invited speakers have been asked to provide a disclosure of interest statement on their abstract and within their presentation.

OPENING CEREMONY AND PLENARY 1
8:30AM – 11:00AM

PAPER NUMBER 258
HEALTH BURDEN OF HBV ON THE ASIA PACIFIC REGION
Chan HLY1
1Department of Medicine and Therapeutics and Institute of Digestive Disease, The Chinese University of Hong Kong

The prevalence of hepatitis B virus (HBV) infection in the Asia Pacific region is high, and a few countries have a prevalence of >8%. HBV is the commonest cause of hepatocellular carcinoma in Southeast Asia (excluding Japan). The control of HBV infection is therefore of paramount importance in the prevention of HCC.

As perinatal transmission is the commonest mode of HBV transmission in Asia, the introduction of vaccination program at birth has significantly reduced the incidence of new HBV infection among the newborn. In Taiwan, a reduction in incidence of childhood HCC has been observed 10 years after the commencement of the universal vaccination program. The challenge is the coverage of the vaccination program in Asian countries with less favorable socioeconomic condition. Early data suggests that the risk of perinatal HBV transmission can be further reduced by the use of antiviral agents at the third trimester, but its clinical use is still controversial.

There is ample evidence that maintained viral suppression by antiviral drugs can reduce the risk of HCC. Nowadays, entecavir and tenofovir, which are the recommended first line agents by all regional consensus guidelines, are very effective in viral suppression with a minimal risk of drug resistance. The problem in the Asia Pacific region is drug cost. With different reimbursement policies of different countries, different problems may arise. For countries where lamivudine is the only reimbursable antiviral drug, lamivudine resistance is still a major problem.

Drug adherence is another problem with the antiviral agents. Hepatitis relapse is common after premature cessation of antiviral agents. HBeAg seroconversion is suggested to be a landmark when antiviral drug can be stopped, but a high risk of relapse has still been reported. For HBeAg negative patients, treatment can be stopped if HBV DNA is undetectable for 3 times at 6 months apart according to the Asian Pacific consensus guideline. However, approximately 50% of patients will experience a viral relapse following this criterion. HBsAg seroclearance is the best landmark to stop treatment, but it is uncommon and occurs in <5% of patients after a few years of antiviral therapy.

Disclosure of interest statement: Henry LY Chan is a consultant and have received lecture honorarium from Abbott, Bristol Myers Squibb, Gilead, Merck, Novartis Pharmaceutical and Roche.
PAPER NUMBER 306
TO TRUST OR NOT TO TRUST…THAT IS THE QUESTION

Ward, P.
'Discipline of Public Health, Flinders University, Australia

It is a common assertion that we live in times of reduced trust in ‘authority’. Some studies report declining public trust in health care (both the professionals and institutions) and this may be linked to broader epistemological challenges about the authenticity of knowledge, lay confidence in the power of science and the perceived capacity of experts to deliver to us control over our bodies (if indeed they ever could). There have also been historical changes in the relationships between professionals and clients (as a result of wider social and cultural changes) which have altered lay expectations about the role of health professionals (vis a vis their own role in self-management). One of these changes is the notion of ‘popular epidemiology’ or the rise of lay forms of knowledge - many individuals undertake their own research into health behaviours and often use professionals to verify rather than diagnose. Indeed, the search for health related information on the internet falls second only to pornography. As a result, the knowledge gap that once divided lay and professional knowledge is narrowing and the need for trust (as opposed to compliance) is increasing. Of particular importance are research findings that show the benefits of a more trusting relationship on treatment outcomes.

As clients become more reflexive in their medical decisions, the notion of trust has become more central for both researchers and practitioners. Indeed, it has been argued that trust is the defining feature of modern society and will become more important as clients become more questioning and critical of professionals (and their knowledge). However, there are many and varying conceptualisations of trust within the literature, which make researching trust in client-professional relationships problematic and empirical findings, uncertain. This presentation will outline the conceptual landscape of ‘trust’ and then present findings from a number of studies I have undertaken on trust in health care professionals and institutions. Throughout the presentation, I will attempt to make the theoretical and empirical research applicable to developing, maintaining and sustaining trust within client-professional relationships around viral hepatitis.
Abstract: In this presentation, I will review data and empirical evidence of gender differences in risk for, prevalence and incidence, and natural history of hepatitis C virus (HCV) infection. While studies of several populations will be reviewed, including samples from population-based studies, and others, I will especially focus on the population most at risk currently, injection drug users (IDU), as parenteral exposure is the leading cause of HCV worldwide. In this regard, data will be presented showing how female IDU different from men with respect to risk factors for HCV; in many studies reporting higher risk. Studies assessing prevalence of HCV suggest slightly lower ratio of exposed women compared to men. Studies of HCV incidence, however vary, with some showing lower and others higher risk among women. We review data on how women differ from men with respect to spontaneous resolution of HCV infection, treatment responses, and progression of liver disease (females are less likely than males to develop fibrosis and progress to cirrhosis). The differences in HCV infection risk and natural history between sexes, are often recognized, but not studied, and as a result, many important gaps in information exist to exploring these differences. Future studies assessing factors and mechanism underlying differences between women and men and HCV infection may provide important insights into prevention and clinical care of HCV.

Disclosure of Interest Statement: Nothing to disclose.
Introduction: Despite advances in hepatitis C virus (HCV) treatment and its accessibility, treatment uptake remains low among people who inject drugs (PWID). People who receive opioid substitution treatment (OST) are in regular contact with health care services but HCV treatment is infrequently given.

Methods: ETHOS is a prospective cohort study examining HCV treatment uptake, response and re-infection. A partnership has been established between clinical researchers, HCV clinicians, OST providers, NSW Ministry of Health, Sydney LHD, Hepatitis NSW, NUAA and Health Economists to undertake and manage the program. Recruitment is through a network of nine OST and community-based clinics in New South Wales, Australia, undertaking HCV assessment, treatment and monitoring. Eligibility criteria include chronic HCV infection and history of injecting drug use. An outreach model of care has been developed and implemented with qualitative and quantitative evaluation. Peer support workers have been introduced into a number of sites and are being separately evaluated. Health economic evaluation is underway.

Results: To date, 405 of the planned 500 participants have been enrolled. Data are available on the initial 237 participants. Seventy-seven percent are currently receiving OST, including 57% on methadone and 20% on buprenorphine. Ninety two percent (n=218) were HCV treatment-naive, of whom 49% (n=106) had never sought treatment before. To date, 73 participants (18%) have commenced treatment of whom 34 have completed and 30 are ongoing. Nine discontinued early (12%), five of these due to side-effects or treatment failure. There have been four deaths, none related to treatment.

Conclusion: High levels of treatment willingness have been demonstrated among PWID within the ETHOS study. This program has increased access to HCV treatment assessment and increased the number of PWID who commence on treatment. Completion rates for treatment are high at this stage of the study and similar to rates in the general HCV population.
HEPATITIS C TREATMENT INITIATION IN PRIMARY CARE: PRELIMINARY RESULTS


1 Australasian Society for HIV Medicine (ASHM), 2 East Sydney Doctors, 3 Clinic 96, 4 The Byrne Surgery, 5 Cowra Medical, 6 Asquith Medical Centre, 7 Hunter Pharmacotherapy, 8 Dr Doong’s Clinic, 9 Kirby Institute, University of New South Wales.

Introduction: Treatment uptake for hepatitis C has generally been poor. Programs are underway to increase access to care in a variety of setting including jails and drug and alcohol clinics. A pilot program of treatment initiation in primary care settings was established in 2010 under the auspices of ASHM.

Methods: Following training through ASHM, 7 doctors in a range of primary care settings were able to initiate treatment with interferon / ribavirin in selected patients with chronic hepatitis C without signs of cirrhosis or major comorbidity. Patients with genotype 2/3 were generally treated without specialist review, while those with genotype 1 required an initial specialist review. An evaluation was undertaken through a cohort study that collected baseline demographic and clinical data and specific follow-up data on treatment-related toxicity and virological outcomes.

Results: Data was available on 36 patients who initiated treatment from March 2010. Mean age was 45 years (29-70 years), 24 (67%) male, with genotype distribution: G1 5 (14%), G2 4 (11%) and G3 27 (75%). Five patients discontinued treatment prior to completion (1 poor adherence, 1 lost to follow up, 2 hospitalisation, 1 work commitments). Four patients required hospitalisation (2 psychiatric, pneumonia, drug withdrawal). Preliminary data for treatment response was 20/32 RVR, 26/30 EVR, 19/23 ETR and 15/20 SVR.

Conclusion: Primary care initiation of interferon/ribavirin treatment appears to be an effective, safe alternative for selected patients and may contribute to increasing access to care. Preliminary toxicity and virological outcomes are similar to tertiary care settings.

Disclosure of Interest Statement: None related to this study.
In New Zealand it is estimated there are between 45,000 and 50,000 individuals who are currently infected with hepatitis C (HCV) and a significant number of these are undiagnosed. The challenge, as has been the experience internationally, is how to raise awareness in the general public about the risk factors for HCV and ensure adequate assessment and support for people with HCV in a community setting.

The Hepatitis Foundation of New Zealand has been tasked by the Ministry of Health to pilot a number of integrated interventions within three geographic regions. The primary aim of the pilot is to increase the number of people diagnosed with HCV, assess and support them in the community and refer them to treatment. The hepatitis C pilot will trial and manage these interventions within three District Health Boards (DHB) sites between July 2012 and December 2014. The interventions include:

- Public Awareness
- Targeted Testing
- Community Assessment and Support
- Integrated Service Delivery
- Surveillance and Monitoring.

An innovative and fundamental role to the pilot design is establishment of a Community hepatitis C nurse to enable community-based Assessment and Support. This intervention involves establishing agreed patient-centred pathways for people with hepatitis C in the community, a support net for people in assessment or in follow-up overseen by the community hepatitis C nurse.

It is envisaged community based assessment will provide significant benefits for patients through blood tests and ultrasound elastography (also known as ‘FibroScan’) as part of patient workup within the community and as follow-up. This will free secondary care nurses to concentrate on treatment and assessing complex clinical cases. The community hepatitis C nurse will also collaborate closely with local providers and help coordinate support through other local community based health organisations.

With new treatments on the horizon clinician-patient decision making on whether to progress with current treatments may be a challenge within the pilots with potentially a large number of patients requiring supportive care in the community whilst waiting on availability of new treatments.
A NURSE-LED OUTREACH PROGRAM FOR ASSESSMENT AND TREATMENT OF CHRONIC HEPATITIS C VIA TELEMEDICINE IN THE PRISON SETTING

Clegg J1, Lange J1, Stevenson A1, Post JJ1,2,3, Lloyd D1, Rudge G1, Boonwaat L1, Forrest G1, Douglas J1, Monkley D1, Lloyd AR1,2,3

1 Population Health, Justice Health, PO Box 150 Matraville, NSW 2036 Australia. 2 Inflammation and Infection Research Centre, School of Medical Sciences, University of New South Wales, Sydney, 2052 Australia. 3 Department of Infectious Diseases, Prince of Wales Hospital, Randwick, NSW 2031 Australia.

Background: The global burden of disease attributable to chronic hepatitis C (HCV) is very large, yet the uptake of curative antiviral therapies remains very low, reflecting the marginalised patient population and arduous current treatments.

Methods: The safety and effectiveness of a nurse-led model of care for prisoners with chronic HCV was evaluated in three Australian correctional centres in 2009-2010 and is now being expanded. The model features protocol-driven assessment, triage, and management of antiviral therapy, by clinical nurse consultants trained in this role, with limited involvement by specialist physicians utilising telemedicine. Outcomes have been evaluated qualitatively with key informant interviews, and quantitatively with patient numbers completing milestones in the clinical pathway, and adverse event rates.

Results: In the pilot, 391 patients were enrolled, of whom 144 (37%) completed clinical and laboratory evaluations with a view to antiviral therapy over the 24 months of the study. Treatment was initiated in 108 patients (27% of the total), including 85 (79%) triaged for specialist review conducted by telemedicine only. The demographic and clinical characteristics of those who entered the model, and those who were treated, were representative of the incarcerated population, with a high prevalence of Indigenous ethnicity, injecting drug users, and those with mental illness. The rate of adverse events and treatment outcomes were consistent with community standards.

A clinical training and accreditation program for nurses has been developed and implemented to establish the skills required to support the model, incorporating clinical skills workshops, “on the job” training, and skills assessments. Currently, 56 patients are receiving treatment (24 on triple therapy) in the expanded model, which now includes 6 additional sites.

Conclusions: Expansion of this nurse-led, and specialist-supported, assessment and treatment model for prisoners with chronic HCV offers potential to substantively increase treatment uptake and reduce the burden of disease in Australia.

This project was funded in part by educational grants to Justice Health from Schering-Plough Pty Ltd and Roche Pty Ltd.
“MAKES YOU WANT TO DO TREATMENT”: INCREASING TREATMENT READINESS AMONG CLIENTS OF A HEPATITIS C COMMUNITY CLINIC IN CHRISTCHURCH, NEW ZEALAND

Brener L1, Gray R1, Cama E1, Horwitz R1 and Treloar C1
1National Centre in HIV Social Research

Introduction: People with HCV face a number of personal and institutional barriers to health care, as well as factors that hinder treatment readiness. The Hepatitis C Community Clinic was established in 2008 in Christchurch to overcome some of these barriers and provide alternative access to information, testing, referral and support. This study explored the novel health care environment provided by this clinic, to assess whether this integrated care service aids clients in managing their HCV, make lifestyle changes and whether it increases HCV treatment readiness.

Methods: Interviews were conducted with 24 health professionals and 29 clients of the clinic and local needle exchange programme. Health professional interviews focused on the perceived benefits of the clinic, and the clinic’s role in the broader context of HCV health care. Client interviews explored participant knowledge of HCV, HCV status, and experiences at the clinic. Surveys were completed by 120 clients and comprised of questions relating to changes in lifestyle habits, hepatitis C knowledge, treatment intention, and experiences with health care staff at the clinic.

Results: Findings illustrate the benefits of this model of care in accessing hard-to-reach clients, in managing their HCV concerns and in increasing readiness for HCV treatment. Based on participant reports the benefits of the clinic lies in the non-judgemental, caring and supportive environment created for clients. The majority of respondents indicated that attendance at the clinic has provided them with the information and confidence to better manage their Hepatitis C.

Conclusion: Given the benefits of this community clinic to clients, it is proposed that integrated care networks in a community setting are an appropriate location for the administration of HCV treatment and offers an alternative model to mainstream health care.

Disclosure of Interest Statement: The committee for the Australasian Viral Hepatitis Conference recognise the considerable contribution that industry partners make to professional and research activities. We also recognise the need for transparency of disclosure of potential conflicts of interest by acknowledging these relationships in publications and presentations.
SYMPOSIUM SESSION: EPIDEMIOLOGY, PUBLIC HEALTH AND PREVENTION: NOT JUST COUNTING: USING SURVEILLANCE AND MODELLING FOR PREVENTION AND MANAGEMENT

11:30AM – 1:00PM

PAPER NUMBER 301

CHRONIC HEPATITIS IN NEW ZEALAND: LONG-TERM SURVEILLANCE, DOES IT WORK?

Hornell J

1 The Hepatitis Foundation of New Zealand

The Hepatitis Foundation of New Zealand is a charitable trust with over 20 years experience in viral hepatitis. The Foundation’s aim is to promote positive health outcomes to people living with chronic hepatitis B and C in New Zealand.

For over 10 years, the Foundation has been the national provider for long term follow-up of people living with chronic hepatitis B and more recently, chronic hepatitis C. Over 13,500 people are enrolled in the programme which continues to grow, making it the largest surveillance hepatitis programme worldwide.

Many New Zealanders with chronic hepatitis are still developing late stage liver disease however why do those enrolled into long-term surveillance have better outcomes?

What lesson have been learned from the past, the present and what does the future hold?
PAPER NUMBER 252
COUNT ON IT; NEW APPROACHES TO VALUE-ADDING HBV SURVEILLANCE IN AUSTRALIA
Cowie BC\(1,3\)
1 WHO Regional Reference Laboratory for Hepatitis B, Victorian Infectious Diseases Reference Laboratory; 2 Victorian Infectious Diseases Service, Royal Melbourne Hospital; 3 Department of Medicine, University of Melbourne

Notifiable disease surveillance systems can provide a wealth of information regarding the distribution of infections, trends over time, and underlying epidemiological determinants. However these essential elements are often not optimally harnessed to guide public health actions and contribute to communicable disease control – a situation that clearly applies to the case of chronic hepatitis B.

This presentation will provide an overview of the current epidemiology of chronic hepatitis B in Australia and then discuss evolving and novel applications of surveillance data. Examples include enhanced exploration of existing data contained in notifications to improve understanding of disparities in burden of disease; the growing potential to link passive surveillance systems with cancer registries, hospital datasets and other large information repositories; the use of notifiable disease data to inform mathematical modelling and other epidemiological research methods; and the use of surveillance registries to validate and target specific clinical interventions.

Through examining such existing examples of innovative applications of surveillance data, and highlighting priorities for action in the National Hepatitis B Strategy 2010-2013, this presentation will examine the way forward for value-adding HBV surveillance in Australia in the years to come.
Surveillance of hepatitis C virus (HCV) infection is crucial for understanding the epidemiology of HCV, evaluating the effectiveness of prevention initiatives and for informing public health and clinical practice. However, such surveillance is inherently challenging. Opportunities to detect HCV infections can be missed because of the chaotic lifestyle of the primary risk population, people who inject drugs (PWID), risk practices that would recommend testing may not be disclosed due to stigmatising attitudes towards PWID, an overwhelming majority of acute HCV infections are asymptomatic, and there are no universally accepted clinical guidelines for the frequency of HCV testing. Thus very few HCV cases are detected in the early stages, with the majority detected after the patient has either cleared their infection spontaneously or progressed to chronicity. Distinguishing between cleared and chronic HCV infections is further complicated by the limited amount of PCR testing undertaken following positive HCV antibody tests.

To overcome these challenges, it is imperative that we first begin with the development of clinical guidelines for HCV testing and disseminate them broadly; such guidelines should describe recommendations for the frequency of HCV testing based on risk and also recommended best practice algorithms for what tests should be ordered. To better understand the transmission dynamics of HCV, the trends in transmission over time and distribution of HCV burden of disease, the utility of new surveillance systems capable of linking individual testing histories should be explored. Alongside the ability of such systems to help identify acute HCV infections, expanding data linkage to include other clinical databases such as cancer registries and hospital databases will have the potential to deliver valuable information to inform public health practice and clinical decision making. This presentation will explore how new and innovative approaches to HCV surveillance can ultimately help reduce HCV transmission and HCV burden of disease.
PAPER NUMBER 262

MONITORING HEPATITIS C AND ASSOCIATED RISK BEHAVIOUR IN PEOPLE WHO INJECT DRUGS: THE AUSTRALIAN NEEDLE AND SYRINGE PROGRAM SURVEY (ANSPS)

Maher L1, Iversen J1
on behalf of the Australian Collaboration of Needle and Syringe Programs 1The Kirby Institute, University of New South Wales.

Introduction: Australia has a comprehensive Needle and Syringe Program (NSP) with ~1000 publicly funded NSPs operating throughout the nation. The Australian Needle and Syringe Program Survey (ANSPS) provides serial point prevalence estimates of HIV and HCV antibody and associated risk behaviour among people who inject drugs (PWID) attending NSPs. This presentation reports on recent HCV enhancement activities, including increased utilisation of existing data, enhanced behavioural surveillance and enhanced biological surveillance.

Methods: The Australian Needle and Syringe Program Survey (ANSPS) is a national cross-sectional survey of PWID conducted annually since 1995. Participants (~2000 pa) complete a brief self-administered questionnaire and provide a capillary blood sample for anti-HCV and HIV testing. Ethical approval is granted by UNSW and site-specific governance bodies.

Results: This presentation reports results of recent enhancement activities designed to: 1) Estimate rates of incident HCV infection using existing data (anti-HCV results of repeat ANSPS participants); 2) Identify individual needle and syringe coverage and factors associated with inadequate coverage based on enhanced behavioural data collection; and 3) Determine rates of incident HCV infection and spontaneous viral clearance drawing on enhanced biological data (HCV-RNA testing).

Conclusion: Prospective observational studies of PWID are resource intensive and rare. Our results demonstrate the utility of serial cross sectional serosurveys to estimate and monitor HCV prevalence and incidence and identify coverage of preventive interventions. The ANSPS is an efficient, cost effective and policy-responsive mechanism administered annually through an existing network of NSPs. Strengths include the collection of data to 1) monitor trends in participant characteristics, risk behaviour and HCV prevalence and incidence; 2) populate models designed to estimate epidemic trajectories and associated burden of disease; and 3) evaluate the effectiveness of the National Hepatitis C Strategy and interventions designed to prevent HCV in PWID.

Disclosure of Interest Statement: The ANSPS is funded by the Commonwealth Department of Health and Ageing.
The key purpose of this presentation will be to explore the inter-related concepts of trust and stigma and to discuss the implications of these on policy and practice within viral hepatitis services. There is a long tradition of scholarship on the notion of stigma – a social process which has been attributed to creating a “spoiled” or “tainted” identity, leading to feelings by the bearer of low self-worth, low self-esteem and low self-efficacy. These outcomes have then been linked to reduced life satisfaction, poorer mental health and reduced utilisation of a variety of forms of health and social care services. There is also some empirical evidence showing that stigma is associated with reduced trust in service providers, although whether distrust leads to perceived stigmatisation, and/or whether feelings of being stigmatised by healthcare workers leads to distrust is open to debate. However, the theoretical links between trust and stigma have not received a great deal of attention, which seems like a large gap, especially given that trust in hepatitis service providers may rest on a client believing that the provider has their ‘best interests’ at heart – if the client feels stigmatised, do they attribute this to the social system or to the individual representing the system (in this case, the service provider), and do they then ‘distrust’ the system and/or the provider? The presentation will focus on these links between trust and stigma and allow space for discussion within the symposium.
STIGMA - THE HEART OF DARKNESS
Byrne J.T.*
*Australian Injecting and Illicit Drug Users League

Introduction: Injecting drug users are not going on treatment that could save their lives! The societal twins of stigma and discrimination are cited as the reasons why. As part of a larger anti-discrimination project, AIVL spent last year developing a short film with the renowned advertising agency ‘Fnucky’. The film was designed to ‘start a conversation’ among the broader community about people who inject drugs, and the effects of stigma and discrimination. Reaching all sections of the community at once was deemed impossible, therefore AIVL aims this film at post-secondary students: they are a group that is potentially able to influence other generations - both younger and older.

Methods: This presentation explores the experience of making the film while ensuring it told our ‘truth’, while simultaneously managing bureaucratic requirements, and AIVL’s need to reflect the results of earlier market research on the general public's attitudes toward injecting drug users. These themes are coupled with issues that arose for AIVL as an organization that is staffed by people who use drugs; including shame, and the long term impact of individual's own experience of stigma and discrimination. The presentation includes examination of the unexpected responses from others involved in the film's development.

Conclusion: The presentation concludes with discussion on the positive impact the process of the film's development had on AIVL staff. It also discusses AIVL's aims for the film, and what AIVL can achieve in terms of positive outcomes for our community; tackling these endemic problems in a structured way, ensuring we take the broader community with us. This presentation looks into the heart of stigma and the darkness it projects on people who inject and the wider community when it lies unidentified and unacknowledged.
Increasing cases of confirmed acute sexually acquired hepatitis C infection have been observed in a number of men who have sex with men (MSM) around the world (including Australia) - and cases have been most prevalent among those living with HIV (PLHIV).

In response to enquiries from sexually adventurous MSM, a resource was designed to inform them (and their health care providers where relevant) of the risk of sexually acquired hepatitis C, to encourage testing if at risk, and to raise awareness of the high rate of success in the early treatment of hepatitis C. The resource aimed to allay some of the myths around sexual transmission, thereby reducing feelings of panic or fear.

The resource was developed in a collaboration of four Queensland services. The process of refining the message, framing the message without creating fear, and framing the message without further marginalisation or stigma for HIV positive men or MSM, proved to be challenging. An added challenge for clinical review of the content was the ever changing research horizon, with new information accumulating quickly for this type of transmission.

An extensive process of consultation and focus testing was utilised to optimize the message and the imagery for the audience of sexually adventurous men who have sex with men.

A health promotion plan and letter of introduction were developed to accompany the resource in order to further assist health services in educating this presumed small population of at risk men, without increasing stigma or discrimination.
**PAPER NUMBER 67**

MY BLOOD IS ALWAYS RED

Te Au H V1,2, Downs J A2

1 Hepatitis C Resource Centre Otago 2 Dunedin Intravenous Organisation (DIVO)

**Introduction:** The Dunedin Intravenous Organisation (DIVO) introduced a free weekly doctors clinic in 1990. This was implemented so Intravenous Drug Users (IDU) would receive healthcare for issues that would otherwise remain untreated. It became obvious there was an issue with IDU not having their blood tests completed. Reasons became clear after talking with clients. General non-compliance and apathy were big issues. Difficult veins. Many clients were on methadone and there was fear some could lose privileges because of track marks.

**Methods:** The hepatitis C educator went through training to become a Phlebotomist so blood tests could be performed on-site during the clinics. The educator is an ex IDU, well known and trusted in the local IDU community. Clients were responsive to the idea of a peer testing them.

**Results:** The first blood test was performed January 2007. As of April 16 2012, 295 blood tests have been performed (m=165, f=130) and 30 clients have been referred for hepatitis C treatment. Before the on-site testing around 10% was having bloods performed. Now around 90% of this high at-risk group has their bloods completed.

**Conclusion:** Peer based screening for hepatitis C in Dunedin’s small IDU community is proving to be a positive move. We now get clients referred to us for blood tests from other organisations, including the Community Alcohol Drug Service (CADS) who provide the Opioid Substitution Treatment (OST).
SYMPOSIUM SESSION: BASIC SCIENCE: NEW TECHNOLOGIES

11:30AM – 1:00PM

PAPER NUMBER 256
THE USE OF NEXT GENERATION SEQUENCING TO UNDERSTAND THE HOST-VIRAL INTERPLAY

Gaudieri S1,2, Plauzolles A1, Merani S1, Chopra A1, Lucas M2, Rauch A4, Rohrbach J1, Luciani F5, Bull R6, Lloyd A5, Applegate T6, Matthews G6

1 School of Anatomy, Physiology and Human Biology, University of Western Australia, Australia
2 Institute for Immunology and Infectious Diseases, Murdoch University, Australia
3 Centre for Forensic Science, University of Western Australia, Australia
4 University Clinic of Infectious Diseases, University Hospital Bern and University of Bern, Switzerland
5 Inflammation and Infection Research Centre, University of New South Wales, Australia
6 The Kirby Institute, University of New South Wales, Australia

The host’s viral specific T-cell response is an important correlate of infection outcome in Hepatitis C virus (HCV) infection. The ability of the virus to escape this response via genetic change is a common mechanism utilised by HCV. As the specificity of the host’s T-cell response is defined by the sequence content of the viral target and the host’s Human Leucocyte Antigen (HLA) repertoire, we have been able to demonstrate the presence of specific HLA allele associated viral polymorphisms (viral adaptations) or “HLA footprints” across the viral genome that mark true in-vivo T-cell targets. We are now using high-resolution next generation sequencing technology to determine how viral adaptation in the incoming virus (initial viral dynamics) and viral adaptation during the course of HCV infection (changes in viral quasispecies) can affect infection outcome. For example, analysis of samples from subjects from known transmission cohorts and from subjects during the acute phase of infection has shown that viral adaptation if present in the infecting virus can shape the viral-specific T-cell response in the new host resulting in de novo viral adaptation, and potentially affecting infection outcome. These studies will also identify compensatory or linked genetic changes that offset the fitness cost of some viral adaptations. The identification of important immune-related changes in the virus will be relevant to drug treatment and vaccine design.

Disclosure of Interest Statement: This work has been funded by the National Health and Medical Research Council.
Next generation sequencing technologies (NGS) have redefined the modus operandi in both human and microbial genetics research, allowing the unprecedented generation of very large sequencing datasets on a short time scale and at affordable costs.

A key challenge in NGS technology is the bioinformatics and statistical analysis of the information generated to ensure high quality in the analyses and interpretation of large, error-prone datasets. The increasing size of the NGS datasets being generated, short read lengths, and significant technical error rates carried with each of the emerging technologies will continue to demand sophisticated and efficient support systems.

In this symposium, current bioinformatics and computational modeling approaches for the analysis of next generation sequencing data, with particular focus on hepatitis C and B viruses, will be reviewed and discussed. The current developments in improving data analysis, as well as in expanding the spectrum of applications of NGS technologies to study viral evolution will be presented and the potential for these technologies to impact vaccine research discussed.

Disclosure of Interest Statement: None
DYNAMIC IMAGING OF HEPATITIS C VIRUS REPLICATION AND ASSEMBLY

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Introduction: Dynamic events between HCV-encoded proteins and host factors are essential for HCV RNA replication and infectious virion production. To investigate these dynamic events we have developed approaches to visualise virus-host interactions in living, virus-producing cells using fluorescence microscopy.

Methods: We have generated derivatives of the infectious genotype 2a chimera Jc1 that encode tetracysteine motif (TCM) and/or fluorescent protein insertions in the NS5A and core proteins. To enable live cell imaging of HCV RNA we have inserted arrays of MS2 bacteriophage stem loops into the 3'UTR of Jc1 derivatives, such that nascent HCV RNA can be indirectly labeled with heterologously expressed MS2 Coat-fluorescent protein fusions. Following assessment of the impact of these tags on virus protein localization, replication and infectious virus production, we have examined the localization and traffic of fluorescently-labeled NS5A with respect to fluorescently-labeled core protein, HCV RNA and relevant host cell organelles and RC components.

Results: In living virus-producing cells, NS5A is found in large, relatively static structures and small, highly motile structures that may represent replication complexes (RCs). These putative RCs are found in close association with the endoplasmic reticulum and traffic throughout the cytoplasm in a microtubule-dependent manner towards and away from lipid droplet-rich areas that are sites of virus particle assembly. Both relatively static and highly motile NS5A-positive structures are enriched with HCV RNA and host RC components VAP-A and Rab5A. To study the convergence of HCV replication and assembly pathways, we developed an infectious Jc1-derivative that encodes a TCM within the HCV core protein and green fluorescent protein (GFP) within NS5A. These studies revealed that NS5A and core may only transiently and infrequently associate during virus particle assembly.

Conclusion: HCV RC motility may serve to shield HCV RNA genomes from host innate defence pathways and deliver progeny genomes to sites of virus assembly.
Background: Chronic hepatitis B (CHB) infection is endemic in New Zealand Maori, of whom an estimated 40% may develop liver related complications, including hepatocellular carcinoma (HCC). Longitudinal studies in Asian populations have reported low annual spontaneous HBsAg seroclearance rates (<1%). We report the 27-year follow up data on clinical and serological outcomes in Maori with early horizontally acquired HBV.

Methods: In 1984, the population of Kawerau (n=7988) was screened for markers of HBV infection and 572 (7.2%) were confirmed HBsAg+. Recently, a follow-up study was commenced to follow-up all 514 surviving individuals, including clinical assessment, blood tests and a Fibroscan™.

Results: The median age at enrolment in 1984 was 17 years (1-71). 31% were HbeAg+ in 1984 but in 2012, only 2.3% remained HbeAg+. HBsAg loss occurred in 70/218 patients (32%), with annual clearance rates of 1.2%. HBeAg negativity is associated with a higher rate of HBsAg seroconversion (43% vs 10%; p<0.0001). HBeAg loss occurred at a median age of 25 years (range 8-66) and HBsAg loss at 41 years (range 9-80). In 2012, 21% of patients (45/218) have elevated ALT and 18% have severe fibrosis (TE >8kPa). Thirty patients have commenced intensive ultrasound surveillance for HCC because of either advanced fibrosis or family history of HCC.

Conclusions: In Maori with horizontally acquired HBV infection, spontaneous rates of HBeAg and HBsAg loss are higher than those reported in Asians with vertical transmission. Despite this, more than a quarter of patients required either antiviral treatment or ultrasound surveillance for HCC.

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ENTECAVIR IN CHRONIC HEPATITIS B – “REAL WORLD” EXPERIENCE AT AUCKLAND CITY HOSPITAL

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Introduction: Entecavir is an approved and fully funded oral antiviral treatment for New Zealanders with chronic hepatitis B. Global registration trials demonstrated excellent safety and efficacy — serum HBV DNA was undetectable in 90% of patients after 48 weeks of treatment. Similar results have been reported in “real-world” experience.

Methods: This is an audit of all patients seen at the Liver Unit with Special Authority number for Entecavir. Patients who had completed 12 months of therapy were included. During entecavir treatment, all patients received 3 monthly monitoring of serum ALT level, serum HBV DNA level (Roche Taqman; LOD 12 IU/mL) and if HBeAg positive at baseline, both HBeAg and anti-HBe. Entecavir withdrawal was considered in any patient who underwent full HBeAg seroconversion (associated with undetectable HBV DNA), after 12 months consolidation therapy. If poor viral suppression was identified, clinic letters were reviewed to assess for treatment adherence and resistance studies.

Results: Entecavir was approved in 351 patients, of whom 134 had received 12 months therapy. 59 were HBeAg positive and 75 were HBeAg negative. Of the HBeAg positive patients, 10 underwent successful HBeAg seroconversion (16.9%), 43 remained eAg positive (72.9%) and 6 were not retested (10.2%). Of the 49 that remained eAg positive HBV DNA was undetectable in 11 (22.4%), ≤3 log in 25 (51%), > 3 log but trending down in 7 (14.3%). Six patients (12.2%) had no virologic response, of whom 5 had documented poor treatment adherence. Sequencing studies did not identify resistance mutations. Of the HBeAg negative patients, 64 (85.3%) had undetectable HBV DNA at 12 months, and an additional 8 (10.7%) had level suppressed below 3 log IU/mL. The remaining 3 patients (4%) were lost to follow-up. ALT normalised in 82.7% and 79.7% of eAg negative and positive patients respectively.

Conclusion: Real life experience with entecavir reflects published trial results, with 96% and 76% viral suppression in eAg negative and positive chronic hepatitis B patients respectively. Lack of response reflected poor adherence rather than entecavir resistance. Early recognition of poor adherence with appropriate intervention is required to optimize the outcomes of patients on long-term entecavir therapy.

Disclosure of Interest Statement: None
ADHERENCE TO HEPATITIS B VIRUS ANTI-VIRAL THERAPIES

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Introduction: Adherence to hepatitis B virus (HBV) anti-viral therapies is imperative to suppress HBV, prevent hepatic flares and development of drug resistance. Few studies have examined adherence to HBV oral therapies. This qualitative study aims to explore patterns of HBV treatment adherence, barriers to adherence and patient knowledge and to identify factors influencing adherence and non-adherence.

Methods: Demographic information and virology results were collected, and in-depth audio-recorded interviews conducted with patients undergoing HBV anti-viral therapy at 3 tertiary hospital liver clinics in Sydney, Australia. Recordings were transcribed verbatim and transcripts checked for accuracy. Transcripts were uploaded and coded using N Vivo software. Data were analysed using the constant comparative method to establish analytical categories and dominant themes. Demographic data were analysed using SPSS.

Results: Participants (n=21), had been diagnosed for a mean of 16 years (SD 12yrs) and prescribed oral HBV therapies for a mean of 5 years (SD 6yrs). An interplay of multiple factors influenced patient medication adherence or non adherence. Most participants (n=12) self reported being adherent. However, during the interview, 3 of these 12 described rare unintentional occasions of non adherence. Non-adherent participants (n=9) reported between 1-22 consecutive days of missed treatment. Adherent participants described a disciplined daily routine, HBV treatment knowledge, a desire to be healthy, and clinicians providing positive reinforcement. Forgetfulness, routine interruption, and hospital infrastructure contributed to occasional missed doses. Non-adherent participants described having limited English language comprehension which may in turn have contributed to self-reported limited treatment knowledge, disclosure issues around treatment, sub-optimal clinician-patient communication, and poor adjustment to treatment initiation.

Conclusion: Medication adherence is complex and influenced by multiple factors. Study findings provide preliminary insight into why and how patients manage HBV treatment. Qualitative data collection is ongoing. Final results will be presented, and will be used to develop future multi-site quantitative study.
PERINATAL MANAGEMENT OF HEPATITIS B POSITIVE MOTHERS AND THEIR INFANTS


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Introduction: Hepatitis B virus (HBV) can be transmitted from infected mothers to their infants. Neonatal administration of HBV immunoglobulin (HBIG) and HBV vaccine usually prevents transmission. HBeAg positive mothers with very high viral loads can transmit the virus despite neonatal prophylaxis; this can be prevented by anti-viral therapy in the last trimester. The Hepatitis Foundation tests people infected with HBV six monthly to identify those requiring treatment. Referral to their service should be offered to all those with HBV infection.

Methods: HBsAg positive mothers were retrospectively identified from the Middlemore Hospital Birthing Unit database (October 2010 to July 2011). Using the hospitals electronic laboratory record (Éclair) a search was performed to determine if appropriate investigations (ALT, HBeAg, viral load) were performed. Data on HBIG administration, vaccination and five-month HBV infant serology were collected from Éclair and the National Immunisation register. The Hepatitis Foundation provided data on enrolment to their surveillance program.

Results: Ninety-two HBsAg positive mothers were identified out of 6732 deliveries (1.4%). Thirty-four were known to the Hepatitis Foundation. Fifty-four had an ALT checked. Sixty were checked for HBeAg, 14 were positive but only 2 had a viral load performed. Both these women received prophylactic anti-viral therapy. Eighty infants received HBIG and vaccination at birth. Of the 46 infants older than 5 months, 28 had all three HBV vaccinations and 3 had HBV serology.

Conclusion: There is considerable room for improvement in the perinatal management of HBV at Middlemore Hospital.
ANTIVIRAL TREATMENT OF CHRONIC HBV INFECTION IN REMOTE-DWELLING ABORIGINAL PATIENTS IN AUSTRALIA’S NORTHERN TERRITORY

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Introduction: The feasibility and effectiveness of treating remote-dwelling Australian Aboriginal people with oral antiviral medication for HBV has not been previously assessed. Due to many barriers, including concerns about adherence, many clinicians are reluctant to commence oral antiviral therapy for HBV in remote-dwelling Aboriginal people.

Methods: A retrospective audit of pharmacy dispensing records for oral HBV agents was performed for the period 2008-2012. These data were then matched to demographic and clinical information, and stratified by Indigenous status, living location and indication (Hepatitis B itself, pregnancy, or immunosuppression). We determined the proportion of remote-dwelling Aboriginal patients on HBV treatment who achieved the following endpoints: i) Still receiving treatment at 1 year following initiation; ii) Complete virological response (undetectable HBV viral load at most recent measurement); iii) Partial virological response (viral load <2,000 IU/ml at most recent measurement).

Results: 175 individuals were prescribed antiviral therapy for HBV, of whom 50 were Aboriginal and 38 of these lived in a remote area. Of these 38, 20 (53%) were on therapy for HBV itself, 12 (32%) only whilst receiving immunosuppressive medication and 6 (16%) only during late pregnancy to prevent mother-to-child transmission. Of the 20 remote-dwelling Aboriginal patients treated for HBV, 14 remained on therapy for at least 1 year, of whom 9 (64%) had an undetectable viral-load at last measurement.

Conclusion: While there remain significant challenges, it is feasible and effective to provide oral antiviral therapy for HBV therapy remote-dwelling Aboriginal people. Patient education is essential to improve adherence but there is currently a lack of culturally appropriate tools to do this in this setting. To ensure good outcomes, adequate resourcing is needed at multiple levels including clinical co-ordination, drug delivery systems, laboratory monitoring and participation of primary health care centres.
CHRONIC HEPATITIS B: AN EXPLORATION OF CURRENT AWARENESS AND PRACTICE IN PRIMARY HEALTH CARE IN NORTH QUEENSLAND

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Introduction: Research indicates that knowledge regarding chronic hepatitis B (CHB) is inadequate in general practitioners (GPs). Many GPs are, for example, unaware of the increased risk in CALD populations, the availability of antiviral therapy, or the association of CHB with primary liver cancer. Consequently, too many CHB cases remain undetected or do not receive appropriate care after diagnosis. For example, few women testing positive during pregnancy are followed up after giving birth. Early detection and regular monitoring are crucial in the prevention of CHB-related liver disease. Currently, at least one third of estimated CHB cases in Australia are undiagnosed and <3% receive treatment. The need for increased GP involvement is emphasized in the first National Hepatitis B Strategy, and the aim of this study is to explore gaps in current CHB awareness and practice in North Queensland GPs.

Methods: A questionnaire was constructed covering demographics, barriers, hepatitis B knowledge, antenatal care, awareness of resources, and educational preferences. Some questions represent the theoretical constructs of perceived threat and efficacy to investigate associations with GP decisions. In addition, questions regarding patients from CALD backgrounds, including language issues, are included. All items were checked for acceptability by practicing clinicians. GPs are recruited via the Rural Far North Queensland Division of General Practice website and newsletter.

Results: Data collection and analyses are proceeding but early reports from some GPs indicate a need for broader knowledge of hepatitis B management. Also, community consultation suggests that language and cultural barriers currently hinder effective doctor/patient communication with CALD patients potentially affected by CHB.

Conclusion: The results will lead to recommendations for addressing specific educational needs in North Queensland GPs which will inform the future delivery of the new National Hepatitis B Curriculum in North Queensland and beyond.
HIGH BUT DECLINING HCV INCIDENCE IN PEOPLE WHO INJECT DRUGS IN SYDNEY, AUSTRALIA

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Introduction: Australian surveillance data indicate that incidence of hepatitis C virus (HCV) infection may have declined at a population level, but little is known about recent incidence among people who inject drugs (PWID). This study estimates HCV incidence and associated risk factors in a community cohort of PWID in Sydney.

Methods: HITS-c is an ongoing prospective cohort of anti-HCV antibody negative PWID. Participants completed quarterly questionnaires and blood samples were collected every 24 weeks for anti-HCV and HCV RNA testing. Date of infection was estimated using the mid-point between last negative and first positive antibody test. Incidence was determined using the person-time method and Cox proportional hazards models were used to examine independent associations with seroconversion.

Results: Between 2008 and 2011, 156 anti-HCV negative participants completed baseline assessments. The median age was 27 years, a majority (76%) was male and most (79%) were born in Australia. Retention at 48 and 96 weeks was 88% and 75%, respectively. Seventeen anti-HCV seroconversions were observed, resulting in incidence of 7.9/100py (95% CI 4.9-12.7). Factors associated with incident HCV in univariate analysis were younger age (p=0.01), culturally and linguistically diverse (CALD) background (p=0.05), daily or more frequent injecting (p=0.002), mainly injecting heroin (p= 0.04) and recent receptive syringe sharing (p=0.02). In adjusted analyses, incident HCV was associated with CALD background (HR 3.0; 95% CI 1.0-9.1, p=0.05) and daily or more frequent injecting (HR 4.4; 95% CI 1.3-15.1, p=0.02) at baseline.

Conclusion: Previous research documented HCV incidence of 45.8/100py among PWID in Sydney. Our results suggest that incidence in this group is lower than previously reported. Declines in population level HCV incidence in Australia may relate to both reductions in individual risk and PWID population size. Despite these encouraging trends, our data suggest that young injectors from CALD backgrounds remain at high risk.

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IMPACT OF DISCLOSURE OF HEPATITIS C VIRUS INFECTION ON INJECTING FREQUENCY AND BEHAVIOUR IN A NETWORK OF PEOPLE WHO INJECT DRUGS

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Introduction: People who inject drugs (PWID) are the group at greatest risk of hepatitis C virus (HCV). It seems plausible that PWID who receive a diagnosis of HCV will reduce their injecting risk out of concern for their injecting partners. However, evidence of the benefits of HCV screening in this population as a means of reducing HCV transmission is lacking. The aim of this study was to determine whether, in a cohort of PWID, disclosure of HCV infection and post-test counselling was associated with a change in injecting behaviour.

Methods: Prospective, longitudinal study of PWID recruited from street drug markets across Melbourne. Face-to-face interviews and HCV testing were conducted at 3-monthly intervals. The association between HCV disclosure and i) injecting frequency, ii) injecting equipment borrowing, and iii) number of people injected with, was examined using generalized estimating equations (GEE) analysis.

Results: Thirty-five individuals in the cohort received a disclosure of HCV during the study period, and 164 did not. Being given a positive HCV result was associated with a decrease of 0.35 injections per month (p = 0.046) in a multivariable model correcting for pre-disclosure injecting frequency and gender, but there was no significant association between HCV disclosure and injecting equipment borrowing. Analysis of the group who did not receive a disclosure showed no significant association between time since study entry and injecting frequency (p = 0.093).

Conclusions: Disclosure of HCV was associated with a significant reduction in injecting frequency in a small group of active PWID. This association should be investigated further in larger studies examining a wider range of injecting risk behaviours.
QUANTIFYING THE FRACTION OF CIRRHOSIS ATTRIBUTABLE TO ALCOHOL AMONG PATIENTS CHRONICALLY INFECTED WITH HEPATITIS C: IMPLICATIONS FOR TREATMENT COST-EFFECTIVENESS STUDIES

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Introduction: A substantial baseline risk of liver cirrhosis, likely fuelled by alcohol, exists in patients with chronic hepatitis C virus (HCV) infection. Our aim was to determine the fraction of cirrhosis attributable to past heavy alcohol use, among chronic HCV patients. Further, we assess the extent to which past heavy alcohol use is accounted for in treatment cost-effectiveness analyses (CEA).

Methods: The study population comprised chronic HCV patients who had attended one of five clinics in Scotland during 1996-2010, and had (i) remained in follow-up for at least six months, (ii) acquired HCV through either injecting drugs or blood transfusion, and (iii) reported a date/year of infection. Predictors of cirrhosis were determined from logistic regression. Multivariate regression parameters were used to determine the fraction of cirrhosis attributable to heavy alcohol use.

Results: Among 1,638 patients, 9% were diagnosed with cirrhosis, and 34% had a history of past heavy alcohol use (>50 units/wk for a sustained period). Significant predictors of cirrhosis were age, duration of infection, and past heavy alcohol use. The fraction of cirrhosis attributable to past heavy alcohol use was 36.0% (95% CI: 24.8-48.0). Moreover, among patients with a history of past heavy alcohol use specifically, the attributable fraction exceeded 50% (61.5%, 95% CI: 47.9-72.7).

Conclusion: These data indicate that among liver clinic attendees, the fraction of cirrhosis cases attributable to alcohol, is substantial. For example, more than a third of cirrhosis cases (36.0%; 95% CI: 24.8-48.0%) would not have occurred, over the time frame of this study, had patients not previously engaged in heavy alcohol consumption. The contribution of past heavy alcohol use has not been fully acknowledged by CEAs. These data are therefore important to guide future CEAs, in terms of taking better account of the baseline risk of cirrhosis among patients with chronic HCV.

Disclosure of Interest Statement: No conflicts of interest to declare.
BEHAVIOURAL SEQUELAE OF HEPATITIS C SCREENING AND INFECTION DISCLOSURE AMONG ACTIVE INJECTION DRUG USERS: A LONGITUDINAL STUDY

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Background: Disclosure of hepatitis C (HCV) positive status has been found to have a short-term impact on subsequent alcohol, drug use and injection behaviours among injection drug users (IDU). Whether behaviour changes occur also among IDUs testing HCV-negative, and whether initial changes extend over time remain to be established.

Objectives: To longitudinally assess and compare substance use and injection behaviours following HCV status disclosure among IDUs recently screened for HCV.

Methods: Initially HCV-seronegative IDUs (n=208), were followed prospectively between 2004 and 2011 in Montreal, Canada. Semi-annual visits included blood sampling and an interview-administered questionnaire assessing substance use and injection behaviours. General estimating equations were conducted to assess substance use and behaviour changes overtime (expressed as OR and 95%CI per 3-month increment, adjusted for baseline characteristics). A generalised additive model (GAM) procedure with spline smoothing was used to assess non-linear changes overtime.

Results: Of the 208 participants (83% male; mean age 34.7 years, mean follow-up time 39 months), 69 seroconverted to HCV. Reductions of alcohol use [HCV+: 0.94 (0.89, 1.0); HCV-: 0.95 (0.92, 0.99)], intravenous (IV) heroin [HCV+: 0.94 (0.84, 0.97; HCV-: 0.98 (0.94, 1.03)], IV cocaine [HCV+: 0.90 (0.86, 0.95; HCV-: 0.95 (0.92, 0.98)] and syringe sharing [HCV+: 0.84 (0.76, 0.93; HCV-: 0.94 (0.89, 0.99)] were observed in both groups. GAM fit showed that changes overtime differed between the two groups. Among HCV seroconverters, reduction in alcohol, drug use and syringe sharing was sustained overtime. Among participants staying HCV-seronegative, the initial reduction was followed by a subsequent increase of these behaviours.

Conclusions: HCV status disclosure was followed by sustained changes among IDUs screened positive but not among those screened negative for HCV. With the recent emphasis on HCV testing and treatment, our results suggest the need for sustained risk reduction messages tailored to IDUs at risk of acquiring HCV.

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ASSOCIATION BETWEEN HARM REDUCTION INTERVENTION UPTAKE AND HCV PREVALENCE AND INCIDENCE AMONG INJECTING DRUG USERS ATTENDING SITES THAT PROVIDE STERILE INJECTING EQUIPMENT IN SCOTLAND

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Introduction: Prevalence of the hepatitis C virus (HCV) among injecting drug users (IDUs) in Scotland is high. The Scottish Government has invested significantly in harm reduction interventions with the goal of reducing HCV transmission among IDUs. In evaluating the effectiveness of interventions, estimates of HCV incidence are essential.

Methods: During 2008-2009, IDUs were recruited from services providing sterile injecting equipment across mainland Scotland, completed an interviewer-administered questionnaire and provided a dried blood spot for anonymous anti-HCV and HCV-RNA testing. Recent infections were defined as anti-HCV negative and HCV-RNA positive. Logistic regression was undertaken to examine associations between recent HCV infection and self-reported uptake of methadone maintenance therapy (MMT) and injection equipment.

Results: Fifty-four percent (1367/2555) of participants were anti-HCV positive. We detected 24 recent HCV infections, yielding incidence rate estimates ranging from 10.8-21.9 per 100 person-years. In unadjusted analyses, variables that were highly associated with recent infection were excessive alcohol and sharing needles/syringes (+/- other equipment) or other equipment only with a known HCV-positive person. After adjustment for confounders, those with high needle/syringe coverage had reduced odds of recent infection (AOR 0.32, 95% CI 0.10-1.00, p=0.050). In the Greater Glasgow & Clyde region only, we observed a reduced odds of recent infection among those currently receiving MMT, relative to those on MMT in the last six months but not currently (AOR 0.04, 95% CI 0.001-1.07, p=0.055). The effect of combined uptake of MMT & needle/syringe coverage was only significant in unadjusted analyses (OR 0.34, 95% CI 0.12-0.97, p=0.043; AOR 0.48, 95% CI 0.16-1.48, p=0.203).

Conclusion: We report the first large-scale, national application of a novel method designed to determine incidence of HCV among IDUs using a cross-sectional design. Subsequent sweeps of this survey will be undertaken to increase statistical power and allow us to gauge the impact of preventive interventions.
ASSESSMENT AND TREATMENT OF HEPATITIS C VIRUS INFECTION AMONG PEOPLE WHO INJECT DRUGS IN THE OPIOID SUBSTITUTION SETTING: THE ETHOS STUDY

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Introduction: Despite advances in hepatitis C virus (HCV) treatment, treatment uptake remains low among people who inject drugs (PWID). Assessment and HCV treatment uptake was evaluated among PWID with chronic HCV infection.

Methods: Enhancing the Treatment for Hepatitis C in Opioid Substitution Settings (ETHOS) is a prospective cohort examining HCV treatment uptake, response and re-infection. Recruitment is through a network of nine opiate substitution treatment (OST) and community-based clinics in New South Wales. Eligibility criteria include chronic HCV and history of injecting drug use.

Results: Overall, 385 participants have been enrolled. Data was analysed on the initial 237 participants. The mean age was 40 years, and the majority were male (71%). Seventy-seven percent were currently receiving OST, including 57% (n= 134) on methadone and 20% (n=48) on buprenorphine. Of 237 participants, 66% (n=157) were referred to a specialist regarding HCV treatment, 44% (n=104) attended the appointment, and 19% (n=46) were commenced on HCV treatment. In adjusted analysis, specialist referral was less common among those recently imprisoned (past 6 months) [adjusted odds ratio (AOR) 0.23; 95% CI: 0.08, 0.68]. In adjusted analysis HCV treatment uptake was more common among participants who had finished high school (AOR 2.29; 95% CI: 1.09, 4.81), those currently receiving buprenorphine (AOR 4.19; 95% CI 1.26, 13.92), and those with HCV genotype 2 or 3 (AOR 4.20; 95% CI: 1.81, 9.75). HCV treatment uptake was less common among participants with suicidal ideation (AOR 0.09, 95% CI: 0.01, 0.76) and recent benzodiazepine use (past 6 months) (AOR 0.28; 95% CI: 0.11, 0.71).

Conclusion: The initial stages of the ETHOS study have demonstrated that a high proportion of participants are being referred for HCV specialist assessment, with most attending their assessment. Both demographic and clinical factors appear to influence HCV treatment uptake in PWID.
Background: A nurse-led Hepatitis C Community Clinic (HCCC) was established alongside the Needle Exchange in Christchurch, New Zealand in early 2009. The Clinic aims to improve access to hepatitis C diagnosis, management, support and an integrated referral pathway to secondary care-based antiviral hepatitis C treatment. Although open to anyone, the Clinic’s targeted population is past or current injecting drug users.

In the last 18 months Christchurch has experienced two major earthquakes and continuing aftershocks. Many healthcare agencies have been displaced and some, like the HCCC, have had to be demolished. In the aftermath of the earthquakes, clients of the HCCC have encountered road and transport limitations, four changes in location and fragmented pathways to other services. This paper examines the impact on the HCCC’s services and how it and its clients have responded to extraordinary circumstances particularly following the earthquakes.

Methods: This paper presents a descriptive analysis of service and client data collected by the HCCC, focussing on pre and post-earthquake comparisons. Key aspects of service delivery are also examined, including client characteristics, referral sources and community outreach interventions.

Results: Despite a drop in client numbers immediately following the major earthquakes, there has subsequently been a consistent growth in new clients. The HCCC currently actively manages 271 clients, providing ongoing follow-up management, support and referral. To date 110 clients have been referred to secondary care for hepatitis C anti-viral treatment, 32 of these over the last four months. Only one did not attend their first specialist appointment and only five were lost to follow-up (a DNA rate of less than 5%).

Conclusions: The HCCC has improved access to hepatitis C healthcare despite the impact of a major disaster in the region. Clients and staff have shown resilience in the face of disaster to achieve that.
PROVIDING HEPATITIS C CARE AND TREATMENT IN OPIATE SUBSTITUTION SETTINGS: A QUALITATIVE EVALUATION OF FOUR ETHOS SITES

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Introduction: The ETHOS project aims to undertake a comprehensive evaluation of the provision of hepatitis C (HCV) care and treatment in opiate substitution treatment (OST) setting. The aims of this qualitative sub-study were to evaluate: (1) patient and provider attitudes towards the provision of services for assessment and treatment of HCV infection in OST.

Methods: Qualitative interviews were conducted in four ETHOS sites including two with peer support programs. Participants included staff (OST clinicians and managers and HCV clinicians), clients (representing varying degrees of engagement with HCV care) and peer workers.

Results: Overall, participants reported positive experiences regarding the provision of HCV care within OST. Clients consistently lauded the logical and appropriate co-location of HCV care and treatment in settings where its high prevalence is common knowledge. Clients reported that having HCV care “in your face” – i.e. onsite – served as a welcome reminder that treatment was an available and viable option. Similarly, clinicians welcomed the increased availability of tangible and effective assistance for clients perceiving a closer fit between their duty of care and responsibilities in caring for OST clients. Both clients and clinicians noted positive changes in the atmosphere of OST clinics as a result of this initiative, particularly in those sites providing peer support programs.

Conclusion: Across the four pilot sites participants identified a range of positive experiences emerging from the trial. For clinicians, the opportunity to proactively engage in the care and treatment of OST clients living with HCV was key. For clients, the introduction of HCV treatment was noteworthy as both a practical, clinical intervention and as a ‘gesture’ of care – a sense of being listened and responded to. These perceptions were significant for both groups given the historical frustrations and limitations associated with both the traditional tertiary hospital HCV treatment pathway and OST programs.
Increasing Attendance for Hepatitis C Care: Service Delivery Models That Attract Clients

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Introduction: Hepatitis C is a complex, chronic and infectious disease with an unpredictable course that affects approximately 250,000 Canadians. Those affected require ongoing engagement with health services that monitor and manage disease progression and prevent excess morbidity and premature death. Although, studies indicate that attendance rates for hepatitis C care are between 20-72% no studies have examined the reasons for this.

Methods: This descriptive interpretive study, conducted in 2011 across five Canadian provinces, explored personal, interpersonal and health system factors that contributed to attendance from both patient and provider perspectives. Through purposive sampling techniques 84 participants, 55 patients and 29 health and social care providers, were recruited and interviewed. The taped and transcribed interviews were coded and thematically analyzed. There was congruence between patient and provider participant perspectives.

Results: This presentation will focus on the health systems factors that contributed to attendance. Three interconnected themes, one at the provider and the other two at the systems level, were identified: provider relationship, restrictive policies and service delivery model. The reasons for attendance could vary with the type of relationships that had been established with the care providers and the way the services were organized and delivered. Participants preferred providers that had up to date knowledge, used a client centered approach focused on engaging them where they were at and that attended to confidentiality. Participants favored a low barrier, comprehensive service delivery model that integrates health and social supports to address the complex and diverse needs of people with this chronic condition.

Conclusion: This is the first national hepatitis C study to describe the health systems factors that influence attendance at care from client and provider perspectives. Recommendations will inform the development of resources and programs aimed at improving service quality and uptake.

Disclosure of Interest Statement: None to disclose.
PAPER NUMBER 72

ACCEPTABILITY OF PSYCHOLOGICAL SUPPORT IN AUSTRALIANS LIVING WITH CHRONIC HEPATITIS C

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Introduction: Psychiatric disorders are highly prevalent in chronic hepatitis C (CHC) patients and have significant clinical implications. Treatment research has largely been limited to pharmacotherapy during anti-viral treatment and psychotherapy may be a beneficial adjunct or alternative treatment. As patient preferences can affect treatment uptake, adherence, and success, this research aimed to assess the acceptability of multiple psychological supports in CHC patients and explore the predictors of acceptability.

Methods: A cross-sectional postal survey of CHC outpatients from the Royal Adelaide Hospital and online survey of Australians living with CHC was conducted. The survey assessed demographic, medical, and disease-related variables, past uptake of, and satisfaction with, mental health services, and acceptability of psychological supports, including formal (pharmacotherapy [PH], individual psychotherapy [IP], and group psychotherapy [GP]) and informal supports (self-directed book therapy [BT] and E-therapy [ET]). The Depression Anxiety Stress Scales and MOS Social Support Survey were also administered.

Results: The final sample of 156 patients (58% male) was aged 26 to 79 years and comprised 89 (57%) postal responses. Depression, anxiety, stress, and social support were all significantly worse than norms. The most acceptable support type was IP (83%; 95% CI: 76-89), followed by BT (61%; 95%CI: 53-69%), PH (56%; 95%CI: 48-64%), ET (45%; 95%CI: 37-53%), and GP (37%; 95%CI: 29-45%). IP was significantly more acceptable than any other support type. The key independent predictors of support acceptability were satisfaction with past use of the relevant support type (IP, PH, and BT) and socio-economic status (ET).

Conclusion: Considering the importance of patient preferences and the strong relationship between satisfaction with past service use and acceptability, future research should focus on the development and evaluation of a mental health treatment protocol tailored specifically to CHC patients. Due to its significantly higher acceptability, IP may be an ideal basis for this protocol.
WE ASK QUESTIONS, BUT ARE WE ASKING THE RIGHT QUESTIONS?

Poeder F1

1Australian Injecting & Illicit Drug Users League (AIVL)

Introduction: There can be no doubt that the needle and syringe programs (NSP) are a fundamental blood borne virus prevention strategy. However, can the collection of NSP client data act as a barrier to access? Additionally, are NSPs collecting data for data-collection sake? How do we interpret the data that is collected when the questions asked have variable meanings? This presentation addresses these questions and delves into this largely unacknowledged area: the collection of data as a potentially damaging process.

Methods: In 2010, the Australian Injecting and Illicit Drug Users League developed a discussion paper in relation to barriers to NSP and equipment access, through that process data collection emerged as a controversial issue for many people who inject drugs (PWID).

Since this time, AIVL has collated extensive material on NSP data collection, data ‘fields’ and have interviewed many PWID in regards to thoughts and concerns in relation to the issue.

Results: Concerns emerging from the review of the material gathered and interviews include that; the very nature of NSP data collection can act as a barrier to service access; interpretation of themes including ‘peer distribution’ and ‘equipment sharing’ are potentially so muddied that it could be detrimental to PWID; and there are such inconsistencies in NSP data collection between and within jurisdictions that there exist huge gaps in relation to who is and isn’t accessing this fundamental BBV prevention strategy.

Conclusion: This presentation discusses concept that NSP data collection could be its own worst enemy. Further, it makes recommendations in relation to NSP data collection that could change the nature of service delivery and improve access to this important BBV initiative to the most marginalized and stigmatized PWID.
PAPER NUMBER 76
REDESIGNING RESPONSIBILITY: HEPATITIS C PREVENTION IN SEXUAL PARTNERSHIPS
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Introduction: In Australia, most hepatitis C transmission occurs through sharing drug-injecting equipment, and most sharing occurs between sexual partners. Despite this, little is known about how injecting practice, including equipment use, is negotiated in these partnerships.

Methods: This presentation draws on science studies theory and qualitative interview material collected in a pilot study to illuminate these issues. Responsibility for avoiding transmission has long been conceived individually, as have measures intended to aid individuals in fulfilling this responsibility, such as the distribution of clean injecting equipment. This individualising tendency has been criticised for inequitably responsibilising disadvantaged people. This presentation proposes a different approach. Rather than treating hepatitis C as a stable object that pre-exists its encounter with individuals, social relationships and the material objects used in injecting, it treats it as made in its encounters with these phenomena. In turn it sees transmission in new terms; as a question of social relationships and object design.

Results: Interview participants described more risky injecting practices with partners than with friends. Their decisions about sharing needles were shaped by the unique forms of intimacy between partners, and the shared meanings they gave the object of the syringe. They also talked about how their injecting behaviour was 'co-created' with their partners and the equipment at hand, becoming part of a ritualised routine. These findings suggest a need to reimagine prevention measures beyond statements about individual behaviour change.

Conclusion: Based on these findings a new NHMRC-funded research project has begun developing two innovations: 1) new prevention measures aimed at partnerships rather than individuals, and 2) a new fit-pack that treats the partnership as a primary unit of address and resourcing. The presentation discusses these innovations and closes by considering the politics of this shift in focus from individual behaviour to social relationships and equipment design.
CHARACTERISING HEPATITIS B IN NORTHERN AUSTRALIA BY MOLECULAR EPIDEMIOLOGY – THE CHARM NT STUDY

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Background: The hepatitis B virus (HBV) was first described in the blood of an Indigenous Australian man, yet very little is currently known about the molecular epidemiology of HBV in this population. We aimed to determine which HBV genotypes are present in Northern Territory (NT) Indigenous Australians, and to explore any clinical correlates.

Methods: Following ethics approval and informed consent, we obtained blood specimens and clinical details from Indigenous adults known to be infected with HBV, and who were born and grew up in the NT. Hepatitis B genotypes were determined in isolates with sufficient HBV DNA by PCR and sequencing of the polymerase gene, with sequences submitted toSeqHepB to establish genotype and the presence of clinically significant mutations.

Results: Since June 2010 62 patients were recruited from across five different regions of the NT. Thirty one were female with an average age of 37.1 years. Sixteen had an insufficient viral load for genotyping. Of the remaining 46, 100% were infected with genotype C4, previously reported only from two Indigenous Australians from Queensland. Thirty one patients (50%) were Hepatitis B e antigen (HBeAg) positive and 53% were Hepatitis B e antibody (HBeAb positive). Median ALT was 26 (IQR 17-44), median viral load 36,565 IU/ml (IQR 374-117340827 IU/ml). No patients had any co-infection with Hepatitis C, D or HIV viruses. All isolates had wild-type polymerase gene sequences, despite 12 currently or previously receiving antivirals for HBV. The canonical sG145R vaccine-escape variant was detected in the surface antigen of virus from two patients.

Conclusions: The exclusive HBV genotype in this ancient and genetically homogenous population was genotype C4. Whole genome sequencing and clinical follow up of this cohort are in progress looking at elucidating the clinical significance of these findings.
CHARACTERISATION OF IFN-LAMDBA PRODUCING CELLS IN CHRONIC HCV INFECTION

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Introduction: The newly described group of IFN-λ cytokines (also known as IL-28A, IL-28B, IL-29) display functional similarity to IFN-α in the immune response to HCV infection. Recent genome-wide association studies have identified single nucleotide polymorphisms (SNPs), proximally located to the IL-28B gene, associated with the clearance of chronic HCV infection in individuals treated with IFN-α therapy. Little is known, however, about either the functional contribution of SNPs to the magnitude of IFN-λ production or frequency of IFN-λ producing cells, or the contribution of specific cellular subpopulations.

Methods: A human ELISpot has been developed to quantitate the frequency of IFN-λ producing PBMC subpopulations in response to the dsRNA agonist, polyI:C. In combination with ELISA and flow cytometry the frequency of IFN-λ secreting cells and their productive capacity will be assessed ex vivo among a cohort of individuals who exhibit both chronic HCV infection and either a protective or non-protective IL-28B SNP haplotype.

Results: Preliminary data indicates a significant role for IFN-α in the priming of PBMCs for both high frequency, and high magnitude, IFN-λ responses. Assays of PBMC subpopulations indicate the expression of IL-28 and IL-29/28B by cells that express markers including CD141, CD1c, CD14, and CD56.

Conclusion: Overall, a significant reduction in IFN-λ production has been identified among sufferers of chronic HCV irrespective of IL-28B haplotype. It is hoped that further characterization of IFN-λ producing PBMC subpopulations will provide new insights into innate immune responses to chronic HCV.
PAPER NUMBER 33

ANALYSIS OF IL28B VARIANTS IN AN EGYPTIAN POPULATION DEFINES THE 20 KILOBASES MINIMAL REGION INVOLVED IN SPONTANEOUS CLEARANCE OF HEPATITIS C VIRUS

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Introduction: Spontaneous clearance of hepatitis C virus (HCV) occurs in ~30% of acute infections. Host genetics play a major role in HCV clearance, with a strong effect of single nucleotide polymorphisms (SNPs) of the IL28B gene already found in different populations, mostly infected with viral genotypes 1 and 3. Egypt has the highest prevalence of HCV infection in the world, which is mostly due to viral genotype 4.

Methods: We investigated the role of several IL28B SNPs in HCV spontaneous clearance in an Egyptian population. We selected nine SNPs within the IL28B genomic region covering the linkage disequilibrium (LD) block known to be associated with HCV clearance in European populations. These SNPs were genotyped in 261 HCV-infected Egyptian subjects (130 with spontaneous clearance and 131 with chronic infection).

Results: The most associated SNPs were rs12979860 (P=1.6x10^-7) and the non-synonymous IL28B SNP, rs8103142 (P=1.6x10^-7). Interestingly, three SNPs at the two bounds of the region were monomorphic, reducing the size of the LD block in which the causal variants are potentially located to ~20 kilobases.
**Introduction:** Pharmacogenomic studies indicate a single nucleotide polymorphism (SNP) close to the IL28B gene (rs12979860) is a strong predictor of a patient's likelihood of responding to HCV treatment. We report here the application of a test for rs12979860 which is appropriate for routine diagnostic laboratories and the New Zealand experience.

**Methods:** DNA was extracted from the blood of HCV genotype 1 patients and the rs12979860 SNP status (C/T allele) was determined by T-ARMS-PCR by an adaption of the method of Galmozzi E. et al. *Journal of Viral Hepatitis*, 2011; 18(5). Patient samples were from throughout New Zealand although predominantly from the Auckland region. Additional studies of allele frequencies in a cohort of Polynesian subjects with unknown HCV status were also undertaken.

**Results:** The Galmozzi E. et al. method as published could not be satisfactorily replicated by our lab. However, sequence alteration of their primers and in particular IL28B_ri enabled the C and T alleles at this locus to be distinguished more reliably. The allele frequency detected in HCV genotype 1 patients in New Zealand was C=0.64/T=0.36. The T allele however was relatively rare within a sub-population of randomly selected Polynesian subjects.

**Conclusion:** This study has successfully adapted a method for the detection of the rs12979860 SNP to an assay that can be easily interpreted and is appropriate for high-throughput diagnostic testing. The relatively high allele frequency of the rs12979860 C allele in the Polynesian population and the unique make-up of our New Zealand population indicates a higher value for the general population of New Zealand as a whole. The lower than expected frequency of the C allele in HCV genotype 1 patients in New Zealand supports the claim that the C allele at this locus improves a patient's chances of spontaneous viral clearance and recovery from HCV infection.
PLASMA IP10 LEVEL PREDICTS SPONTANEOUS CLEARANCE IN ACUTE HCV INFECTION INDEPENDENT OF IL28B GENOTYPE

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Introduction: Serum IP10 levels have been shown to be predictive of treatment-induced HCV clearance in both acute and chronic HCV infection. We assessed the value of baseline IP10 as a predictor of spontaneous clearance in acute HCV.

Methods: Patients from three cohorts of acute HCV were evaluated (ATAHC, HITS and HEPCO). Patients who were HCV RNA negative at screening and those treated <26 weeks from infection were excluded from spontaneous clearance analyses. Spontaneous clearance was defined as two undetectable HCV RNA samples >4 weeks apart. Plasma IP10 was measured by ELISA. Plasma IP10 values were compared between those with and without spontaneous clearance.

Results: Among 300, 245 (181 male, 47 HIV+) were HCV RNA+ or had persistent infection (duration ≥26 weeks) at treatment initiation. Spontaneous clearance was observed in 12% (30 of 245). IP10 levels ranged from undetectable to 3071 pg/mL (median 136 pg/mL, n=216). Baseline IP10 correlated with baseline HCV RNA (r=0.42, p<0.0001). Baseline IP10 was higher in patients with HIV/HCV (390±78 vs 207±24 pg/mL, p=0.003) and lower in patients with spontaneous clearance (median 139±22 vs 260±29 pg/mL, p<0.001). No patients with a baseline IP10 value >380 pg/mL demonstrated spontaneous clearance (0 of 31). Baseline IP10 values were higher in those with favorable IL28B (CC 17% vs. CT/CC 7%, p=0.06). Baseline IP10 values were higher in patients with unfavorable IL28B (317±51 vs. 190±48, p=0.02). Spontaneous clearance by IL28B and IP10 were as follows: unfavorable IL28B+high IP10 (>380 pg/mL) 0/13 (0%), unfavorable IL28B+low IP10 6/65 (9%), favorable IL28B+high IP10 (0%) 0/14 and favorable IL28B+low IP10 20/100 (20%).

Conclusion: High baseline IP-10 levels were associated with failure to spontaneously clear HCV. Patients with acute HCV and high baseline IP-10 levels, particularly >380 pg/mL, should be considered for early therapeutic intervention, and those with low levels should defer therapy for potential spontaneous clearance.
**PAPER NUMBER 248**

**IL28B GENOTYPE IS ASSOCIATED WITH INTRAHEPATIC INTERFERON STIMULATED GENE EXPRESSION IN HCV GENOTYPE 1 BUT NOT GENOTYPE 3 INFECTION**

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**Background:** Pre-treatment levels of intrahepatic interferon stimulated gene (ISG) expression have been associated with response to peg-interferon (peg-IFN) and ribavirin (RBV) therapy. Host IL28B genotype is strongly associated with response to therapy in patients with HCV genotype-1 infection (HCV-1). This relationship is less clear in patients with HCV-3. IL28B genotype has been associated with patterns of intrahepatic ISG expression in HCV-1 infection, with patients carrying the poor response genotypes expressing ISGs at higher levels. This has not been investigated for HCV-3. The aim of this study was to evaluate the association between IL28B genotype and liver ISG expression in patients with HCV-1 vs. HCV-3.

**Methods:** Retrospective analysis of paired serum and liver tissue from patients with HCV-1 and HCV-3 was performed. Host DNA was extracted from stored serum samples, and IL28B genotype (rs12979860) was determined using a TaqMan allelic discrimination kit. Whole liver specimens stored in RNAlater were tested for ISG expression (Mx1/ISG15/OAS1) by RT-PCR. We examined any association between levels of liver ISG expression and IL28B genotype.

**Results:** 63 patients were included: 59% HCV-1 and 41% HCV-3, 52% CC and 48% non-CC (CT/TT). HCV-3 patients were younger but there were no other significant differences between HCV-1 and HCV-3 patients. The breakdown of IL28B genotype in HCV-1 patients was 43% CC and 57% non-CC, and in HCV-3 patients was 65% CC and 35% non-CC (p=0.113). Among HCV-1 patients, levels of ISG expression were higher in non-CC IL28B genotype patients (p<0.0001, <0.0001, and 0.0046 for MX1, ISG15 and OAS1) by RT-PCR. We examined any association between levels of liver ISG expression and IL28B genotype.

**Conclusions:** The data suggest fundamental differences in the IL28B-genotype determined host response to HCV, according to viral genotype. This may be critical for response to exogenous IFN-based therapy. Further investigation of viral determinants of IFN responsiveness is warranted.
THE SOCIAL CONTEXT OF ANTI-VIRAL TREATMENT ENGAGEMENT: THE MAKING OF PATIENT CITIZENSHIP IN THE TREATMENT OF HCV AND HIV

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There is low uptake of hepatitis C treatment among people who inject drugs. At the same time, there is increasing interest in facilitating early access to treatment, including for its potential community prevention effects. This plenary seeks to map a sociological approach towards understanding the ‘problem’ of anti-viral treatment engagement. Rather than envisaging problems of treatment access and uptake primarily in relation to patient compliance and awareness, treatment engagement is explored as a product of social condition. Two key themes are developed. First, we focus on how social research can help unpack the interplay of social and environmental factors mediating treatment engagement. This helps shape a simple framework for understanding the social relations of treatment engagement. Second, using a qualitative case study, we explore how people’s experience of treatment contemplation and access creates as well as reproduces ‘patient citizenship’. Drawing on ideas of ‘biological’ and ‘therapeutic’ citizenship in the fields of medical sociology, as well as in selected studies of treatment engagement in relation to HIV, it becomes possible to discuss how entitlements to hepatitis C treatment are enabled as well as constrained. We conclude that narratives of rationed treatment expectation among people who inject drugs connect with ideas of the drug user as a less than fully acceptable or deserving citizen of treatment. This helps to identify the role of social and structural interventions in facilitating access to treatment as well as point to some of the potential limits of envisaging treatment merely in biomedical terms.
In adopting the Māori worldview: mā mua mā muri, that you make forward progress by looking backwards, this presentation will examine the successes and the remaining challenges of Hepatitis B eradication in Māori communities.

Hepatitis B has been a significant cause of morbidity and mortality for Māori and their whānau for several decades. The seminal research for the NZ Hepatitis B Immunisation Programme was undertaken in Māori communities in the Bay of Plenty in the 1980s, and it is certain that a generation of Māori newborns have benefitted from this groundbreaking programme. Yet there remains "unfinished business" for a clearly identifiable population of Māori, Pasifika and Asian New Zealanders which must guide our actions as health professionals in the near future.

Those Māori and their close contacts who were born prior to the universal immunisation programme are still at risk of Hepatitis B and renewed efforts need to be focused on identifying and supporting them. The merits of organised screening, opportunistic screening and surveillance programmes will be discussed. Engaging the future in order to eliminate and eradicate Hepatitis B in Māori communities requires a close analysis of our history over the last 25 years.
THE RIDDLE OF HCV PERSISTENCE; EARLY INTERACTIONS BETWEEN GENOMIC RNA AND CELL DEFENCE MECHANISMS
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Background: The ability of hepatitis C virus (HCV) to establish persistent infections is a key factor in both its transmission and its pathogenicity. Despite extensive investigations, the mechanistic basis of this attribute remains poorly understood with ongoing uncertainty of whether it stems from avoidance of innate or acquired arms of the immune system. We have previously observed that the genome of HCV, in common with other RNA viruses that are also capable of persistence, is highly structured with evidence for extensive internal RNA base-pairing that potentially modulates its interaction with sensor or effector pathways in the mammalian interferon system. To investigate these interactions, we developed a whole animal model, using murine norovirus (MNV) that establishes persistent, non-pathogenic infections in immunocompetent mice. Pathways responsible for the differential IFN response to structured and unstructured RNA sequences were additionally determined.

Methods: Recombinant MNV viruses were created with 2.3 KBp inserts of unstructured coding sequences in NS and capsid genes. Viruses expressed from these constructs were used to infect mice and the course of infections monitored for up to 8 months. Synthetic RNA transcripts were generated by in vitro transcription reactions from 4KBp genome regions of a range of structured and unstructured RNA virus genomes.

Results: Recombinant MNV variants with RNA structure destabilised inserts replicated in cell culture with kinetics identical to wild type (wt) virus in cell culture. Mutant and wt viruses were additionally able to infect mice although with different replication kinetics on primary infection and impaired replication ability on competition with co-infected wt virus. Moreover, mutant viruses showed markedly higher mutation rates in the insert region on long term mouse passage, with some evidence for restoration of RNA secondary structure.

Conclusions: These functional models provide the fist evidence for a direct role of RNA secondary structure in RNA virus persistence.

Disclosure of Interest Statement: The authors declare no conflict of interest,
AUSTRALIA’S FIRST NATIONAL HEPATITIS B TESTING POLICY WILL BE LAUNCHED AT THE VIRAL HEPATITIS CONFERENCE

Dr Scott Bowden – Head, Molecular Microbiology Laboratory at the Victorian Infectious Diseases Reference Laboratory (VIDRL) and Assoc Prof, Department of Microbiology, Monash University

The Hepatitis B Testing Policy policy provides advice on appropriate testing pathways for all health professionals who order and interpret hepatitis B tests.

Early diagnosis, followed by ongoing monitoring and timely treatment, can help prevent the onset of serious liver disease.

The policy provides links to supporting resources including patient information.


The portal is an online gateway to HIV, hepatitis C and hepatitis B policy documents, with links to further resources to support health professionals in making informed clinical decisions.
The past few years have seen enormous progress in the treatment of chronic HCV infection. The introduction of the first direct-acting antivirals (DAAs) has been a major breakthrough and a huge advance over standard peginterferon and ribavirin therapy. However, telaprevir and boceprevir are clearly just the tip of the iceberg. The field is moving at breakneck speed with each new international meeting providing important new results and an ever-expanding list of novel therapies. Newer, better-tolerated DAAs are in development and hold promise for highly effective, potentially interferon-free therapy in the not too distant future. With options expanding, the challenge will be to determine the best combination of agents. There are pros and cons to each of the different classes of DAAs ranging from differences in antiviral potency and resistance profile to tolerability and drug-interactions. Although it would be nice to have a one treatment fits all paradigm, it is possible that therapy will need to be tailored for individual patient groups. Different therapeutic approaches will be discussed ranging from combination therapies including peginterferon to the promise but significant challenges of interferon-free regimens. Rather than review data from all the drugs in development, critical results will be highlighted to illustrate relevant points to develop a picture of the future of HCV therapy.

Disclosures:
Consulting: Abbott, Gilead, Merck, Roche, Tibotec and Vertex
Speaking: Abbott, Merck, Roche, Vertex
DEVELOPMENT AND APPLICATION OF AN IN VITRO SYSTEM TO INVESTIGATE PROTEASE INHIBITOR SUSCEPTIBILITY AND RESISTANCE DEVELOPMENT IN HCV GENOTYPES 1-6

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Background: Protease inhibitors (PIs) have proven to be effective adjuncts to interferon/Ribavirin treatment of hepatitis C virus (HCV) infections. Little clinical or in vitro data exists, however, on their effectiveness for non-type 1 genotypes that predominate in Europe, the Middle East, Africa, and most of Asia.

Method: NS3 protease and NS4A genes from genotypes 1-6 were inserted into the JFH clone to generate replication-competent intergenotype chimeras. Susceptibility to PIs was determined by replication and infectivity assays. To study resistance development, chimeras were cultured in subinhibitory concentrations of PIs and mutations phenotypically characterized.

Results: Chimaeras constructed from reference clones or amplified from untreated HCV-infected subjects showed substantial variability in replication kinetics, attributable to naturally occurring polymorphisms in NS3 and NS4A coding regions. Marked differences in susceptibility of different genotypes to cyclic and non-cyclic PIs were observed. Genotypes 1, 4, and 6 showed median inhibitory concentration (IC50) values of 2-3 nM to BILN2061 and ITMN-191 (Danoprevir), >100-fold lower than genotypes 2/3/5 (250-750 nM). Telaprevir susceptibilities varied over a 4-fold range with genotypes 1/2 being most susceptible and genotypes 4/5 most resistant. Culture of genotypes 1-6 in PIs induced numerous mutations in the NS3 protease domain. Mutations induced by Danoprevir and BILN 2061 all conferred resistant phenotypes, with particularly large increases (1-2 log greater IC50 values) in the initially susceptible genotypes 1/4/6.

Conclusions: The chimaeras will allow future comprehensive phenotypic characterisation of naturally occurring and treatment induced mutations in each genotype for PIs in trial or entering clinical use. Although major differences were found between genotypes in their susceptibility and resistance development to PIs, equal sensitivities of genotypes 1, 4, and 6 to Danoprevir and a broader efficacy range of Telaprevir between genotypes than initially conceptualized provide strong evidence that PIs might be effectively used beyond their genotype 1 target group.

Disclosure of Interest Statement: The authors declare no conflict of interest.
PAPER NUMBER 268

CHANGING LANDSCAPE FOR HEPATITIS C PATHWAY

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Management of chronic hepatitis C (HCV) is aimed at halting disease progressions, preventing cirrhosis decompensation, reducing risk of HCC. Standard of care for many patient with HCV genotype 1 is now combination of oral protease inhibitors (Boceprevir/Telaprevir) along with Pegintereferon and Ribavirin.

Our experience has shown that patients on triple therapy need to be monitored more closely, with an increased side effect profile.

The key learning has been the importance of the multidisciplinary team working together. We have had to work more closely with dermatologist, pharmacists and virologists since commencing patients on triple therapy. It is a very exciting time in hepatitis C at the present time and we can look forward to seeing all of the benefits that these new treatments can offer.
DEVELOPMENT OF HEPATOLOGY NURSING GUIDELINES – A CONTEMPORARY, CONSENSUS-BASED GUIDE FOR HEPATOLOGY NURSING PRACTICE IN AUSTRALIA

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Background: In 2011, the Australasian Hepatology Association (AHA) embarked on the development of consensus-based nursing guidelines for the care of patients with liver disease including hepatitis B, hepatitis C, advanced liver disease and hepatocellular carcinoma (HCC). This was in response to requests from the AHA Membership to operationalise the existing AHA Competency Standards for the Hepatology Nurse (2008) and to develop a consensus on the best practice approach for hepatology nurses caring for patients with liver disease. Despite the limited research investigating the role of nurses in the delivery of care for patients with liver disease, it is widely recognised that nursing care is a fundamental component of health service delivery. In the context of limited research, the consensus of experts is regarded as a suitable substitute to establishing best practice.

Methods: The guidelines were developed using the Delphi technique to establish a consensus of opinion among experts. Seven rounds of consultation occurred between May 2011 and June 2012, with the AHA membership, hepatology nursing experts and professional experts (non-nursing). Input was captured through meetings, electronic communication and questionnaires. The information gathered through each round of consultation informed the refinement of the next iteration of the document.

Results: In total, 96 consensus guidelines were developed (25 for hepatitis B; 26 for hepatitis C; 23 for advanced liver disease and 22 for HCC). The guidelines are aligned to the relevant domains and competency standards in the AHA Competency Standards. Principles underpinning the guidelines include non-discriminatory practice, cultural competence, collaboration, partnership, patient-centred care and working within own scope of practice.

Conclusion: The guidelines have been designed to guide nursing care of people with liver disease and to assist in the development of:

• an understanding of the hepatology nurse’s role
• locally relevant policies and procedures
• nursing care plans
• a framework to identify professional development
• educational activities.

Disclosure of Interest Statement: JR and EW were employed by the AHA as Project Manager and Officer (respectively) to coordinate the development of the AHA consensus-based guidelines. Funding was provided through AHA membership, supplemented by support from Bayer, Gilead Sciences and Merck Sharp and Dohme (MSD).
PAPER NUMBER 99

ESTABLISHMENT OF THE MELBOURNE HEALTH INTEGRATED HEPATITIS B SERVICE

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Introduction: Chronic hepatitis B (CHB) infection requires lifelong clinical management. Up to one-third of people in Australia with the virus remain undiagnosed; which is an impediment to accessing appropriate clinical care. Recent improvements in the availability of and access to potent antiviral treatment for CHB mandate an enhanced response to clinical care. However, less than three percent of the population with CHB currently receives antiviral treatment. The aim of this project is to coordinate monitoring and care for people living with hepatitis B in community based clinics and develop a nurse led integrated model of hepatitis B management between primary and tertiary services, in line with the National Hepatitis B Strategy 2010-2013.

Methods: A Clinical Nurse Consultant (CNC) has been employed to develop an integrated approach to hepatitis B management between primary and tertiary services by engaging key community-based services such as high case load general practitioners, and refugee and culturally and linguistically diverse (CALD) health workers. Expert advice, support and education will be provided, and shared care arrangements established. Partnerships with community-based chronic and complex care programs and key organisations such as Medicare Locals will be developed. The CNC will also develop a data management system to track encounters with community-based services and monitor the implementation of the service.

Results: Four months into the implementation of the Integrated Hepatitis B Service, the number of primary care and community-based services engaged in the project and the evolution of models of care will be presented. In addition, the enablers and challenges to the implementation of this innovative model of care will be discussed.

Conclusion: Chronic hepatitis B contributes to a significant burden of disease in Australia. Greater engagement with primary health care professionals is essential to increase access to CHB management and care, and reduce the increasing CHB-related morbidity and mortality.
CAN PRIMARY HEALTH CARE IDENTIFY THE DIVERSE POPULATION LIVING WITH CHRONIC HEPATITIS B?

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1 Burnet Institute, 2 Cancer Council Victoria, 3 Victorian Infectious Diseases Reference Laboratory and 4 University of Melbourne.

Introduction: Chronic hepatitis B virus infection (CHB) affects diverse populations in Australia, including Indigenous Australians, ethnic groups, people who inject drug and men who have sex with men. Susceptible populations typically rely on doctors to initiate screening; however, often this does not occur or occurs too late, facilitating poor outcomes and ongoing transmission. Monitoring and early treatment can significantly improve the health of people with CHB. We outline a pilot general practice screening intervention to improve the management of populations susceptible to CHB in Victoria.

Methods: Four general practices in Melbourne provided CHB testing, prevention and monitoring of susceptible populations. The screening intervention firstly identified patients susceptible to CHB through the practice desktop system based on risk factors, including Asia-Pacific names, past injecting drug use and Indigenous status. Secondly, desktop prompts to general practitioners and a patient recall system were implemented to conduct screening and vaccination of the susceptible population within each practice.

Results: The programme algorithm identified more than 19,000 (46%) patients within the practices. Based on more than 6,000 hepatitis B-related test results, the practices are recalling a refined list of susceptible population to undergo screening and/or vaccination for the infection. Primary outcomes (available in August 2012) will include the proportion of the susceptible population screened for, diagnosed with and vaccinated against hepatitis B following the intervention.

Conclusion: CHB will become an increasingly important cause of liver cancer and liver failure in Australia in view of the large number of migrants from regions with high prevalence of infection. This pilot program aims to reduce the proportion of patients with chronic hepatitis B who have not been diagnosed by developing a clinical interface that assists primary care services in optimising diagnosis. This is a key priority area identified in Australia’s First National Hepatitis B Strategy released in 2010.

Disclosure of Interest Statement: YJW was a member of the Adult Hepatitis B Advisory Board for GlaxoSmithKline Australia and Bristol-Myers Squibb.
DOCTORS ARE DOING IT BY THEMSELVES: EXPERIENCE OF A HEPATITIS C VIRUS (HCV) TREATMENT INITIATION PILOT IN GENERAL PRACTICE IN NEW SOUTH WALES, AUSTRALIA

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Background: The Australasian Society for HIV Medicine (ASHM) is currently trialling a model of hepatitis C virus (HCV) treatment initiation in general practice settings with the aim of facilitating an increase in the number of people commencing HCV treatment in Australia.

Method: A qualitative evaluation of the pilot programme was conducted between September 2010 and November 2011. Two structured interview schedules each comprising nine open-ended questions were used to explore the experience of seven GPs and nine patients who were involved in the ASHM trial. Telephone interviews ranged from between 10 and 50 minutes and all interviews were recorded. This paper presents a descriptive analysis of the interview data.

Results: All GPs worked in opiate substitution treatment settings or treated patients with alcohol and other drug problems. The GPs’ reasons for becoming involved in HCV treatment prescribing included a desire to care for people affected by HCV, and the better targeting of people who needed HCV treatment. GPs believed they could provide a treatment service that was responsive to patients’ needs. In general, GPs reported that the shared care arrangements they had with liver clinics worked well. However there were several minor problems discussed, like responsibility for PCR testing, and some patients had had difficulty in travelling lengthy distances to access drug dispensing points. In addition, this evaluation found that patients valued the trust and rapport they had built with their GPs and they appreciated the convenience of reduced waiting time and not having to travel long distances to access treatment.

Conclusion: HCV treatment through general practice is a viable model. While teething problems were cited, GPs and their patients were on the whole happy with the model. Ongoing training of GPs is needed to facilitate uptake of new HCV treatments.

Disclosure of Interest Statement: NA
**PAPER NUMBER 126**

**GROWING BURDEN OF HCV-RELATED ADVANCED LIVER DISEASE RELATED TO ENHANCED FIBROSCAN-BASED SCREENING**

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**Introduction:** The estimated burden of HCV-related advanced liver disease in Australia is escalating, related to high HCV prevalence and an “ageing cohort” effect with increasingly large numbers having been infected for more than 20 years. The introduction of Fibroscan-based liver disease staging has the potential to both increase and accelerate HCV disease assessment. The aim of this study was to evaluate the burden of cirrhosis detection through Fibroscan-based assessment in order to inform a needs assessment for an advanced liver disease clinic.

**Methods:** All initial Fibroscan assessments for HCV-infected patients were included, since incorporation into clinical assessment at St Vincent’s Hospital, Sydney Viral Hepatitis Service in late 2008. The proportion of patients with Fibroscan-based cirrhosis (>=13.0 kPa) was determined for the total study period, and by year.

**Results:** Over the period 2008-2012, 884 HCV-infected patients (17% with HIV or HBV co-infection) have undergone Fibroscan-based disease staging, with 140 (16%) identified with cirrhosis on their initial assessment. Among those with cirrhosis, Fibroscan score was 13-29 kPa (74%), 30-49 kPa (21%), and 50+ kPa (5%). The proportion of patients with cirrhosis on their initial assessment has been relatively stable (2009, 39/227 (17%); 2010, 44/284 (15%); 2011, 42/277 (15%)), however, the total number of patients with identified cirrhosis requiring clinical management is growing rapidly. An advanced liver disease clinic has commenced, with specific protocols including standardized follow-up for hepatocellular carcinoma (HCC) surveillance.

**Conclusion:** There is a growing need for clinical management programs directed towards HCV-related advanced liver disease. Fibroscan-based staging has enhanced overall disease assessment and enabled identification of large numbers of patients with HCV-related cirrhosis. Effective management for the escalating number of patients with identified cirrhosis will require considerable further investment in HCV-related clinical care.
PAPER NUMBER 236
TRANSIENT ELASTOGRAPHY FOR FIBROSIS STAGING IN PATIENTS WITH CHRONIC HEPATITIS B, HEPATITIS C AND NON-ALCOHOLIC FATTY LIVER DISEASE. A SINGLE CENTRE EXPERIENCE

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Introduction: Transient elastography (TE), (Fibroscan®) has become the preferred non-invasive method of staging chronic hepatitis B (CHB), hepatitis C (HCV), and Non-alcoholic fatty liver disease (NAFLD). Discordance between liver fibrosis estimated by liver biopsy and TE is more frequent in patients with obesity. To improve the reliability of TE in overweight patients, the XL probe has been developed. The aim of this analysis was to evaluate the clinical utility of TE.

Methods: Fibroscans performed by the New Zealand Liver Transplant Unit (June 2009 to May 2012) were retrospectively assessed. Analysis included reliability of the results as previously defined by >10 valid scans AND success rate >60% AND interquartile range/median of <30%. A subset analysis was performed between patients with chronic hepatitis B, hepatitis C, NAFLD and patients with dual liver disease with hepatitis B and NAFLD. Reliability has been compared between the era when the XL probe was not available, and subsequent era when both the medium probe and XL probes were used.

Results: 3128 Fibroscans® were performed by 5 operators. 1236 (39.5%) for CHB, 1545 (49.4%) for HCV, 295 (9.4%) for NAFLD and 52 (1.7%) for CHB+NAFLD. Reliability with the medium and XL probes overall was 80.3%. Fibroscan reliability in the subgroups was; 77.7% CHB, 82.1% HCV, 81.4% NAFLD, and 88.5% CHB+NAFLD. The XL probe was used significantly more in patients with NAFLD (88.8%) than in patients with chronic viral hepatitis (41.7%; p<0.001). Comparing the different eras, prior to the availability of the XL probe, the Fibroscan® reliability with the medium probe alone was 74.1% compared with 81.7% with both probes (p<0.001).

Conclusion: Transient elastography is an effective low risk means of staging patients with chronic liver disease. Overall more than 80% of patients can be accurately staged. Due to the increasing incidence of obesity, the availability of the XL probe is an important component to improve the reliability of the Fibroscan®.

Disclosure of Interest Statement: The Authors have no disclosures related to this presentation.


**PAPER NUMBER 93**

**IMPACT OF CONDITIONAL CASH TRANSFERS ON HEPATITIS B VACCINATION COMPLETION IN PEOPLE WHO INJECT DRUGS: THE HEPATITIS B ACCEPTABILITY AND VACCINATION INCENTIVES TRIAL (HAVIT)**

Maher L1, Topp L1, Wand H1, Day C1, van Beek I3, Marian Shanahan4 on behalf of the Hepatitis Acceptability and Vaccine Incentives Trial (HAVIT) Study Group5

1 The Kirby Institute, University of New South Wales 2 Discipline of Addiction Medicine, University of Sydney, 3 Kirketon Road Centre, 4 National Drug and Alcohol Research Centre, University of New South Wales, 5 Lisa Maher, Ingrid van Beek, Carolyn Day, Libby Topp, Handan Wand, Marian Shanahan, Gregory J Dore, Andrew Lloyd, Paul Haber, Craig Rodgers, John Kaldor, and Nick Walsh.

**Introduction:** Injecting drug use is the leading exposure for newly acquired hepatitis B infection in Australia and immunisation coverage remains low among people who inject drugs (PWID). This study assessed the efficacy of conditional cash transfers relative to a standard of care control condition in increasing vaccine completion in PWID using an accelerated 3-dose schedule (0, 7, 21 days).

**Methods:** PWID susceptible to infection were randomised to receive vaccination plus a modest financial incentive (AUD$30 cash after receipt of vaccine doses 2 and 3) or vaccination with no incentive. The primary endpoint was the proportion in each group who completed the vaccination series. Secondary endpoints included immune response and cost effectiveness.

**Results:** A total of 422 PWID were screened with 139 confirmed eligible following baseline serology. Under Intention to Treat, a significantly higher proportion of participants allocated to the incentive arm completed the series (87% vs. 66%, p=.004). Multivariable logistic regression indicated that being allocated to the incentive condition and longer injecting histories significantly increased the likelihood of completion. Participants who self-identified as Aboriginal/Torres Strait Islander were significantly less likely to complete the series. Of those who received all 3 doses, 66% had anti-HBs ≥10IU/ml at 12 weeks.

**Conclusion:** This is the first RCT to directly compare incentives versus no incentives in increasing hepatitis B vaccine completion in PWID. The strength of our results lies in their establishment of the efficacy of this approach in real world settings and their potential impact on the burden of disease associated with hepatitis B infection. Findings suggest that the provision of modest financial incentives to PWID may be a realistic public health strategy with the potential to reduce incident infections in this group. Contingency management approaches, including conditional cash transfers, should underlie more widespread efforts to reduce vaccine-preventable infections in vulnerable populations.

**Disclosure of Interest Statement:** This research was funded by the National Health and Medical Research Council (Project Grant # 510104).
THE FORGOTTEN ONES: RESPONDING EFFECTIVELY TO HEPATITIS B IN REMOTE SETTINGS

Wallace J1, Pitts M1, McNally S1, Ward J2, and Nakata, Y3

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2 The Kirby Institute for infection and immunity in society, University of New South Wales
3 Thursday Island Primary Health Care Centre

Introduction: Indigenous people experience a significant burden of ill health and disease, requiring health services and communities to respond to multiple and competing priorities. Indigenous Australians are disproportionately affected by chronic hepatitis B infection with an increased prevalence, incidence and mortality related to the infection in comparison to other Australian born populations. There is limited understanding of how Indigenous health services can respond to chronic hepatitis B. This paper documents the impact of chronic hepatitis B infection on health service providers in one remote community, and identifies priorities for an effective public health response to chronic hepatitis B.

Methods: Semi-structured in-depth face to face or telephone interviews were undertaken with 61 individuals including 56 health service providers working in the Torres Strait, and five health service providers based in Cairns.

Results: The health service response to chronic hepatitis B in the Torres Strait was described as fragmented. Two issues fundamentally affect how the health system in the Torres Strait responds to chronic hepatitis B: the absence of agreed guidelines for clinical management of the infection, and the variable knowledge within the health workforce about the infection.

Conclusion: Chronic disease management is an essential part of the health service response to the health needs of people living in the Torres Strait. The Adult Health Check provides the framework in which people are screened, diagnosed and informed that they infected with chronic hepatitis B. Screening for hepatitis B has little utility unless people who have been diagnosed with hepatitis B are effectively managed, and that the health system has the resources to provide this management.

Disclosure of Interest Statement: The project was funded by the Commonwealth Department of Health and Ageing.
PAPER NUMBER 184

UNIVERSAL NEWBORN HEPATITIS B VACCINATION IN THE NORTHERN TERRITORY TWO DECADES ON: THE END OF THE AUSTRALIA ANTIGEN?

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1 The Kirby Institute, University of New South Wales, Sydney Australia; 2 Northern Territory Department of Health, Darwin Australia; 3 National Centre for Immunisation and Surveillance, Sydney Australia; 4 Perinatal and Reproductive Epidemiology Unit, University of New South Wales, Sydney Australia

Introduction: The Northern Territory (NT) of Australia introduced a universal newborn hepatitis B (HBV) vaccination program in 1990, and then a school-based catch-up program. We assessed the program by analysing the prevalence of hepatitis B surface antigen (HBsAg) in antenatal women.

Methods: A cohort of women giving birth in the NT between 2005 and 2012 was defined from NT public hospital birth records and linked to laboratory notifications of HBsAg. Prevalence of HBV was compared between women born before and after the newborn vaccination program.

Results: Of a total 10797 women giving birth, 153 (1.4%) were linked to a record of HBsAg positivity. Prevalence was substantially higher in Aboriginal women compared to non-Indigenous women (2.7% versus 0.04%; p<0.001). The highest prevalence was in Aboriginal women in older birth cohorts (3.8%, 95%CI 3.1-4.8), with those eligible for catch-up and newborn vaccination programs having significantly lower prevalences (2.4%, 95%CI 1.9-3.1, p=0.006 and 0.9%, 95%CI 0.5-1.7, p<0.001 respectively).

Conclusion: These results demonstrate that the newborn and catch-up vaccination programs have had a substantial impact on reducing the prevalence of chronic HBV in Aboriginal women. Our approach provides a model for analysing HBV vaccine impact in other settings globally. Despite ongoing transmission, perhaps due to incomplete coverage or past vaccine batch quality, continuing efforts to maintain high vaccine coverage should result in eventual eradication of the "Australia antigen"
HEPATOCELLULAR CARCINOMA IN THE NORTHERN TERRITORY – HIGH INCIDENCE AND MORTALITY, AND THE NEED FOR A SCREENING PROGRAM

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Introduction: The Northern Territory (NT) of Australia has a high proportion of remote-dwelling and Indigenous people, and a high incidence of HBV infection. Previous studies in the NT have shown that the incidence of hepatocellular carcinoma (HCC) is substantially higher among Indigenous than non-Indigenous people, but there are no published studies describing the recent epidemiology of HCC in the NT. We aimed to describe the epidemiology, clinical features, management and outcomes of HCC in the NT over the past decade.

Methods: This study had two parts. The first was an NT-wide epidemiology study covering the period 1991-2010. HCC diagnoses were provided by the NT cancer registry and cross-checked against clinical records. The second part was a detailed clinical cohort study including patients diagnosed with HCC from 2000-2011. Detailed clinical and demographic data were collected from medical records and hospital databases. The AASLD diagnostic criteria were used for the case definition of HCC.

Results: The age-adjusted annual incidence for 1991-2010 was 7.3 (95% CI 6.0-8.6)/100,000 for the NT overall, and increased from 7.2 in 1990s to 9.6 in the 2000s. For Indigenous Australians the incidence was 22.8 (17.4-28.2) overall and 35.5 (20.0-51.0) in the 2000s, 4.4 times higher than the overall Australian incidence, and similar to that reported from Hong Kong. HBV was the most common cause in Indigenous people (62% seropositive) and HCV in non-Indigenous (49% seropositive). Most people were diagnosed late, with only 26% within Milan criteria at diagnosis and 17% diagnosed by screening. The median survival from diagnosis was 64 days in Indigenous people compared with 173 days in non-Indigenous.

Conclusion: HCC remains at least 4 times more common in Indigenous Territorians than Australians overall, and HBV infection is the most important causative factor. The incidence is growing rapidly and outcomes are very poor. A screening program is urgently needed.
PAPER NUMBER 165
MARKERS OF HEPATITIS B INFECTION AND IMMUNITY IN FIVE ABORIGINAL COMMUNITY CONTROLLED HEALTH SERVICES, 2009-2011

Harrod ME1, Thiele D2, Dore G1, Couzos S3, Ward J4, Saunders M1, Tollhurst B5, Gately J1, Leedie F1, Kaldor J1 on behalf of the REACCH Collaboration

1The Kirby Institute for infection and immunity in society, 2Aboriginal Medical Service Western Sydney, 3National Aboriginal Community Controlled Health Organisation, 4Baker IDI Heart & Diabetes Institute, 5Goondir Health Services, 6Nunkuwarrin Yunti of South Australia, Incorporated

Introduction: Aboriginal and Torres Strait Islander (hereafter Indigenous) People are at higher risk of hepatitis B virus (HBV) infection relative to the non-Indigenous population. Vaccination against HBV became available in Australia in 1987 with priority for Indigenous people, with universal neonatal vaccination available from 2000. While there is evidence that HBV prevalence has decreased post-2000, there is little available data on levels of HBV protection post-2000 to assess the coverage of vaccination in Indigenous people.

Methods: Data were collected retrospectively in all patients aged 15-54 years who had testing for sexually transmitted and blood borne viral infections from January 2009 to December 2011 in five urban and regional Aboriginal Community Controlled Health Services who are member services participating in the REACCH Program. Pathology test results were exported directly from patient information management systems via GRHANITETM software. Available HBV serological tests included HBV surface antibody (HBsAb), HBV surface antigen (HBsAg) and HBV core antibody (HBCaB).

Results: Between 2009 and 2011, a total of 2,536 clinic attendees (82% Indigenous and 61% female) had HBV serological testing. Of the 1,573 who were tested for HBsAb, 741 (47%) were positive, with a mean titre of 221 mIU/mL (SD = 345). 1,855 attendees were tested for HBsAg with 50 (2.6%) positive. The HBsAg positive prevalence ranged between 1.0 – 3.6% across the five clinics. Results for age, sex and Indigenous status will be reported.

Conclusion: The majority of attendees in the Aboriginal Community Controlled Health Service network remain susceptible to HBV infection despite access to HBV vaccination. Chronic HBV prevalence is around three-fold higher than estimates for the general population. Enhanced efforts to increase HBV vaccination levels in the Indigenous population are required.
ESTIMATING HEPATITIS B TREATMENT UPTAKE IN PRIORITY MEDICARE LOCALS

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2 WHO Regional Reference Laboratory for Hepatitis B, VIDRL
3 Western Region Health Centre
4 Victorian Infectious Diseases Service, Royal Melbourne Hospital

Introduction: Chronic hepatitis B (CHB) in Australia is not evenly geographically distributed and is most prevalent in the two priority populations identified in the National Hepatitis B Strategy – people from culturally and linguistically diverse (CALD) backgrounds, and in Aboriginal and Torres Strait Islander (ATSI) people. Interventions need to target communities most affected by CHB to prevent liver disease and hepatocellular carcinoma. Effective treatment prevents disease progression and is a cost effective cancer control strategy. This study was designed to estimate the coverage of antiviral therapy in populations living with CHB in Medicare Locals with large CALD or ATSI populations.

Methods: Data from the 2006 Australian Census plus background CHB prevalence estimates were used to estimate the number of Australian residents by country of birth or ATSI status living with CHB by Medicare Local (ML). Treatment coverage in MLs was estimated using de-identified national prescribing data for HBV antivirals. The proportion of people living with CHB receiving treatment was calculated for 10 high priority Medicare Locals across Australia and estimates for number of untreated cases in each area.

Results: The 10 Medicare Locals analysed accounted for 55% of prescriptions dispensed nationally. Treatment coverage nationally is 3.8% but varied from less than 1% in rural MLs to 8.4% in inner city Sydney. While treatment coverage is higher in Sydney and Melbourne, due to migration patterns these areas still account for 22% of untreated cases.

Conclusion: CHB diagnosis, treatment and monitoring needs to be expanded in priority areas to prevent disease progression. This study provides a baseline to monitor treatment uptake in high priority MLs and inform health planners of gaps in service provision.
PROFFERED PAPER SESSION: COMMUNITY AND SOCIAL RESEARCH:
REFLECTING ON PREVENTION AND THE ROLE OF PEERS
11:00AM – 12:30PM

PAPER NUMBER 199
HEALTH PROMOTION, HEALTH PROTECTION, HEALTH RIGHTS – IT’S TIME TO CHANGE
Crawford S 1
1 NSW Users and AIDS Association

Introduction: The NSW Users and AIDS Association, (NUAA) is the state wide drug user organisation representing those most affected by hepatitis C. NUAA works across NSW implementing a number of community controlled peer support, peer education, community development, policy and advocacy programs as well as NSP services.

Methods: This paper will explore the legislative and legal barriers that impede the work not only of NUAA but all services that are working with people who inject drugs in NSW to prevent the transmission of hepatitis C.

Results: The presentation will show that all of what the sector is striving to achieve is constantly undermined due to the illegal framework that injecting drug use and people who inject drugs are placed within.

Conclusion: In concluding, the presentation showcase the work NUAA has undertaken to date and will outline how with a shift in the legislation we can achieve greater coverage of the NSP, provide a full range of equipment needed, allow people to take control of their health and legally support their friends and family in protecting themselves from hepatitis C.
"DULANGIRR GUBBYNIDGEL" NEW BEGINNINGS: HEPATITIS C PEER EDUCATION KIT

Capper A1

1The Connection: Indigenous Peer Support Organisation

Introduction: “Dulangirr Gubbynidgel" means "new beginnings" and like the entire workshop, it was developed, named and designed by Aboriginal and Torres Strait Islanders, many of whom were or are injecting drug users and have hepatitis C or experience of it from friends and family. The name “new beginnings" was decided as a lot of users (and others in the community), have misconceptions about the virus. While others think it’s the end of the world. Rates of hepatitis B, C and HIV among Aboriginal people who use drugs are disproportionate to those in the mainstream drug using communities and this needed to be addressed as a matter of urgency.

Methods: The kit was designed by and for Aboriginal injectors to be adapted to different audiences and peer education settings. Those involved in the project went through a series of peer education workshops learning about hepatitis c, as well as how to deliver workshop presentations. This took about a year where a series of focus testing was undertaken to fine tune the kit.

Results: The kit has successfully delivered to numerous groups of indigenous injectors and has assisted in a greater understanding of the virus and its impacts.

Conclusion: It has been well received and found to be an easy tool to use and for the development of skills for new peer educators, therefore increasing capacity of the project along with providing an opportunity for building self-esteem and empowerment. The success of this program has shown that the genuine engagement with current injecting drug users recognises that those living at risk of infection are experts in their own experience and are best placed to inform efforts that address their own education and support needs.

Disclosure of Interest Statement: The Author has no disclosure of interest to make.
Introduction: AIVL’s ‘National Youth BBV & STI Project’ was developed over two years: working with young people who have existing organizational links to increase their knowledge and awareness of blood borne viruses (BBVs) and sexually transmitted infections (STIs). This presentation discusses the project process, issues and challenges, particularly as they relate to young people who do not necessarily see themselves requiring an increased knowledge and awareness; young people who are not marginalized; and youth services who are concerned that drug information/education and harm reduction equate with teaching young people how to inject.

Methods: AIVL partnered with existing projects: Harm Reduction Victoria’s ‘Dance Wize’ and Youth Empowerment Against HIV’s (YEAH) – Agents of YEAH.

A series of BBV/harm reduction and STI trainings ensued, with young people then utilizing this knowledge at festivals and venues. Evaluation outcomes of how the knowledge and awareness raising initiatives were interpreted by the young people involved highlighted some very interesting and unforeseen results which are detailed in this presentation.

Conclusion: Young people often don’t see themselves as drug users and therefore don’t take on messages considered to have such a ‘slant.’ If they are targeted in a way that captures their identification in other areas of their lives - sex and sexual identity, media and culture - you are then able to provide BBV and STI prevention education. Our project indicates to us that young people are at a much higher risk of transmission from drug use than they themselves actually understand or acknowledge. Innovative methods such as the one utilized must be developed to ensure they have the information they need (even if they don’t know they need it).
PEOPLE WHO INJECT DRUGS AND HEPATITIS C PROJECTS: ENSURING COMMUNITY CONTROL AND RELEVANCE

Crawford, S1; Wegener J1

1 NSW Users & AIDS Association (NUAA)

Introduction: The NSW Users & AIDS Association (NUAA) is the NSW peer-based drug user group mandated to undertake blood-borne virus prevention and hepatitis C treatment peer support with people who inject drugs. NUAA’s projects, both prevention and treatment focused, strive to be built from the community level upwards. This presentation will present an overview of NUAA’s hepatitis C programs and assess their successes and challenges in the context of community control by people who inject drugs.

Methods: Internal and external evaluations of NUAA’s programs are ongoing. The PeerLink peer educator training and support program external evaluation is available for use and this will be used as a stepping off point for a discussion of the particular challenges of planning, implementing and evaluating community controlled programs aimed at blood borne virus prevention amongst a community who do not always see this as their top priority.

Results: The PeerLink peer educator training was put together with community consultations and the ongoing refresher training and support is undertaken in genuine partnership with the local community peer educators. This has led to a high degree of relevance to peer educators. Nevertheless a tension exists between the funded work around blood borne virus prevention and other health promotion work. Strong communication between partners, the community and the funders has allowed this program to effectively respond to both community capacity and funding requirements.

Conclusion: Community controlled viral hepatitis programs have particular strengths and challenges to balance. Peer based drug user organisations are uniquely placed to ensure this marginalised community maintain control over projects that deal with hepatitis C, which affects our community most clearly and overwhelmingly.

Disclosure of Interest Statement: I have no relevant Disclosures of Interest to make.
One of the key priorities of the South Australian Hepatitis C Action Plan 2009-2012 is the expansion of access to effective treatments among the main populations affected by hepatitis C in South Australia.

In response to this priority, a collaborative holistic treatment and care approach was undertaken by Clinical Practice Consultants from Flinders Medical Centre (FMC), clinical staff at Drug and Alcohol Services SA (DASSA) and the Hepatitis SA Outreach Hepatitis C Peer Education and Support Program to establish a fortnightly nurse led HCV treatment clinic for DASSA clients at Warinilla, in the eastern suburbs of Adelaide. A pre-treatment clinic staffed by a DASSA doctor alternates each week with the FMC nurse led treatment clinic.

The hepatitis C peer educator, who attends both clinics, has successfully undergone treatment himself and thus is able to share his experiences and ‘management tips’ from the ‘patient’ perspective with DASSA clients before, during and after the treatment journey.

The hepatitis C peer educator also has regular placements at a number of drug and alcohol related sites throughout Adelaide, including weekly placements at both Outpatient and In-patient services at Warinilla, where he conducts hepatitis C individual and group education sessions respectively. The peer educator role is to engage the clients of these services about hepatitis C, providing accurate information while also sharing his own experiences of living with hepatitis C. A key part of the role is to make referrals to the range of available hepatitis C services, including, where appropriate, the DASSA treatment clinic.

The hepatitis C treatment clinic has been operating at Warinilla since 2010. This co-presentation will provide data regarding client outcomes, further details about how the clinic operates and highlight the benefits of this approach with examples from particular case studies.

Disclosure of Interest Statement: There were no contributions from industry partners relevant to this work.
Paper Number 247

The Ethos Cohort Peer Support Project - Peer Support for People Undertaking Hepatitis C Treatment in Pharmacotherapy Settings; What We Have Learnt and What We Can Share

Crawford, S1 Musgrove, S2

1 NSW Users & AIDS Association, 2 NSW Users & AIDS Association

Introduction: This paper will outline the Community Controlled Peer Support component of the NSW Enhancing the Treatment of Hepatitis C in Opioid Substitution Settings (ETHOS) cohort. The ETHOS cohort is a prospective observational study designed to examine assessment, treatment uptake, response to therapy and re-infection following successful treatment among people with a history of drug use who are living with chronic hepatitis C infection.

This paper will compare three peer support projects.

Methods: The NSW Users and AIDS Association (NUAA) were engaged to run three models of peer support treatment at three different ETHOS sites. The modalities of treatment were as follows:

• Private clinic site with two peer support workers who work a day each and are clients of the host service.
• Public clinic site with one peer support worker who works two days and is not a client of the host site.
• Public clinic site with one peer support worker and one researcher who will run an organised support group at the host clinic.

Results: The inclusion of Community Controlled Peer Support has had a positive impact on the sites. This impact will be shown using data and anecdotal. This presentation includes a description of the process of employing peer workers in these sites and NUAA’s impressions of the impact of the peer workers on clients’ engagement with hepatitis C care and treatment.

Conclusion: The ETHOS cohort partnership demonstrates that including by people with a history of injecting drug use benefits for both services and people living with hepatitis C. The process of implementing and improving peer support has challenges but a partnership approach has yielded strong signs of success we hope to share.

Disclosure of Interest Statement: Neither author has any relevant disclosures of interest to make at his time.
INTRODUCTION: Despite advances in hepatitis C virus (HCV) treatment and its accessibility, treatment uptake remains low among people who inject drugs (PWID). HCV treatment willingness was assessed among a population of PWID, the majority of whom were receiving opioid substitution treatment (OST).

METHODS: Enhancing the Treatment for Hepatitis C in Opioid Substitution Settings (ETHOS) is a prospective cohort examining HCV treatment uptake, response and re-infection. Recruitment is through a network of nine OST and community-based clinics in New South Wales, Australia, undertaking HCV assessment, treatment and monitoring. Eligibility criteria include chronic HCV infection and history of injecting drug use.

RESULTS: Overall, 385 participants have been enrolled. Data was available on the initial 237 participants. The mean age was 40 years, the majority was male (71%), 49% had finished high school, and 8% had full-time employment. Seventy-seven percent were currently receiving OST, including 57% on methadone and 20% on buprenorphine. Ninety-two percent (n=218) were HCV treatment-naive, of whom, 49% (n=106) had never sought treatment before. The most common self-reported reason for not having received treatment was lack of HCV knowledge (30%, n=32), followed by concerns about treatment side effects (15%, n=13) and asymptomatic infection (11%, n=12). The majority of participants (80%, n=187) were definitely or somewhat willing to receive HCV treatment over the next year; 9% (n=20) were neither willing nor unwilling and 11% (n=27) were definitely or somewhat unwilling. The most common self-reported reasons for lack of treatment willingness were concerns about treatment side effects (15%), ongoing drug use/injection (11%) and asymptomatic infection (11%).

CONCLUSION: High levels of treatment willingness have been demonstrated among PWID within the ETHOS study. Access to HCV treatment assessment and delivery within the clinic network should ensure that a greater number of PWID are able to be commenced on treatment prior to the introduction of the ETHOS model.
POPULATION- ATTRIBUTABLE RISK ESTIMATES FOR RISK FACTORS ASSOCIATED WITH HEPATITIS B AND C IN PAKISTAN, POLICY IMPLICATIONS FOR PAKISTAN AND OTHER SOUTH ASIAN COUNTRIES

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Introduction: Re-use of contaminated syringes, greater frequency of therapeutic injections, tattooing, and skin piercing have repeatedly been shown to be an important and independent risk factors for hepatitis B and C, however, impact of eliminating these risk factors on developing new cases have not been explored yet.

Methods: We estimated the population attributable risks (PARs) of various risk factors of HBV and HCV in our population using data from a nationally representative cross sectional survey that tested 47,000 individuals for (HBsAg) and anti-HCV antibody between July 2007 - May 2008 by Pakistan medical and research council (PMRC).

Results: Hepatitis B: Reducing the frequency of injections in last one year yield a PAR of 3.5%. Likewise, decreasing the practice of reuse of syringes will prevent 2.7% cases from our population. Eliminating the practice of shaving at barbers will avert 2.5% of new cases. Stopping sharing of smokeless tobacco gives the highest PARs and will prevent 4.4% of hepatitis B. Hepatitis C: Reducing the frequency of injections in last one year and decreasing the practice of reuse of syringes will avert 11.3% and 2.7% of cases respectively. Decreasing the practice of sharing of smokeless tobacco will preclude 8.1%of cases. Stopping tattooing will prevent 3.5% of cases. Similarly, practice of ear/ nose piercing among females yields PARs of 5.9%.

Conclusion: About one-third of the HBV and HCV cases in this Pakistani population could be prevented by the intervention on a few selected and modifiable risk factors.

Disclosure of Interest Statement: No conflict of interest
PAPER NUMBER 110
DELIVERY AND MONITORING OF HEPATITIS B BIRTH DOSE: BARRIERS AND STRATEGIES
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Introduction: Perinatal transmission of hepatitis B virus leads to a sizeable proportion of chronic hepatitis B infections. Delivery of a hepatitis B vaccine ‘birth dose’ as soon as possible after birth (ideally within 24 hours) is the most efficient way to prevent perinatal transmission. In 2009 the World Health Organization (WHO) stated that all infants should receive this birth dose of hepatitis B vaccine. However it was acknowledged that weak immunization programs and primary health care systems create challenges to birth dose delivery and achievement of hepatitis B control goals.

Methods: We developed a background paper for a WHO technical meeting examining approaches to deliver the vaccine to more children on time. We reviewed approaches to delivery of the hepatitis B birth dose documented in both the peer reviewed and grey literature, with a focus on low and middle income countries.

Results: Barriers identified included lack of access to vaccine, to a vaccinator, missed opportunities for timely delivery, misconceptions about contraindications, fear of adverse events, opposition to delivery of vaccine by non-clinical or non-immunisation program staff, regulatory and political issues regarding out of the cold chain (controlled temperature chain) vaccine, acceptance of alternative injection devices, insufficient demand, difficulties identifying births and integrating systems not previously involved in giving vaccines, and poor recording of vaccine delivery. A number of countries have developed innovative strategies to address these barriers. Among the best documented are Indonesian projects incorporating delivery of birth dose at home and Chinese programs to improve hospital births and thus birth dose delivery.

Conclusion: Innovative strategies for the delivery of the birth dose need to be evaluated and shared. Documentation should include standard operating procedures for relevant staff.

Disclosure of Interest Statement: Funding was received from the WHO to conduct this review and prepare background documents for a technical meeting.
PLANNING FOR VIRAL HEPATITIS IN NSW/AUSTRALIA AT A MEDICARE LOCAL AND LOCAL HEALTH DISTRICT LEVEL

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Introduction: Medicare Locals have been established as part of national health reform in Australia. Medicare Locals will plan and coordinate service provision across primary health care providers (including general practice) as well as assist providers in maintaining and improving service quality. Blood Borne Viruses (BBVs) and Sexually Transmitted Infections (STIs) are not given high priority in national primary health care policy. The Australasian Society for HIV Medicine (ASHM) established the NSW Planning Project to assist those involved in governance of Medicare Locals to better understand current service provision and likely trends relevant to BBVs and STIs in their area, engage with stakeholders and ensure planning and decision making is based on the best available evidence. Assistance was to be provided through information products in print and electronic form as well as direct consultation.

Methods: A steering committee provided advice on content for materials. Data sources such as the NSW Notifiable Diseases Database, strategy and policy documents and other relevant research were reviewed and analysed. Products were circulated to key stakeholders at a local level for endorsement.

Results: Products included a lead document comparing patterns of disease between and across Medicare Locals and highlighting priority areas for scaling up primary health care involvement. Other products included more detailed papers on Hepatitis B, hepatitis C, HIV and STIs in NSW as well as documents tailored to each Medicare local providing more detailed information on their area.

Conclusion: Engagement of new stakeholders requires an understanding of their specific needs and tailoring advocacy accordingly.
FEMALE SEX AND VARIATIONS IN IL28B ARE INDEPENDENTLY ASSOCIATED WITH SPONTANEOUS CLEARANCE OF ACUTE HCV INFECTION


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Introduction: Although variations in the interleukin-28 (IL28B) gene region are associated with spontaneous clearance, many studies have been performed in cross-sectional studies. Factors associated with spontaneous clearance during acute HCV were assessed.

Methods: InC3 is a collaboration of nine international cohorts. Data on HCV seroconversion among those enrolled between 1986 and 2009 were included. Inclusion criteria were: history of IDU, documented anti-HCV seroconversion within a two-year period and minimum of two therapy-naïve HCV RNA assessments following the estimated date of seroconversion. The proportion with spontaneous clearance was estimated and factors associated with spontaneous clearance identified using logistic regression.

Results: Among 517 with incident HCV (173 females), HCV genotype (G) prevalence was: G1, 49%; G2, 6%; G3, 30%; G4, 1%; G6, 1%; mixed, 2% and unknown genotypes, 11%. Spontaneous clearance was observed in 26% (95% confidence interval: 22%, 31%; 136 of 517). Spontaneous clearance was higher among females (38% vs. 21% males, \(P<0.001\)) and among those with favorable CC IL28B genotype (37% vs. 24% CT/TT, \(P=0.005\)). Among females with IL28B (n=131), the proportion with spontaneous clearance was 58% in those with favorable CC genotypes as compared to 27% in those with unfavorable CT/TT genotypes (\(P=0.002\)). In unadjusted analysis, factors associated with spontaneous clearance included female sex, Aboriginal ethnicity, no recent IDU and favorable CC IL28B genotype (vs. CT/TT). In adjusted analysis, female sex [adjusted (AOR) 2.66; 95% CI: 1.69, 4.18; \(P<0.001\)] and favorable CC IL28B genotype (vs. CT/TT: AOR 2.03; 95% CI: 1.30, 3.19; \(P=0.002\)) were independently associated with spontaneous clearance. The interaction between female sex and IL28B was assessed, but was not statistically significant.

Conclusion: Female sex and IL28B genotype are independently associated with spontaneous clearance during acute HCV. Delayed therapeutic intervention during acute HCV could be recommended for females with favorable IL28B genotypes to allow time for spontaneous clearance.
OUTCOMES OF A COHORT OF PRISONERS WITH GENOTYPE 1 HEPATITIS C TREATED WITH STANDARD DOUBLE THERAPY. WE REPORT SUCCESS RATES OF >90%

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Introduction: Tasmanian prisons treated their first case of hepatitis C in 2008. By the end of 2012 we will have a total of some 70 treated cases. Hepatitis C prevalence in our prisons are 30% clustering in maximum security areas. With experience we have become less risk averse and consequently treat more people with co-morbid conditions and drug and alcohol problems. Our early treatment successes with standard therapy in Genotype 1 disease has caused us to persist in this treatment despite the knowledge that new treatments were on the way.

Methods: All prisoners who have a sentence length that can accommodate a complete hepatitis C treatment qualify for consideration. Additionally those who have prison acquired disease, are actively injecting in prison, have infection of >10 years or a fibrosis score >2 receive priority. The program is internal to the prison and staffed by a Clinical Director, two Medical Officers, a BBV Program Coordinator and a team of generalist and mental health nurses.

Results: For hepatitis C treatment across all genotypes including type 1 we report a success rate [SVR] of >90% using standard double therapy. The treatment program produces significant health benefits in terms of body weight, reduced injecting drug use and the experience of wellbeing. We attribute this success to directly observed treatment [DOT], prompt professional inputs as required, a dearth of access to drugs and alcohol, and the relative stability that the prison environment provides compared to the community circumstances of this cohort.

Conclusion: Prisons are an excellent place to set up treatment programs for hepatitis C. Standard double therapy can produce significantly better cure rates in prison than can be obtained in the community. These response rates have implications for the use of standard triple therapy in prisons. Treatment in prison is an efficient public health response to the epidemic of hepatitis C in Australasia.
**PAPER NUMBER 122**

**USE OF FIBROSCAN IN ASSESSMENT OF CHRONIC HEPATITIS B VIRUS INFECTION**
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**Background:** Current APASL guidelines for chronic hepatitis B virus (HBV) infection recommend fibros’ or liver biopsy) only for specific groups of patients. The increasing availability of non-invasive fibroscans is leading to their use in the initial assessment of HBV carriers to exclude severe fibrosis/cirrhosis.

**Methods:** In 1984, 572 HBV carriers were identified from the Kawerau study. Carriers are being followed up 27 years later with blood tests and fibroscan. This has led to the development of modified algorithms for both active chronic hepatitis B (CHB) and hepatocellular carcinoma (HCC) based on Fibroscan results.

**Results:** 218 patients have been followed up to-date. Only 60(27.5%) have normal liver stiffness measurement (LSM)<5kPa. Based on the Yoneda cutoffs, 68(31%) have stage 1 fibrosis (LSM<7.1kPa), 9(4%) have stage 2 fibrosis (LSM 7.1-8kPa), 20(9%) have stage 3 fibrosis (LSM 8-11kPa) and 18(8.3%) have cirrhosis (LSM>11kPa). 43 patients (20%) had unsuccessful readings using the portable fibroscan with the medium probe. Median BMI and waist circumference for unsuccessful fibroscans were 38.6 (range 27.3-51.5) and 112cm (range 80-134) respectively. Patients with successful fibroscans had a lower median BMI of 28.8 (range 18.1-55.7),p<0.0001, and a lower median waist circumference: 93.25cm (range 61-136),p<0.0001.

All patients with LSM>8kPa were offered antiviral treatment if HBV DNA was >2000IU/mL, regardless of ALT level. Patients with LSM 7.1-8kPa were offered antiviral treatment if ALT and HBV DNA were elevated, Patients with LSM<7.1kPa or who do not meet any of the above criteria continued to have surveillance with 6 monthly LFT+AFP.

E-antigen positive patients with a persistently elevated ALT were offered treatment.

All patients with LSM>8kPa were also offered 6 monthly ultrasound scans for HCC surveillance.

**Conclusions:** Fibroscan is useful in aiding earlier identification and treatment of those with severe fibrosis from CHB. Obesity and larger waist circumference are predictors of fibroscan failure with the medium probe.

Disclosure statement: All authors have nothing to disclose.
HDV TESTING IN VICTORIA, AUSTRALIA 2000-2009: INSIGHTS INTO EPIDEMIOLOGY AND CLINICAL MANAGEMENT

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Introduction: Hepatitis D virus (HDV) only infects concurrently with hepatitis B virus (HBV), and is known to alter disease course, treatment options and likelihood of adverse outcomes in people living with chronic HBV. The epidemiology and clinical practices surrounding HDV in Australia are poorly understood, with no robust estimates of burden of disease or the extent of opportunistic testing.

Methods: Laboratory records of all HDV serological and RT-PCR testing in the state of Victoria were obtained for the period 2000-2009. Estimates of the number of cases per year were derived and compared with health department surveillance data, and records were analysed to evaluate testing patterns and follow-up for individual patients.

Results: 2,604 HDV serological tests were conducted on 2,327 individual patients residing in Victoria between 2000-2009; of these, 110 patients (4.7%) tested positive for HDV antibody or antigen, with both the number of patients positive and the number of tests steadily increasing between 2005 and 2009.

Of those patients who tested antibody positive, less than half (44 patients, 40.0%) were subsequently evaluated by qualitative HDV PCR, and the majority of those who were (29 patients, 70.5%) tested HDV RNA positive.

Surveillance data show reasonable concordance with laboratory diagnoses, with 88 notifications for HDV made to the Victorian Department of Health in this period (80% of positive test results).

Conclusion: As an estimate of burden of disease, the proportion of positive tests observed (4.7%) corresponds strongly with current estimates of 5% HDV prevalence in those with HBV. Increased testing for HDV in Victoria over the last decade has resulted in an escalating number of HDV diagnoses and highlights the potential for undiagnosed HDV infection in those living with chronic hepatitis B, however gaps also remain in the appropriate testing and follow-up of patients known to be infected.

Disclosure of Interest Statement: The authors declare they have no conflicts of interest.
OVERDOSE MANAGEMENT: WHAT’S THIS GOT TO DO WITH HEPATITIS C?
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**Introduction:** On first glance an overdose management program may seem to have little relevance to hepatitis C but as this program focusses on engaging high risk, priority populations for overdose these populations are also high risk for hepatitis C transmission. Being Australia’s first overdose program providing take home naloxone enables the program to engage with and gain the interest of a broad spectrum of injecting drug users, including marginalized, hard to reach populations.

**Methods:** The program is focusing on specific high risk populations for overdose which include recently released prisoners and Indigenous peoples. These two groups are additionally high risk populations for hepatitis C infections and for many have little or no opportunities for engagement with community or health agencies and therefore miss out on essential prevention and treatment messages in relation to hepatitis C. Specific, targeted recruitment strategies have been developed to ensure these populations are enrolled in the program.

**Results:** The program is being conducted over a two year period with 200 participants. The overdose education program includes BBV messages but also importantly provides a contact point and first engagement and introduction to a peer based, community organisation that provides an entry point for education on hepatitis C transmission, treatment and support services.

**Conclusion:** An independent evaluation is being conducted to measure the implementation process and importantly measure the success or otherwise of engaging hard to reach, at risk communities.
PEER EDUCATION IN ABORIGINAL COMMUNITIES
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Introduction: Hepatitis C is the fastest growing virus and the leading cause of liver cancer in Australia. Hepatitis C has been reported at disproportionately high rates among Aboriginal and Torres Strait Islander communities, and NSW has the highest rate of hepatitis C notifications in Australia.

Methods: To reduce rates of Hepatitis C infections, The Aboriginal Medical & Research Council developed a Peer Education (PE) pilot targeting young Aboriginal people, 14-25 years old across NSW. The pilot is currently been delivered over April/May in two locations: Nowra and Wellington. The pilot will compare two different approaches to PE.

One: The Peer-Led approach, will adopt a traditional methodology, where the peers are recruited and trained on Hepatitis C, as Peer Educators (PErs). They then conduct sessions in schools and youth centers. Two: A Peer Driven approach, where several PErs are selected, trained briefly on Hepatitis C and they then recruit other PErs. If they successfully recruit new peers, they then receive further incentives. The new peers are then trained in the same way and receive incentives for every peer they successfully recruit.

Results: Preliminary analysis of the PE’s literature has revealed that both methods are relevant and effective in different ways. This pilot will test their effectiveness among Aboriginal communities and which is better suited in terms of capacity building, resource development and distribution.

Conclusion: PE is a recognised method to disseminate knowledge on Hepatitis C prevention, however there is little documented evidence of the effectiveness of PE in Aboriginal communities. This pilot will provide information on the effectiveness of PE in reducing hepatitis C infections among Aboriginal people. Exact findings and evaluation from the first phase will be presented at the July’s conference.
PAPER NUMBER 244

IT’S TAKEN SO LONG TO DO TREATMENT”: A PROGRAM AIMED AT ENGAGING PEOPLE USING ILLICIT DRUGS AND LIVING WITH HEPATITIS C

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Introduction: Injecting illicit drugs and Hepatitis C are two topics not generally discussed openly within our society. As a result, these people often experience discrimination. The Western Region Health Centre’s “CHOICES” group is based on the “Mutual Aid Model” (Schulman), which highlights how participants learn through discussion based approach and is based on the principles of self management and positive behaviour change.

Methods: A focus group was undertaken before the commencement of the program to identify how participants would like the group to proceed. The program was evaluated using a mixed method design to ascertain the degree which this program impacted on this marginalised and select group of participants. This method was implemented by a pre and post survey comprising 13 questions using the Likert scale and 2 qualitative questions. The questionnaires were analysed using a clinical significance formula and thematic analysis.

Results: By sharing similar experiences, participants normalised their condition and learned from other people living with the same long term condition. This increased their confidence in managing their own health and taking greater responsibility for their lives. The participants often described attending the program as an opportunity for them to talk about living with hepatitis C in a safe and positive group setting. In addition, the program also improved social connectedness, increased self-efficacy, improved community integration, increased movement through the stages of change and created more effective peer support.

Conclusion: The “CHOICES” program has been of great benefit to participants and has increased their knowledge and the adoption of self-management strategies to better manage their hepatitis C. The participants found that this discussion based group enabled them to express themselves openly and share similar experiences in a trusting and respectful setting.

Our presentation will include an overview of the effects the “CHOICES” group had on the participants, which is reflected by the evaluation results.

Disclosure of Interest Statement: None
This presentation will focus on anti-viral treatments of hepatitis C related cirrhosis in patients across three categories:

- Patients with compensated cirrhosis without portal hypertension
- Patients with compensated cirrhosis with portal hypertension
- Patients with decompensated cirrhosis
MANAGEMENT OF PATIENTS WITH ADVANCED HEPATITIS B

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In patients with chronic hepatitis B (CHB), the disease is largely asymptomatic except for those with evidence of decompensated liver disease and hepatocellular carcinoma (HCC). Despite the lack of symptoms, a proportion of hepatitis B carriers will have underlying severe fibrosis or established cirrhosis. The most important milestone in CHB management has been the availability of oral nucleoside/nucleotide analogues which can effectively suppress viral replication. Long-term therapy can prevent disease progression, and has been associated with improvement in fibrotic stages. In established cirrhosis, oral antiviral therapy is effective in restoring and maintaining liver function, and improving survival. It is unlikely however that antiviral therapy can fully prevent the development of HCC, especially in those with advanced fibrosis and established cirrhosis. Regular HCC surveillance remains a vital component. For these patients, antiviral therapy is essentially life-long, except maybe for those who achieve HBsAg seroclearance. Therefore it is imperative that drugs with high barriers to resistance be used as further severe flares of hepatitis are associated with high risk of decompensation and mortality.
PAPER NUMBER 271
CAN WE PREVENT CIRRHOSIS COMPLICATIONS WITH ANTIVIRAL TREATMENT?

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The prevention of cirrhotic complication is hardly addressed by randomized controlled studies as long-term follow-up is needed. As interferon has been used for a few decades for chronic hepatitis B, numerous cohort studies comparing treated versus untreated controls are available in the literature. In a meta-analysis, interferon treatment can reduce all liver-related events including cirrhotic complications, hepatocellular carcinoma and liver-related mortality in patients with chronic hepatitis B. Interferon responders have most benefit from interferon treatment.

For nucleos(t)ide analogues, the key data is derived from lamivudine. The landmark study is the randomized trial of lamivudine versus placebo among patients with histologic advanced fibrosis and cirrhosis. Lamivudine treatment can reduce disease progression, defined as child-Pugh score increased by 2, hepatocellular carcinoma, spontaneous bacterial peritonitis, renal insufficiency and bleeding varices in 3 years. Development of drug resistance will diminish the benefit of lamivudine, but no rescue therapy for drug resistance was prescribed in this study. Subsequent cohorts have shown that persistently viral suppression can almost prevent cirrhotic complications, but hepatocellular carcinoma may still develop.

In chronic hepatitis C, long-term follow-up studies and meta-analysis have confirmed the benefit of antiviral therapy. Sustained responders to antiviral therapy have a reduced risk of liver-related mortality, hepatocellular carcinoma and hepatic decompensation.
Hepatocellular carcinoma (HCC) is one of the most common cancers worldwide, both in incidence (fifth) and mortality (third), with 80-90% forming on the background of liver cirrhosis (Llovet and Beaugard 2003). Contributory factors to both increases in cirrhosis and subsequent cancer development include viral hepatitis (B and C), alcohol consumption, non alcoholic fatty liver disease (NAFLD) (Jervis, 2009).

Within the liver unit of the Royal Free hospital, there are a large number of patients with stable cirrhosis who require six monthly screening for early detection of the complications of cirrhosis.

(Viral hepatitis patients will be screened by the specialist consultants’, nurse specialists who are monitoring on treatment).

The aim of the clinic is to enhance patient experience and improve the clinical service. All patients referred to nurse led clinics will have been referred by a member of the medical staff by a consultant hepatologist.


AGEING AND CONTINUED DRUG USE: WHAT DOES THE FUTURE HOLD?

Carruthers S1

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Background: There is growing evidence that the number of older drug users (50 years +) requiring drug treatment is growing. Estimates from the United States suggest the number of older drug users needing treatment will triple between 2000 and 2020, reaching 4.4 million, while in Europe the number is expected to double. In the UK the proportion of people over the age of 50 and in drug treatment doubled between 1998 and 2002 and continues to grow. What this means in terms of the future needs of older users is not being addressed at present.

Methods: A review of the published and grey literature on ageing and drug use, in particular injecting drug use, was conducted. Databases searched included Science Direct, Embase, PubMed and PsychInfo using a selection of keywords related to ageing and illicit drug use on the health and welfare needs of illicit drug users.

Results: It is widely recognised that ageing drug users are vulnerable to a diverse range of physical and mental health issues related to a lifetime of illicit drug use, in addition to those related to general ageing. The long term effects of factors such as smoking, poor living conditions, compromised health care and chronic viral hepatitis, may accelerate the ageing process by as much as 15 years. Few countries address the issue of ageing in National Drug Policies and while older users respond well to drug treatment there is a need to tailor treatment options to their specific needs.

Conclusion: The number of older drug users needing treatment and other services will continue to grow over the next few decades and these needs must be addressed at both the policy level and the grassroots level in drug treatment and aged care.
‘DOUBLE JEOPARDY’ – AIVL’S INVESTIGATION OF AGEING AND HEPATITIS C
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Introduction: Despite the youth focus of Australia’s National Drug Strategy 2012-13, anecdotal evidence suggests that opioid injectors are getting older. AIVL set out to examine the changing demographics of opioid injectors in conjunction with the interrelationship between illicit drug use and the ageing process.

Methods: AIVL drew from a number of national surveys including the Annual National Needle and Syringe Survey, the Illicit Drug Reporting System (IDRS) and the National Opioid Pharmacotherapy Statistics Annual Data Collection to establish the existence of a cohort of older opioid users. An exploratory review of the literature about older opioid users was also conducted as well as a small qualitative study with older opioid users (41) who completed face to face interviews or responded to an online questionnaire.

Results: AIVL’s study documents a growing proportion of older opioid users and a trend towards ageing in conjunction with a decrease in the number of participants in younger age categories. The study highlights the specific needs of older opioid users and their sense of unmet need. Respondents interviewed by AIVL raised a wide range of issues, including health, financial and employment issues and family matters. Most identified poverty, unstable housing and future hopelessness as key concerns.

Conclusion: The tendency to associate illicit drug use with young people has diverted attention away from older cohorts of drug users and as a result, little is known about ageing in relation to illicit drug use. AIVL’s study is one of the first to address this oversight and draws attention to the specific needs and priorities of older opioid injectors.
BARRIERS AND ENABLERS TO EFFECTIVE MANAGEMENT OF PEOPLE WITH CHRONIC HEPATITIS B

Ngo N1

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Background: Chronic hepatitis B infection requires lifelong clinical management. Up to a third of people in Australia infected with the virus remain undiagnosed, and only a small proportion of people for whom clinical management is recommended access treatment services. The hepatitis B virus is difficult to eradicate. The goals of treatment are to permanently suppress replication of the virus and to reduce the risk of progressing to advanced liver disease and developing complications such as cirrhosis, liver failure or liver cancer.

Hepatitis B is complex for both professionals and people with chronic hepatitis B. Research exploring barriers to effective management of chronic hepatitis B have reported significant barriers experienced by people with chronic hepatitis B in accessing clinical services. These range from the lack of awareness of available treatment to the relationship between clinicians and patients from culturally and linguistically diverse backgrounds.

Methods: This presentation is based on a newly conducted study that aims to identify the barriers to optimal clinical management of people with chronic hepatitis B in Australia. The study uses both qualitative and quantitative methods that include semi-structured interviews with clinicians and people with chronic hepatitis B, which in turn will inform the development of a self-administered questionnaire disseminated to people with chronic hepatitis B.

Results: This presentation will discuss the barriers and enablers identified in the study’s literature review and preliminary findings from the semi-structured interviews.

Conclusion: Identifying the barriers and enablers in the clinical management of people with chronic hepatitis B will provide insights in developing successful treatment and management protocols.
Aboriginal and Torres Strait Islander (ATSI) people who inject drugs (PWID) are perhaps the most marginalized, stigmatized and discriminated group of PWID. They are at increased risk of blood borne viruses (BBVs), health issues and social inequalities.

The impact of culture on ATSI PWID’s injecting practices, knowledge, shame and context is inherent, however it is a subject rarely acknowledged, let alone investigated.

The Australian Injecting & Illicit Drug Users League (AIVL) has an ATSI Program of Activities within its Hepatitis C/Other BBVs Project, and through this Program the extreme nature of these issues are being witnessed – and potentially addressed.

This presentation looks at the issues of culture, loss of connection and injecting practices and the ATSI PWID injecting context. The presentation gives a theoretical overview of the issues and challenges and cements the theory through personal experience. Issues such as ‘sharing’ of injecting equipment are examined, as are those of ‘shame’, ‘community’ and ‘connectivity’.

Participants will gain an understanding of the immense challenges associated with BBV prevention initiatives in relation to this most marginalized population. They will gain an understanding of the impact of culture on ATSI PWIDs ability to navigate the mainstream system through theoretical and personal representations.
WHERE’S THE SHAME, LOVE YOUR LIVER! SHAME SURROUNDS HEP C BUT WE NEED TO TALK ABOUT IT

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1 Hunter New England Population Health, 2 Aboriginal Health and Medical Research Council NSW, 3 Griffith Aboriginal Medical Service

Introduction: The Aboriginal Health and Medical Research Council of New South Wales (AHMRC) developed and implemented the ‘Where’s the shame, Love your liver! Shame surrounds hep C but we need to talk about it’ Campaign. The Campaign is aimed at increasing Aboriginal people’s knowledge and awareness of hepatitis C in an environment where stigma and shame are prevalent.

Methods: Black Chili Productions also known as the Aboriginal hip-hop band ‘The Last Kinection’ were commissioned by AHMRC to run three day workshops in 10 Aboriginal communities across NSW. People at the workshops participated in an education session about hepatitis C followed by song writing, recording, resource development and animation.

The Campaign is part of a state-wide effort to better support Aboriginal people’s access to Hep C treatment and care services. Effective partnerships between the Aboriginal Community Controlled sector, government sector and non government organisations have been key for the successful delivery of this campaign. The AH&MRC, Aboriginal Hepatitis C Access Coordinators and Hepatitis NSW have collaborated to build community and service capacity to increase Aboriginal people’s knowledge and awareness of hepatitis C and services available to them.

Results: A central outcome of the campaign has been the creation of culturally relevant resources for local communities. Localised posters have been developed along with 25 songs and videos. 170 Aboriginal people involved in the workshops will be able to share their knowledge about hep C with their community. The campaign is currently being evaluated and findings will be presented with overall outcomes.

Conclusion: This presentation will highlight the collaborative nature of both state-wide and local services to deliver effective health promotion initiatives. We will also examine the benefits of using an arts based approach for delivering health messages aimed at Aboriginal communities.

Most importantly, this presentation will explore how building community capacity is key for the successful development of long term relationships and pathways for future programs in health promotion.
Injecting drug use, its connection to hep C and our community response are central to developing an effective response that works. However, we are aware that some Maori clients may choose to not identify themselves as Maori when using needle exchange services because of whakama (shame); mainly because whanau may be alerted, the behaviour exposed and the consequences are played out or hidden and denied.

**Harm reduction philosophy:** is a Waka/Format that relates strongly to the, “Te Whare Tapa Wha” model and that an, “Action Plan” be developed which demonstrates how strategic milestones/deliverables will be met and sought strategic outcomes achieved over three years.

He Korowai Oranga initiatives address Maori health and disability needs in the sector based on the 3 key principles articulated in the Treaty of Waitangi;

- **Partnership:** Working together with iwi, hapu, whanau and Maori communities to develop strategies.
- **Participation:** Involving Maori at all levels of the health sector, with decision making, planning development and delivery of health services.
- **Protection:** Working to ensure Maori have at least the same level of health as non-Maori and safeguarding Maori cultural concepts, values and practices.

The additional pay-off to this philosophy is that the wider community benefit in four ways: mentally, physically, spiritually & socially (strengthening the Family and therefore whole Community).

Which is our Title: “Ma Wai e Taurima?” (Who’s Taking Care of the marae/tangata/whanau/family?)
**SYMPOSIUM SESSION: BASIC SCIENCE: HOST VIRUS INTERACTIONS**

2:00PM – 3:30PM

**PAPER NUMBER 36**

**IDENTIFICATION OF CD8+ T CELL EPITOPES IN THE HEPATITIS B VIRUS CORE GENE USING PHYLOGENETIC ANALYSIS**

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**Introduction:** The hepatitis B virus (HBV) peptides that are presented to the CD8+ T cells that control viral replication in subjects with an inactive, HBeAg-negative chronic HBV infection (e-InD) of genotype C are unknown.

**Methods:** Codons in the HBV genotype C4 core gene that were under positive selection pressure were identified by analysing cloned core gene sequences using the PAML program. The frequency of amino acid substitutions at these sites was compared in Tongan subjects who were homozygous for either HLA-B*4001 (n=10) or HLA-B*5602 (N=7), or who were either positive (n=11) or negative (n=30) for HLA-A*1101. CD8+ T cells recognising the wild-type peptides containing amino acids that developed HLA class I-restricted substitutions were isolated from 14 day cultures with the peptide plus interleukin-2 by flow cytometry after staining with HLA class I tetramers containing the peptide.

**Results:** HLA-B*4001-positive subjects had high frequencies of substitutions at the glutamic acid (E) residues at positions 77 (p=0.05) and 113 (p=0.002) of the HBV core gene. HLA-B*5602-positive subjects had a high frequency of substitutions at the serine (S) residue at position 21 (p=0.02). HLA-A*1101-positive subjects had a high frequency of substitutions of the arginine (R) residue at position 151 (p<0.0001). Tetramer- positive CD8+ T cells were found in 2/9 HLA-B*4001-positive e-InD subjects cultured with E77 peptide, 6/10 HLA-B*4001-positive e-InD cultured with E113 peptide and 0/4 HLA-B*4001-negative e-InD cultured with either peptide. Tetramer- positive CD8+ T cells were found in 3/6 HLA-A*1101-positive e-InD and 0/2 HLA-A*1101-negative e-InD cultured with the R151 peptide.

**Conclusion:** Phylogenetic analysis of cloned HBV-DNA sequences identified three core gene amino acids contained in wild-type peptides that are recognised by CD8+ T cells from e-InD subjects in an HLA class I-restricted manner. These peptides may be useful antigens in immunotherapy for chronic hepatitis B.
HEPATITIS C VIRUS AND LIVER LIPID METABOLISM – NOVEL TARGETS FOR ANTIVIRAL TREATMENT

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Introduction: Hepatitis C virus (HCV) has a complex relationship with liver lipid metabolism, which can be exploited to inhibit virus replication. HCV induces accumulation of lipid droplets in infected hepatocytes, and causes steatosis (fatty liver) in patients with genotype 3 infection. HCV also induces insulin resistance in infected patients, which predicts poor response to interferon-based treatments, and more rapid progression of liver fibrosis. In turn, HCV requires cellular lipid for efficient RNA replication and assembly of new virus particles. It is now recognized that HCV circulates in blood as lipoviral particles, similar to very low density lipoproteins (VLDL).

In this symposium I will summarise recent research on the interactions between HCV and cellular lipids, focusing on novel approaches to antiviral treatment. Until now, most interest has focused on HMG CoA reductase inhibitors (“statins”), and insulin sensitisers, including PPARγ agonists (e.g. pioglitazone) and metformin.

Recent work in our laboratory has identified novel antiviral targets for treating HCV. We discovered that PPARα agonists enhance the antiviral efficacy of interferon, more than other insulin sensitising drugs. We have shown that they modulate novel regulators of interferon signaling, in addition to their effects on insulin signalling and cell lipid metabolism.

In other clinical studies we found that endocannabinoid CB1 receptors are upregulated in the livers of patients with chronic HCV infection, which may contribute to HCV-induced steatosis and fibrosis. We subsequently confirmed that CB1 is also upregulated in HCV-infected hepatoma cells. We have now demonstrated that CB1 antagonists inhibit HCV replication in vitro, in part by modulating intracellular lipids. We have therefore identified two novel classes of antiviral drugs against HCV, which we hope will improve HCV cure rates, in combination with other antiviral drugs.
Interferon is a critical component of the innate antiviral immune response and has been used to treat hepatitis C virus (HCV) infection since even before the virus was actually discovered. Interferon works through an indirect mechanism by driving the expression of a large number of genes, collectively known as interferon-stimulated genes (ISGs). Hundreds of ISGs are produced upon binding of interferon to its receptor and the various ISGs have a variety of different functions in the cell, some of which are antiviral. Although interferon-based therapy leads to viral clearance in many patients with HCV infection, a significant proportion do not respond to interferon. Our research has focused on understanding the reasons for treatment non-response. We have identified gene expression profiles that are strongly associated with treatment non-response. Surprisingly, we found that patients who fail to respond to interferon show strong activation of their interferon response with high expression of ISGs before they receive treatment. In contrast, future responders show levels of ISG expression similar to uninfected controls. ISG expression can easily be evaluated using simple staining techniques on liver biopsy specimens. The staining patterns are highly predictive of treatment response. The reasons underlying the gene expression and staining patterns are not entirely clear but are likely partially virally driven and partially driven by the host. The recent identification of single-nucleotide polymorphisms near the IL28B (or interferon lambda) gene that are strongly associated with treatment response may offer some important clues. The presentation will focus on the how interferon leads to viral clearance and discuss some of the reasons for interferon non-response, with a focus on pharmacogenomics and the molecular mechanisms of the interferon-refractory state.

Disclosures:
Consulting: Abbott, Gilead, Merck, Roche, Tibotec and Vertex
Speaking: Abbott, Merck, Roche, Vertex
THE DAA DEVELOPMENT RACE – INNOVATIVE WAYS OF GETTING TO POC QUICKLY

Cranshaw N1, Hamilton P1, Schwabe C1, Robson R1, Gane E1
1 Auckland Clinical Studies

Introduction: For the last 10 years, the combination of Interferon and Ribavirin has been the Standard of Care (SOC) for treating chronic Hepatitis C infection. However, this regimen has poor efficacy and tolerability and hence treatment uptake has remained poor. Recently, telaprevir and boceprevir became the first two direct acting antivirals (DAAs) approved in the US, Europe and Australia for treatment of genotype 1 chronic Hepatitis C. However, these must still be given with SOC and have significant toxicity. More than 50 other DAAs of different classes are currently in clinical development with the ultimate goal of identifying an all-oral, interferon-free DAA combination. The FDA has now recognized HCV as an important unmet medical need and has encouraged pharmaceutical companies to increase the speed of development towards an IFN-free regimen. The large number of possible DAA candidates has driven innovative approaches to expedite timelines and in particular the time needed to obtain proof of concept (POC) for safety and efficacy of new all-oral regimens.

Methods: Auckland Clinical Studies (ACS) is an Early Phase Clinical Research Unit based in New Zealand with extensive clinical and regulatory experience in conducting healthy volunteer and patient studies. Over the last 5 years, ACS has developed several strategies in collaboration with Sponsors and regulatory authorities in order to expedite development timelines for individual and combination DAAs. ACS has recently developed the first successful IFN-free DAA combination with safety and efficacy across all HCV genotypes.

Results: ACS has recently conducted several DAA studies that combined single ascending dose (SAD) and food effect parts in healthy volunteers with a multiple ascending dose (MAD) part in patients. By doing so, a single study protocol can provide the essential Proof of Concept efficacy and safety data required for designing later phase III trials. Regulatory authorities usually require preclinical combination toxicity data before approving patient study protocols that involve two new molecular entities. In the Inform 1 study ACS was able to present a scientific argument that allowed the use of 2 DAAs for which no combination toxicity data was available.

Conclusion: Innovative ways of conducting clinical research can overcome regulatory barriers and reduce timelines and will help fill an important unmet medical need.

Disclosure of Interest Statement: None of the authors have any conflicts of interest.
**ELECTRON: ONCE-DAILY GS-7977 PLUS RIBAVIRIN FOR 12 WEEKS PROVIDES SVR WITHOUT INTERFERON IN TREATMENT-NAÏVE AND EXPERIENCED HCV GT 1/2/3**

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**Introduction:** GS-7977, a uridine nucleotide analog, is a potent direct-acting antiviral agent with a high barrier to resistance and excellent safety profile. Pegylated interferon (PEG) plus ribavirin (RBV) provided 96% SVR24 in HCV GT 2/3 patients (PROTON study) and 90% in GT 1 patients (ATOMIC study). The aim of the ELECTRON study was to determine the safety and efficacy of GS-7977/RBV, without PEG, for 12 weeks in treatment-naïve and treatment-experienced patients infected with HCV GT 1, 2, and 3.

**Methods:** Initially, 40 treatment-naïve, non-cirrhotic patients with HCV GT 2 or 3 were randomized to receive GS-7977 plus RBV for 12 weeks, with PEG administration for 0, 4, 8, or 12 weeks. An additional 10 patients received GS-7977 monotherapy for 12 weeks. Following these results, a further 60 patients received GS-7977/RBV for 12 weeks, within the following arms: (i) 10 GT 1 prior null responders; (ii) 25 GT 1 treatment-naïve, (iii) 25 GT 2/3 prior nonresponders.

**Results:** Treatment was well tolerated with no deaths, treatment discontinuations, or treatment-related SAEs.

HCV RNA was undetectable in all 120 patients after only 4 weeks and remained undetectable throughout treatment (i.e no treatment breakthrough occurred). SVR4 was achieved by 100% treatment-naïve and 80% prior nonresponder GT 2/3 patients, and by 88% treatment-naïve and 11% prior null responder GT 1 patients. No nucleotide resistance (S282T) has been detected in any patient.

**Conclusion:** GS-7977/RBV for 12 weeks is very well tolerated and achieves consistent and potent antiviral suppression across all genotypes regardless of prior treatment history. SVR rates in treatment-naïve patients are higher than previously achieved with PEG/RBV (± protease inhibitor). Based on these results, the Phase III programme in GT 2/3 patients will be GS-7977/RBV for 12 weeks. GT 1 prior null responders will likely require a longer treatment duration or the addition of another DAA.

**Disclosure of Interest Statement:** Dr Gane attended International Advisory Board for Gilead, Janssen and Roche.
Introduction: Viral dynamics during acute hepatitis C virus (HCV) infection can provide important insights into immunopathogenesis. This study aimed to investigate HCV-RNA and alanine transaminase (ALT) patterns during acute HCV among individuals with persistent infection (PI) and spontaneous clearance (SC).

Methods: The Australian Trial in Acute Hepatitis C (ATAHC) is a prospective study of recent HCV. Longitudinal HCV-RNA and ALT levels were compared between participants with PI and SC (post-treatment values were excluded). Two consecutive negative qualitative HCV-RNA (<10 IU/mL) following acute HCV was defined as SC.

Results: Among 163 participants, 111 were treated. Median HCV-RNA and ALT levels were initially high for both PI group (HCV-RNA=5.9 log (IU/mL); ALT=764 IU/L) and SC group (HCV-RNA=4.2 log (IU/mL); ALT=1765 IU/L), with subsequent declines between two and three months following the estimated date of infection (median HCV-RNA decline: PI=1.98 log; SC=0.68 log (IU/mL)). In SC participants, median HCV-RNA and ALT levels by month five were <10 IU/mL and 49 IU/L, respectively. In PI participants, median HCV-RNA was 4.0 log (IU/mL) between months 3-4, increased by 1.0 log (IU/mL) between months 4-5, and subsequently remained relatively stable. The regression lines fitted for HCV-RNA levels between days 30 and 90 post-infection illustrated no significant difference in slopes between participants with SC and PI (β=0.68; 95%CI -0.23 to 1.60; P=0.138). After extending the study period to 30-120 days post-infection, a significant difference was demonstrated in regression lines slops fitted for HCV-RNA levels between participants with SC and PI (β=0.79; 95%CI 0.15 to 1.43; P=0.016).

Conclusion: Initial enhanced HCV virological control was seen in participants subsequently undergoing spontaneous clearance and those progressing to persistent infection. HCV-RNA patterns between these groups appeared to diverge between day 90 and 120 days, with the latter time-point potentially being ideal timing for early therapeutic intervention.

Disclosure of Interest Statement: These authors disclose the following: J. Grebely is on the Speakers Bureau and has received grant/research support from Merck. G. Matthews is a Consultant, is on the Speakers Bureau and has received grant/research support from Merck and Roche. She is also on the Speakers Bureau for Bristol-Myers Squibb and has received grant/research support from Gilead. G.J. Dore is a Consultant, is on the Speakers Bureau and has received grant/research support from Merck and Roche. He is also a Consultant for Abbott and Tibotec.
**PAPER NUMBER 167**

**IMPACT OF TREATMENT ON INJECTING DRUG USE BEHAVIORS DURING RECENT HCV INFECTION**


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**Introduction:** HCV treatment is safe and effective among people who inject drugs (PWIDs). However, there are concerns by some physicians that treatment may increase injecting drug use. This study evaluated the impact of HCV treatment on recent injecting drug use and injecting equipment sharing.

**Methods:** ATAHC was a study of the natural history and treatment of recent HCV infection. Participants with HCV received PEG-IFN a2a (180 µg/week) and participants with HCV/HIV received PEG-IFN a2a (180 µg/week) with ribavirin (all patients received 24 weeks). Injecting risk behaviours were assessed longitudinally. The impact of HCV treatment on recent (past 30 days) injecting and injecting equipment sharing were assessed using generalized estimating equations.

**Results:** Overall, 163 (HCV, n=113, 69%; HCV/HIV, n=50, 31%) were enrolled (76% IDU ever). Among treated individuals (n=111), 28% (n=31) had recently used injecting drugs prior to treatment initiation. Recent IDUs were more often younger (P=0.005), unemployed (P=0.032), with poorer education (P=0.039) and HIV negative (P=0.001). Treatment for HCV infection did not increase the proportion reporting daily injecting drug use (pre-treatment, 38%; week 48, 30%) among those with a history of injecting drug use. Between pre-treatment and week 48, reductions in injecting risk behaviours among recent injectors were observed, including no recent needle/syringe borrowing (69% vs. 95%) and no recent injecting equipment sharing (31% vs. 95%). In adjusted models, there was no impact of HCV treatment on recent injecting drug use [adjusted odds ratio (AOR) 1.06; 95% CI: 0.93, 1.21, P=0.365], but HCV treatment was associated with a decrease in recent injecting equipment sharing (AOR 0.85; 95% CI: 0.74, 0.99, P=0.030).

**Conclusion:** Injecting drug use and injecting frequency remained stable during treatment. Reductions in injecting equipment sharing were observed among PWIDs receiving HCV treatment.
Australian Trial in Acute Hepatitis C (ATAHC) II Study

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Introduction: ATAHC was a highly successful investigator driven collaborative Australian study funded by US National Institute on Drug Abuse (NIDA) examining natural history and feasibility of treatment of recent hepatitis C (HCV) infection in a predominantly injecting drug use (IDU) population. ATAHC created a multi-centre, national recruitment network and recruited 163 subjects (HIV negative and positive) in a hard to reach study population. ATAHC showed treatment for recent HCV infection is effective in this population. ATAHC II has shifted the focus of feasibility in IDU population to exploring the effectiveness of response-guided therapy strategies in recent HCV infection (acquired through IDU or high-risk same-sex sexual practices).

Methods: Subjects are eligible if they have recent HCV infection, as defined by positive anti-HCV antibody preceded by either acute clinical HCV infection within the prior 12 months or documented seroconversion within the prior 24 months. 120 subjects (HIV positive or negative) will be recruited across Australia. Eligible subjects are offered pegylated interferon a-2a (PEG-IFN) with or without Ribavirin (RBV), determined by HIV status and estimated duration of HCV infection. Duration of treatment depends on individual’s response to treatment, ranging from 8 to 48 weeks.

Results: 27 subjects (HCV n= 6, HCV/HIV n= 21) screened between August 2011 and April 2012. 6 subjects commenced treatment. 2 subjects enrolled into the untreated group.

Conclusion: ATAHC II builds on the success of ATAHC and utilizes the same effective recruitment network. Response-guided therapy is a novel strategy to explore in the recent HCV infection population. ATAHC II also provides the opportunity for evaluation of patterns of HCV transmission and primary HCV resistance. A substudy of ATAHC II - Direct Antiviral based therapy for recently acquired hepatitis C (DARE-C) examines the safety and efficacy of response-guided triple therapy (PEG-IFN, RBV, and Telaprevir) for the treatment of early chronic HCV infection.

Disclosure of Interest Statement: The ATAHC II Study is supported by a research grant from the US NIDA.
PAPER NUMBER 119

QUANTIFICATION OF HBSAG IN NUCLEOS(T)IDE-NAÏVE PATIENTS TREATED FOR CHRONIC HEPATITIS B (CHB) WITH ENTECAVIR (ETV) MONOTHERAPY OR ETV PLUS TENOFOVIR (TDF) IN THE BE-LOW STUDY

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Introduction: ETV and TDF are potent antivirals for CHB treatment. Evolution of serum HBsAg levels may predict treatment response in CHB. We examined the association between changes in HBsAg levels and response to ETV+/TDF in the BE-LOW study.

Methods: In this open-label, multicenter study, 379 nucleos(t)ide-naïve patients with HBeAg(+) or HBeAg(-) CHB were randomized and treated with ETV 0.5mg + TDF 300mg (N=197) or ETV 0.5mg (N=182) daily for 100 weeks. HBsAg levels were quantified (Abbott Architect assay) at baseline and Weeks 12, 48 and 96.

Results: Mean [SD] baseline HBsAg levels were comparable across treatment arms (ETV: 4.08 [0.72]; ETV+TDF 3.96 [0.79] log10 IU/mL), and across subgroups by baseline ALT, genotype and age (<50 or >50 years old). Mean changes in log10 HBsAg level from baseline through Week 96 were similar in both treatment groups (-0.67 each) and in patients with vs without HBV DNA <50 IU/mL at Week 96 (0.66 with vs 0.74 without). Mean baseline HBsAg was numerically higher in HBeAg(+) vs HBeAg(-) patients in both treatment arms (ETV: 4.33 vs 3.50; ETV+TDF: 4.22 vs 3.39 log10 IU/mL), as were mean changes from baseline through Weeks 12, 48 and 96 (Week-96, ETV: -0.91 vs -0.13; ETV+TDF: -0.95 vs -0.07 log10 IU/mL). In HBeAg(+) patients, mean HBsAg changes from baseline were numerically greater among those with HBeAg loss at Week 96 vs those without (Week-96, ETV: -1.40 vs -0.56; ETV+TDF: -1.61 vs -0.62 log10 IU/mL).

Conclusion: In a mixed population of nucleos(t)ide-naïve CHB patients, decline in HBsAg levels through 96 weeks of treatment was comparable between patients receiving ETV and those receiving ETV+TDF. Greater declines in HBsAg level were associated with an HBeAg serological response in HBeAg(+) patients.
IMPACT OF HEPATITIS C VIRUS INFECTION ON LIFE EXPECTANCY: A POPULATION-BASED LINKAGE STUDY

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Introduction: Hepatitis C virus (HCV)-related liver disease deaths have risen steadily in Australia over the last 20 years. However, the direct impact of HCV on life expectancy has not been well defined.

Methods: HCV cases notified to the New South Wales Health Department from 1992-2006 were linked to cause of death data. Causes of death were defined using ICD-9 and ICD-10 codes for deaths before and after 1997, respectively. Temporal trends in the distribution of age at death were examined over two follow-up periods: 1992-1999 and 2000-2006. Abridged life tables were constructed from age-specific mortality rates. Life expectancy from ages 18-70 for mortality due to non-drug-related causes was estimated using competing risk methods and compared to general population life expectancy (Australian Bureau of Statistics).

Results: The cohort comprised 82034 individuals notified with HCV mono-infection: mean age at diagnosis was 36 years (SD ±12) and 63% were male. Between 1992 and 2006, 4626 deaths occurred. Mean age at death among males due to liver- and drug-related causes was 55 (SD ±14) and 37 (SD ±8) years, respectively; and among females was 62 (SD ±15) and 36 (SD ±8) years, respectively. During the period 1992-1999, 17% (n=258) of deaths were liver-related and 37% (n=559) drug-related. After 2000, 22% (n=685) of deaths were liver-related and 18% (n=559) drug-related. Excluding drug-related causes of death, there was an average reduction in life expectancy of 5.3 (SD ±1.1) and 6.2 (SD ±0.7) years for males and females, respectively.

Conclusion: Among people with diagnosed HCV, an increasing proportion of deaths are related to liver disease. The direct impact of HCV on life expectancy is considerable in the Australian setting. An “ageing cohort” of people with HCV means that unless treatment uptake and outcomes improve, the burden of liver-related deaths will continue to escalate.
PAPER NUMBER 155
MOST HEPATITIS C REINFECTIONS THAT CLEAR SPONTANEOUSLY GO UNDETECTED – BAYESIAN ANALYSIS OF A PROSPECTIVE LONGITUDINAL STUDY

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Introduction: Spontaneous clearance of HCV followed by reinfection has been observed in people who inject drugs (PWID) but reinfection rates are likely to have been underestimated due to reinfection episodes occurring between study visits. We used a Bayesian approach to estimate the effect of missed reinfection episodes in a prospective longitudinal study of PWID in Australia with a relatively short test interval (median 4 months).

Methods: A markov model of HCV reinfection and spontaneous clearance was fitted to study anti-HCV, HCV RNA, and HCV genotype data. Bayesian post-estimation was used to project likely reinfection rates, proportion of reinfections with spontaneous clearance, duration of reinfection, and proportion of participants with long-term chronic infection after five years.

Results: The observed rate of reinfection, spontaneous clearance percent and reinfection duration were, 22.1 per 100 person-years (PY), 77%, and 3.9 months, respectively. Model estimates were as follows: assuming the average duration of reinfection was 4, 2, 1, and 0.5 months (durations based on literature), respectively, the median (95% credible interval [CRI]) reinfection rate was 48(29-67), 69(40-97), 113(68-163), 202(118-297) per 100 PY; the median (95% CRI) spontaneous clearance percent was 88%(78-96%), 90%(82-95%), 93%(88-97%), 96%(94-98%). When duration of reinfection was not fixed, the median duration was 1.12 months (95% CRI:0.25-3.88). The median reinfection rate was 104 per 100 PY (95% CRI:29-368); the credible interval is wide because of the association between reinfection rate and duration. Nonetheless, the estimation of spontaneous clearance percent was precise (median; 93%; 95% CRI:84%-99%). After five years, the percentage (95% CRI) of participants with chronic reinfection was 27%(14-43%).

Conclusion: Uncertainty in model estimates notwithstanding, these findings suggest spontaneous clearance of HCV is common in reinfection but there is substantial risk of chronic reinfection in the long-term. More information about the duration of reinfection would result in more precise estimates of reinfection rate.
**Introduction:** Liver cancer has the fastest increasing incidence and the joint fastest increasing mortality of any cancer in Australia. We investigated the incidence of primary liver cancer including hepatocellular carcinoma (HCC) in Victoria, most of which is attributable to chronic viral hepatitis infection. We also examined the association between HCC incidence and hepatitis B prevalence, including surveillance notifications, seroprevalence, and migration trends.

**Methods:** De-identified data on cancer diagnoses in the ICDO-3 range 8170/3 to 8180/3 in Victorian residents from 1st January 1982 to 31st December 2007 were obtained from the Victorian Cancer Registry. Temporal trends, geographic distribution, age and country of birth information were analysed.

**Results:** In 26 years 3496 cases of liver cancer were diagnosed in Victorians, with 1924 of these being HCC. HCC incidence increased from 1982-1998, by 6.2% per year (95%CI 4.7% to 7.7%, p<0.001) in metropolitan areas and 5.3% per year (95%CI 2.2% to 8.5%, p=0.001) in rural areas, but subsequently plateaued. Many HCC cases were diagnosed late; even in more recent years, 20% of patients died within 30 days of diagnosis. Half of the cases were born overseas, predominately the WHO European region (60%; mainly Italy, England and Greece) and the Western Pacific Region (28%; mainly Viet Nam and China). Four fifths of people diagnosed with liver cancer resided in Melbourne, predominantly the North and West metropolitan area.

**Conclusion:** These data confirm the need for improving early diagnosis of liver cancer/HCC. Furthermore, emerging trends in geographic and cultural clustering demonstrate opportunities for targeted preventive interventions, including opportunistic testing and appropriate antiviral therapy. Further research is required into the nexus between chronic viral hepatitis and liver cancer incidence to address the joint fastest increasing cause of cancer death in Australians, as highlighted in the National Hepatitis B Strategy 2010-2013.
MODELLING NEW HCV ANTIVIRAL TREATMENTS FOR PREVENTION OF HCV AMONG PEOPLE WHO INJECT DRUGS: A MULTI-COUNTRY ANALYSIS OF IMPACT

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Introduction: Recent modelling studies have suggested hepatitis C virus (HCV) antiviral treatment may be effective as primary prevention among people who inject drugs (PWID) by reducing population prevalence. We predict the impact of new direct-acting antiviral treatments on HCV prevalence among current PWID in three international settings.

Methods: We extend a previously published deterministic mathematical model of HCV transmission among injecting drug users, including heterogeneity among the PWID population (high/low risk, on/off opiate substitution therapy). The model is parameterized to three settings with varied prevalences (Edinburgh, UK; Melbourne, Australia; Vancouver, Canada). We use current injector sustained viral response (SVR) rates from a recent meta-analysis (43% genotype 1, 73% genotypes 2/3), setting-specific treatment levels, and realistic scenarios of future HCV treatments (90% SVR and 24 weeks treatment duration, available in 5 years) to predict: the impact of scaling-up treatment to achievable levels (10, 20, and 40 per 1000 PWID annually, 5 year scale-up); treatment rates necessary to halve prevalence within 15 years.

Results: Scaling-up treatment to 40 per 1000 PWID annually could reduce HCV chronic prevalence by 91% in Edinburgh (from 25% to 2%), 65% in Melbourne (from 50% to 17%), and 31% in Vancouver (from 65% to 27%) within 15 years. With new treatments, prevalence could be halved within 15 years if treatment is scaled up to 14, 32, and 58 per 1000 PWID annually in Edinburgh, Melbourne, and Vancouver, respectively. New treatments will increase intervention impact by 30-55% over 15 years compared to current treatments.

Conclusion: Achievable levels of HCV treatment for PWID could substantially reduce prevalence in a range of global settings, including areas with high (65%) chronic prevalence. The development of new antiviral treatments is likely to substantially increase the potential for using treatment as prevention in this population.

Disclosure of Interest Statement: The authors have nothing to disclose.
WHAT’S IN A NAME? EVALUATION OF A NOVEL SCREENING TOOL FOR IDENTIFYING OVERSEAS-BORN PRIMARY CARE PATIENTS AT RISK OF CHRONIC HEPATITIS B

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Introduction: Routine hepatitis B virus (HBV) testing is recommended for all Australians born in the Asia-Pacific region, a priority population as identified in Australia’s First National Hepatitis B Strategy 2010-2013. However, patient country of birth is rarely recorded in primary care services, hindering opportunistic testing and facilitating poor outcomes for those affected and ongoing transmission to susceptible contacts.

This study evaluates the potential of a validated list of names associated with Asia-Pacific country of birth to be used to predict risk of chronic hepatitis B (CHB) infection.

Methods: Association between the name list and risk of CHB infection was assessed by matching the names to infectious disease surveillance records of notifications for chronic HBV, and estimates of screening test measures of sensitivity, specificity, positive predictive value (PPV) and negative predictive value (NPV) were derived by comparing with notifications for a disease not associated with country of birth. These measures were calculated within sex, age and country of birth subgroups to assess name list predictiveness according to demographic factors.

Results: Sensitivity of the name list in detecting notified cases of HBV was 61.0% when matching either first or family name and 31.3% when matching both names, with corresponding specificity values of 86.5% and 98.2%. PPV and NPV varied widely according to the expected prevalence of CHB in the population.

Sensitivity was slightly higher in women, considerably lower in those aged under 10 years and comparatively higher in those born in China and Vietnam.

Conclusion: The name list effectively identifies patients at risk of chronic HBV infection, and as a screening tool can aid in initiatives to improve timely diagnosis and therefore outcomes for patients in primary care in areas where Asian-born migrants bear the majority of the burden of chronic hepatitis B.
AN ASSESSMENT OF THE COST-EFFECTIVENESS OF TREATING CHRONIC HCV INFECTION AMONG PEOPLE WHO INJECT DRUGS IN VICTORIA, AUSTRALIA

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Introduction: Injection drug use is the single most important risk factor for hepatitis C (HCV) infection, yet there is limited economic analysis of HCV treatment among people who inject drugs (PWID). We aimed to determine the cost-effectiveness and cost-utility of providing pegylated interferon alfa-2a (PEG-IFN) and ribavirin (RBV) treatment, compared to no antiviral treatment, to current and former PWID, and non-injectors in Australia.

Methods: A decision analytic model simulated the lifetime costs and outcomes of antiviral treatment initiated at different stages of liver fibrosis (mild, moderate and advanced fibrosis) compared with no antiviral treatment. The treatment modalities were simulated across separate cohorts of 1000 hypothetical patients with chronic HCV, calibrated to HCV-infected and PWID population in Victoria, Australia. The main outcome measures were incremental costs per quality-adjusted life year (QALY) gained, and future costs were discounted at 3% annually.

Results: Compared to no treatment, treatment of current injectors with PEG-IFN/RBV with mild liver fibrosis resulted in a discounted average gain of 1.40 QALYs (95%CI 0.74–2.06); for an added cost of AUD$13,096 (95%CI $11,311–$14,936); with an incremental cost-effectiveness ratio (ICER) of $9,354 (95%CI $7,251–$15,285) per QALY. Former injectors gained an average of 2.13 (95%CI 1.41–2.73) QALYs after treatment at a cost of $9,872 (95%CI $8,231–$11,535), yielding an ICER of $4,634 (95%CI $4,075–$5,825) per QALY. Never injectors gained 2.32 (95%CI 1.72–2.71) QALYs after treatment at a cost of $8,348 (95%CI $6,686–$10,012), yielding an ICER of $3,598 (95%CI $3,601–$3,887) per QALY. Early treatment was more cost-effective than standard and late treatment in all three cohorts.

Conclusions: Despite co-morbidities, increased mortality, and generally reduced adherence, treatment of both current and former PWIDs is cost-effective. Our cost estimates fall well below unofficial Australian cost-effectiveness thresholds for public subsidies. Expanding treatment for PWID is warranted on purely economic grounds.

Disclosure of Interest Statement: No conflicts of interest to declare
‘OUR C-CIETY’: THE TARGETS AND CHALLENGES OF SOCIAL MEDIA

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Introduction: AIVL’s ‘Our C-ciy’ is Australia’s only social networking peer-based site targeting people living with hepatitis C who have a history of injecting drug use and/or on pharmacotherapy. Feelings of alienation and fear of disclosure and discrimination can lead to people being hesitant to access health services, information and treatment.

Methods: With such a specific target audience there was always going to be challenges. These include: reaching the target audience; standing out in a crowded social media market; advertising whilst trying to avoid negative attention; attracting new members; creating ‘traffic’; keeping the site vibrant; and sourcing material. Whilst AIVL was proactive in addressing the challenges that could be predicted others were addressed as they arose.

To overcome these challenges for ‘Our C-ciy’ AIVL initiated a number of strategies, most are ongoing: advertising via services that target ‘Our C-ciy’s audience; promoting the site to health workers; ‘normalising’ hepatitis C; opening membership; using blogs and You-Tube; constantly sourcing new material; selecting material in plain English; and focusing on information and evidence rather than a ‘chat’ site.

Results: Membership has grown over time with an increase noticed as certain strategies were initiated. Although keeping people ‘active’ on the site remains a challenge as hepatitis C shifts in priority in people’s lives.

Conclusion: While the case of social media for health promotion can be a challenge it can also be highly effective. Participants will gain: an awareness of ‘Our C-ciy’ and how to engage people in the site; an understanding of social media as a popular and unique method to address health needs for marginalised groups; an insight of challenges and strategies to address them; and an understanding social media can support people who inject drugs to make informed choices without the typical catchy ‘tag lines’ or popular culture ‘wrappings’.
EMPOWERING, SKILLING AND EQUIPING C-ME COMMUNITY CHAMPIONS TO REPRESENT THEIR COMMUNITIES’ VOICE, HAVE IT HEARD AND ACCESS THE SERVICES THEY NEED

Introduction: The advent of new and more effective direct acting antiviral therapies for hepatitis C mean more people are accessing treatment and care. Recent health reforms across NSW have enhanced the opportunities for engagement and influence by consumers and local communities. More decisions about health services are now taken at a local level. There are more decision makers and more layers of policy to be influenced and shaped.

Methods: Hepatitis NSW’s C-Me Project engages and trains 15 Expert Community Champions (ECCs) from across NSW to act as local activists and advocates, lobbying local influencers and providing a voice for communities affected by hepatitis C and engaging with other members of affected communities. ECCs are trained and supported to volunteer and use their life experience, understanding and position of influence to help their peers advocate for change.

Results: Development of a framework for peer participation and consultation with affected communities across NSW.

Development of a training program to empower and skill up 15 ECCs to engage with a variety of stakeholders.

Recruitment of Local Community Champions to work alongside the ECCs in advocacy and campaigning.

Changes in policy and service delivery for people living with or affected by hepatitis C

Conclusion: Communities of people living with hepatitis C are stronger with more active participants working together to tackle hepatitis C and enact change. The number of HCV treatment consumers across NSW is increased and their increased expectations around choice, around appropriate and relevant services that suit their needs and lifestyles are met. As a result, people with hepatitis C are able to lead more active, healthier lives.

Disclosure of Interest Statement: The C-Me Project is part jointly funded by an untied educational grant to Hepatitis NSW from Merck Sharp & Dohme (makers of Bocepruvir) and Janssen (makers of Telaprevir).
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USING THEATRE TO BREAK DOWN THE BARRIERS: A PARTNERSHIP APPROACH TO HEPATITIS C AWARENESS

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Since 2005, an exciting and groundbreaking theatre project has been breaking down the myths and the silence around hepatitis C via the use of live performance and comedy. The production raises awareness and provides transmission and prevention education about hepatitis C to at risk communities such as Aboriginal people, young people, and prisoners.

As part of an innovative partnership approach between Hepatitis Victoria (HV), Ilbijerri Theatre Company and the Victorian Department of Health (DH) the project commenced in 2005 with the production of Chopped Liver, which threaded hepatitis C prevention and awareness messages around significant cultural and historical events in the lives of Aboriginal people in Australia.

Building on the success of Chopped Liver, in 2010 the production was reworked into Body Armour. The focus of this production was on the popularity of body art in young people, the issues around peer group pressure, and the dangers of ‘backyard’ or unsterile body art.

To date, the two productions have been seen by over 10,000 people in 150 communities. They have toured in New South Wales, Queensland, South Australia and Western Australia. In 2012, Hepatitis Victoria expanded its support of the play to offer pre and post-education sessions to schools that hosted the production.

This presentation will focus on the effectiveness of using community art projects for viral hepatitis education and awareness.
FINDING VOICES FOR HEPATITIS B IN AUSTRALIA
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For many years people living with HIV and AIDS have had a role in education and care, as well as advocacy and policy. Their role has been acknowledged as a central tenet to a successful response to HIV/AIDS. There are currently positive speakers’ bureaus in many states of Australia for people living with HIV and people living with hepatitis C, however currently only the Queensland Positive Speakers Bureau have built any capacity to expand into hepatitis B.

Two people living with hepatitis B will explore the impact that sharing their story publicly has had on their lives and the lives of family, friends and co-workers. They will consider the barriers for people speaking publicly about living with hepatitis B, including those of culture and language; and how these can instead be made into strength. They will also discuss how employing people living with hepatitis B as pro-active public speakers in both community and medical education programs, as outreach workers, peer educators and treatments’ advocates, has the potential to positively affect the response to hepatitis B in Australia.

For too long, the lack of a voice of their own made people with living with chronic hepatitis B feel forgotten amidst the large amount of information and messages that focused solely on HIV/AIDS and hepatitis C. Their stories will add new insight and diversity to the current understanding of what it means to live with chronic viral hepatitis.
THE ROLE OF GENERAL PRACTITIONERS IN MANAGING PATIENTS WITH CHRONIC HEPATITIS B

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Introduction: The number of people in Australia diagnosed with chronic hepatitis B (CHB) and its consequent burden on the health care system is increasing. General Practitioners (GP) play a critical and poorly described role in clinically managing the infection. This study explored how GPs understood their role in the clinical management of CHB.

Methods: Semi-structured interviews were conducted with 26 GPs from five Australian jurisdictions. General practitioners self-identifying as having a ‘high caseload’ of patients and/or a particular interest in CHB were purposively recruited. The interviews were analysed according to the principles of grounded theory.

Results: General practitioners were culturally diverse with almost two-thirds communicating with their patients in at least one language other than English; the two major languages were one or more Chinese languages, and Vietnamese.

The principle roles identified by GPs in relation to CHB were diagnosis, monitoring and mediating between patient and specialist and patient education. Participants identified that they were ideally placed to be involved in the management of CHB particularly long term monitoring because they are more accessible than specialist services particularly in relation to flexible business hours, geographic accessibility, and familiarity with community languages and cultural norms. There was also general support for GPs having an active role in the delivery of CHB pharmaceutical treatment with shared care the preferred model.

Conclusion: An optimal clinical and public health response to CHB requires the role of GPs to be clearly defined. Based on the findings of this study the role of GPS should be more substantive and include management and treatment of CHB beyond that of diagnosis and monitoring.
Introduction: Hepatitis B is preventable through a safe and efficacious vaccine but a consistent finding from cohort studies is that despite being at high risk for a vaccine preventable infection, people who inject drugs (PWIDs) have extremely low immunisation coverage rates for hepatitis B. Due to this situation, there is a point at which we must ask “why are the immunisation coverage rates for hepatitis B so consistently poor among people who inject drugs when this group has been identified as an “at-risk” population for targeted vaccination programs for over two decades?” People who inject drugs represent almost 60 per cent of incident hepatitis B infections in Australia. Available research also reflects a general lack of knowledge in relation hepatitis B vaccination among PWIDs. AIVL and its member organisations have long been aware that many PWIDs do not know there is a vaccine for hepatitis B and/or are frequently confused about the forms of viral hepatitis for which vaccines are available. Research reflects the fact that those most at risk of hepatitis B infection seem to be those least likely to be offered or to take-up the opportunity to be vaccinated for hepatitis B. The literature also suggests that PWIDs have a lack of knowledge in relation to their sero-status and frequently think they have been vaccinated when they have not. Within this context, this presentation will argue that hepatitis B prevention among PWIDs cannot be viewed in isolation, but rather must be seen as a cost-effective opportunity to both reduce the burden of disease and improve access to primary health care for a highly marginalised group within the community. Achieving this however will not be a matter of simply ‘intensifying our current efforts’. It will be argued that a much greater and more detailed understanding of PWIDs in Australia and the factors associated with their ongoing susceptibility to hepatitis B infection is needed before we can expect to effectively address what can reasonably be described as a comprehensive public health failure.

Disclosure of Interest Statement: This presentation is based on ‘Access to Hepatitis B Vaccination for People Who Inject Drugs and Sex Workers in Australia’ produced as a joint policy discussion paper by the Australian Injecting & Illicit Drug Users League (AIVL) and the Scarlet Alliance. To the best of our knowledge, this paper includes all relevant citations for research and other authored work referred to or relied upon within the paper.
**PPARα AGONISTS INCREASE INTERFERON SENSITIVITY AND MAY BE AN EFFECTIVE SUPPLEMENTARY TREATMENT FOR DIFFICULT TO TREAT PATIENTS WITH HEPATITIS C**

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**Introduction:** Over 50% of patients with HCV genotype 1 infection fail to clear the virus with current treatment. These patients have high basal expression of interferon stimulated genes (ISGs), with limited ISG induction following interferon therapy. This “refractory” state may be mediated by the negative regulators of the IFN signalling pathway, SOCS1/3 and AXL. We have shown that the PPARα agonist WY14643 enhances the antiviral activity of IFN against HCV, so investigated its effects on IFN signalling.

**Methods:** The effect of PPARα agonists on IFN response was examined in JFH1 HCV cell culture models. HCV infected cells were treated with chronic low-dose IFN to induce a refractory state, either alone or in combination with the PPARα agonist WY14643, followed by a higher dose of IFN. Activation of the interferon signalling pathways was measured by detecting STAT phosphorylation using western blots. ISG promoter activation and ISG expression were measured by luciferase reporter and quantitative PCR (qPCR) respectively.

**Results:** Adding the PPARα agonist WY14643 to IFN decreased HCV replication. Pre-treatment with WY14643 increased ISG stimulatory STAT1 phosphorylation following IFN stimulation, and reduced ISG inhibitory STAT3 phosphorylation. Interferon stimulated response element (ISRE) promoter activity (responsible for ISG induction) increased, whereas gamma activated sequence (GAS) promoter activity (responsible for induction of inhibitory SOCS genes) decreased. AXL and SOCS3 mRNA were reduced by WY14643. Many antiviral ISGs showed increased sensitivity to IFN.

**Conclusion:** PPARα agonists partially reverse the IFN refractory state in HCV infected hepatocytes. We observed increased STAT1 phosphorylation and ISRE promoter activation, as well as decreased STAT3 phosphorylation and GAS promoter activation. We propose adding PPARα agonists to pegylated IFN and ribavirin for people with hepatitis C who have previously failed standard treatment, to reduce elevated baseline ISG expression and restore the antiviral response to IFN.

**Disclosure of Interest Statement:** No interests to disclose
SCREENING OF ISGS REVEALS VIPERIN AND THE IFITM FAMILY OF PROTEINS TO BE NOVEL ANTI-HCV EFFECTORS

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Introduction: Interferon stimulation of hepatocytes results in expression of hundreds of interferon stimulated genes (ISGs) that limit HCV replication however the ISGs responsible are not well defined. Lentiviral expression screening analysis of ISGs associated with HCV decline in an interferon treated population of Huh-7 cells has identified viperin and the IFITM family of proteins to have anti-HCV activity in vitro.

Methods: Viperin and the IFITM family cDNAs were cloned from a cDNA liver library into lentiviral packaging vectors. QRT-PCR analysis was utilized to assess the anti-viral activities of ISGs and their mutants following transient transfection assays and infection of stable cell lines using the JFH-1 HCVcc system. Confocal microscopy together with FRET analysis was employed to analyse the localization of ISGs and HCV antigens within hepatocytes.

Results: Expression of viperin prior to HCV JFH-1 infection of Huh-7.5 cells was able to limit HCV replication by up to 60%, whereas JFH-1 infection of Huh-7 cells expressing IFITM proteins was able to decrease HCV infection by up to 95%. Viperin localized to both the ER and to HCV replication complexes (RCs) and was able to interact with NS5A. Removal of >30aa from the N-terminus of viperin re-localized the protein and inhibited its anti-HCV activity, whereas removal of 15aa from the C-terminus of the protein also abrogated its anti-HCV activity, through an inability to interact with NS5A. Viperin was also able to interact with the pro-viral host factor VAP-A in concert with NS5A to inhibit HCV replication. Further analysis of the IFITM family of proteins revealed that IFITM1 localised to the cell surface and specifically interacted with the HCV cellular receptor CD81 in Huh-7 cells.

Conclusion: Our results suggest that the ISGs viperin and IFITM1 have anti-HCV activity and that other anti-HCV ISGs remain to be elucidated.
IMMUNE RESPONSES AGAINST FOUNDER HEPATITIS C VIRUSES IN ACUTE ASYMPTOMATIC SUBJECTS

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Background: Hepatitis C virus (HCV) evolves rapidly to escape host selective pressures. Adaptive immune responses including HCV-specific neutralizing antibodies (NAbs), as well as T cell responses are believed to be the critical determinants of the outcome of primary infection. By studying acutely infected subjects pre-seroconversion, we have shown that HCV transmission is characterized by only a few founder viruses undergoing sequential genetic bottlenecks. However, the timing and role of adaptive immune responses in driving the early phase of primary HCV infection remain largely unexplored.

Methods: Ten subjects recruited in a prospective cohort of high risk HCV uninfected prisoners were identified with initial viraemia prior to ultimate seroconversion. Blood samples were collected fortnightly over 24 weeks before viral clearance (n=7) or chronicity (n=3) was resolved. Full genome next generation sequencing was utilized to characterize the founder virus(es) and their evolution. HLA Class I restricted T cell epitopes were predicted (n=600), peptides synthesized, and CD8 T cell responses examined. Antigen-specific effector and regulatory CD4 T cell responses were also examined in a novel flow cytometric assay based on expression of CD25, C134, and CD39. HCV pseudoparticles (HCVpp) representing the founder variant and other minor variants were constructed to examine NAbs responses in patient sera and to characterize CD81 binding affinity.

Results: In experiments completed to date, both CD4 and CD8 T cell responses as well as escape variants were detected as early as 4 weeks post infection. Analysis of the infectivity of HCVpp revealed that founder viruses were more infectious than chronic variants. NAbs studies are in progress. Further analyses of the completed datasets will allow detailed description of the adaptive immune selection pressure on viral evolution, and the role of these responses in driving viral clearance.

Conclusion: This work provides the first genome-wide investigation of adaptive immune responses in very early asymptomatic acute HCV infection. Multi-facetted host responses target specific regions of the founder viruses. These data will inform prophylactic vaccine development. *These authors contributed equally to this work.
HCV SPECIFIC CD8⁺ T CELL TARGETS SHOW LIMITED ABILITY TO GENERATE CROSS-GENOTYPE RESPONSES

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Introduction: The ability to design a successful universal vaccine against HCV would be improved by methods that can identify T-cell targets that cover the diverse HCV genotypes (GT) and subtypes circulating in the population. We have utilized a population-based genetic study to identify putative in vivo targets of the host’s T-cell immune response. This study tested these putative T-cell targets to determine if i) they were true in vivo HCV T-cell epitopes and ii) if they elicited cross-GT and/or cross-subtype responses in individuals with known multiple exposures to HCV.

Methods: Interferon gamma (IFN-γ) ELISpot assays were used to determine the ability of predicted and previously described HLA class I-restricted CD8⁺ T-cell epitopes to elicit an immune response in individuals likely to have been exposed to multiple GTs/subtypes. Furthermore, to investigate potential cross-GT/subtype responses, alternative GT3 and subtype (GT1b) peptides spanning the same region as the responding GT1a peptides were synthesized and re-tested in HCV exposed individuals who had previously responded to the peptide set.

Results: Of the predicted HCV T-cell targets tested approximately 40% showed detectable IFN-γ ELISpot responses. A similar percentage of positive responses were observed for known HCV T-cell epitopes. Further characterization of these peptides showed that at least 70% appear to be GT-specific and to lesser extent subtype specific T-cell targets.

Conclusion: A similar percentage of positive IFN-γ ELISpot responses to predicted and known HCV T-cell epitopes in our screen of T-cell responses in individuals exposed to HCV reveals the usefulness of our genetic approach to identify true in-vivo HCV T-cell targets. Most of these T-cell targets appear to be GT1-specific and to some extent subtype specific reflecting the extensive HCV genetic diversity between genotypes/subtypes. These findings have important implications for the design of a universal vaccine against HCV.

Disclosure of Interest Statement: The authors have no conflicting interests.
Introduction: Chronic infection with hepatitis B virus (HBV) contributes to considerable global morbidity and mortality. In New Zealand, approximately 90,000 individuals are estimated to have chronic HBV infection.

The antiviral agent lamivudine has been approved and funded for the treatment of chronic hepatitis B since 2000 in New Zealand. Another antiviral, adefovir is often used in patients who develop lamivudine resistance. The main mutations conferring resistance to the antiviral agents used to treat HBV infection are predominantly detected in the YMDD motif of the HBV pol gene. Specifically, resistance to lamivudine is most commonly due to mutations affecting amino acids 180 and 204, and resistance to adefovir is usually due to mutations affecting amino acids 236 and 181. Currently, PCR amplification and DNA sequencing methods used to detect antiviral resistance are only able to detect major (≥20%) populations of resistant HBV. The GS Junior platform (Roche Diagnostics) is a next-generation sequencing (NGS) system that performs clonal sequencing and simultaneous sequencing of multiple targets.

Methods: Based on results obtained with previous conventional sequencing using the AB3130 platform, ten samples with differing genotypes and resistance-conferring mutations were used for analysis using the GS Junior platform.

HBV pol gene was amplified using primers with the same sequences as for conventional sequencing.

The samples were sequenced and analysed following the GS Junior user manual protocol.

Results: The GS Junior and AB3130 assay showed a high level of agreement for mutations detected in samples (9/10; 90%).

However, in one sample, three additional mutations were detected using NGS.

In this sample, two additional nucleotide mutations were detected in amino acid 204 (M204I/V) and, a mutation in amino acid 181 (A181V) was also detected.

Conclusion: We found that NGS was able to genotype HBV accurately when compared to conventional sequencing results.

We also found additional resistance-conferring mutations that were not detected by conventional Sanger sequencing, which only detects dominant populations of resistant virus.

Disclosure of Interest Statements: None
A SECOND GENERATION THERAPEUTIC CELLULAR VACCINE FOR HEPATITIS C VIRUS

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Introduction: We previously reported the results of a Phase I clinical trial using a cellular vaccine to treat HCV patients who had previously failed therapy. Although this trial fulfilled a major criterion of a Phase I trial viz. safety, the HCV-specific immune responses were transient. We have now designed a second generation vaccine based on preclinical data in mice.

Methods: We used a mouse dendritic cell line which was transfected with RNA encoding the HCV NS3 protein. We manipulated these cells to ensure maximum immunogenicity, using an in-house process, the subject of a patent application. We vaccinated mice with these cells on two occasions one week apart. These studies provided encouraging data to permit the design of a new clinical trial.

Results: The cells were either manipulated as described above or not. Ten days after the second dose, splenocytes were stimulated in an ELIspot with NS3-specific peptides. Mice vaccinated with the manipulated cells generated ELIspot levels which were approximately 80-100 fold greater than the cells which were not manipulated. This protocol will be used to vaccinate HCV patients and the outcomes measured by i) safety ii) cell mediated immunity to NS3 and other HCV proteins and iii) viral load.

Conclusion: It will be expensive and time consuming to prove the efficacy of an HCV prophylactic vaccine. Consequently, we formed the hypothesis that an effective therapeutic vaccine will also represent an effective prophylactic vaccine, and we planned a new clinical trial to begin in June to examine the efficacy of our second generation vaccine in patients who have previously failed conventional interferon-based therapy.

Disclosure of Interest Statement: The authors have no disclosures but are preparing a patent to protect the IP. As this will be submitted prior to the presentation, full details of the protocol will be available then.
INCREASING BURDEN OF HEPATOCELLULAR CARCINOMA IN AUSTRALIA AND NEW ZEALAND

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The burden of hepatocellular carcinoma (HCC) is increasing in many countries, including Australia and New Zealand. Population incidence rates of HCC have more than doubled over the past decade and are projected to continue to increase over the next two decades. The extremely poor survival following HCC (median survival 12-15 months), including limited recent improvements, lead to trends in HCC mortality that closely parallel those for HCC incidence.

There are several factors that are contributing to increasing HCC incidence, including:

1) High prevalence and ageing cohorts of people with chronic HCV infection with escalating burden of advanced fibrosis;
2) High prevalence of HBV, particularly among indigenous and Asian ethnic populations;
3) Increasing burden of other causes of chronic liver disease;
4) Low uptake of HCV treatment, and sub-optimal treatment responses particularly in the setting of advanced fibrosis;
5) Low uptake of HBV treatment, although high efficacy in setting of advanced fibrosis has led to greater impact than HCV;
6) Lack of broad implementation of HCC screening strategies among high-risk individuals, such as those with cirrhosis.
7) Under-diagnosis of HBV and HCV in some population groups.

The proportion of HCC cases attributed to chronic viral hepatitis has increased over the last two decades. Improving HCV antiviral therapy holds great promise for HCC prevention, but interferon-free regimens are required before there will be substantial improvements in both treatment uptake and outcomes.
WHAT ARE THE CURRENT PERCEPTIONS ABOUT THE LINK BETWEEN LIVER CANCER AND CHRONIC HEPATITIS B IN AUSTRALIA’S CHINESE AND VIETNAMESE COMMUNITIES?

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Currently, there are an estimated 170,000 people with chronic hepatitis B (CHB) in Australia, and more than half of these people were born in the Asia-Pacific region. If not appropriately managed, chronic hepatitis B infection can cause cirrhosis and liver cancer. Liver cancer has the fastest increasing incidence rate of all cancers in Australia.

The National Hepatitis B Strategy (2010-2013) states health promotion interventions need to build health literacy for people with chronic hepatitis B and their families. Two Australian organisations have investigated current understandings about hepatitis B and liver cancer prevention in the Chinese and Vietnamese community.

In one project, a self-administered questionnaire was distributed to Chinese and Vietnamese participants at community gatherings in Brisbane. It measured the participants’ knowledge on hepatitis B, including a question to ask if people with CHB can develop liver cancer.

Many participants were not aware of the severity and asymptomatic nature of hepatitis B. Consequently, they may not have checked their hepatitis B status, risking late diagnosis and complications including liver cancer (Vietnamese 68% vs Chinese 60%).

Using qualitative research methods, Cancer Council Victoria conducted focus groups with the Melbourne Chinese community. Participants were asked to discuss how they perceive liver cancer, the link with CHB, and whether more information around the link would motivate people to be tested for CHB as cancer prevention behaviour.

To prevent liver cancer, it is vital that those most at risk have access to timely diagnosis and treatment. This presentation will discuss the implications and recommendations of designing culturally responsive programs, and how cancer prevention messages can be integrated into hepatitis B prevention and management initiatives.
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WHAT IS THE EVIDENCE FOR THE CLINICAL EFFICACY OF HEPATITIS B TREATMENT IN PREVENTING LIVER CANCER?
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Clearance of HBsAg is the marker of ultimate viral control in chronic hepatitis B. If HBsAg clearance occurs before the age of 50, the prognosis is excellent. Peginterferon and oral antiviral agents can induce HBsAg clearance in about 10% and 5% of patients, respectively. High HBV DNA has been found to associate with higher risk of HCC. However the data from individual studies on the long term benefit of interferon or antiviral agent is conflicting. In a meta-analysis including 12 studies on interferon and 4 studies on antiviral agents, interferon is associated with approximately 33% reduction and lamivudine approximately 80% reduction in risk of HCC. In a subsequent systematic review including 21 studies, 3 of which included untreated controls, antiviral treatment was associated with a significantly reduced risk of HCC (2.8% among treated vs 6.4% among untreated patients in a median follow-up of 46 months). Patients who had no liver cirrhosis, virological remission and HCC surveillance had the lowest risk of HCC development.
WHAT IS THE EVIDENCE FOR THE COST EFFECTIVENESS OF HEPATITIS B TREATMENT IN PREVENTING LIVER CANCER?

Robotin M1

1 Cancer Council NSW

In Australia approximately 170,000 people have chronic hepatitis B (CHB) infection, but fewer than 3% are receiving antiviral therapy, which can achieve effective suppression of viral replication and substantially reduce the risk of progression to cirrhosis, malignant transformation and death. The high costs of antiviral treatments and the asymptomatic nature of chronic HBV infection represent significant barriers to disease control and are associated with an increased incidence of hepatocellular cancer (HCC).

All major liver societies groups provided hepatitis B–specific treatment guidelines, which include recommendations for HCC surveillance, although its benefits are not clearly established.

The cost effectiveness of different CHB and HCC screening, vaccination and treatment strategies is a topic of debate among health economists and policy makers, but so far data on the cost effectiveness of screening and treating high-risk groups for viral hepatitis are limited.

A recent European review identified two studies addressing this question. Both the US study and the Dutch study suggested that screening and treating migrants from high prevalence for CHB was both clinically effective and cost-effective.

We compared the cost of different strategies of HCC control in Australian populations with high CHB prevalence and found that while a HCC surveillance strategy is less costly (average cost of AUS$8,479 per person), it has negligible effects on QALYs (a gain of 0.014 QALYs) and high incremental cost effectiveness (AUS$401,516/QALY gained).

A primary care-based HCC prevention strategy, with CHB surveillance and treatment customized according to viral load, age and ALT levels is more costly (AUS$14,600 per person), but leads to substantial QALYs gains (0.923 QALYs gained), costing AUS$12,956/QALY gained. The strategy is associated with substantial reductions in cases of cirrhosis (by 52%), HCC diagnoses (by 47%) and CHB-related deaths (by 56%), compared to current practice.

In conclusion, it appears that CHB surveillance and treatment in populations with high CHB prevalence is cost-effective and preferable to HCC surveillance as a cancer control strategy.
BACKGROUND FOR STAYING SAFE RESEARCH: USING POSITIVE DEVIANCE RESEARCH METHODS TO DISCOVER NEW APPROACHES TO EPIDEMIOLOGY AND PREVENTION

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Background: About 30% of IDUs in New York, Sydney and a number of other cities remain uninfected with either hepatitis C or HIV even after many years of injecting drugs. This suggested that they were “positive deviants” who were engaging in practices that were helping them avoid high-risk situations and/or behaviours.

Methods: We in New York developed a new research design, the “Positive Deviance Control-Case Life History,” which uses qualitative techniques to develop hypotheses about how they had remained uninfected. We then developed and validated a questionnaire to measure “staying safe” practices. We also developed a behavioural intervention to teach IDUs these practices.

Results: Hypotheses suggested the importance of symbiotic goal attainment that would help avoid “upstream” pressures conducive to injecting in high-risk environments and, in cases where such injection became necessary, would help them avoid high-risk behaviours in those environments.

Conclusion: Research teams in other cities have conducted related studies. Reports on some of these will follow, as will a report on our NY intervention. A staying safe approach could be used to explore disease prevention among other risk groups and for selected other diseases.
PAPER NUMBER 280
STAYING SAFE LONDON: INDIRECT TECHNOLOGIES OF HCV PREVENTION
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Background: Current harm reduction interventions have not been successful in stemming the high incidence of hepatitis C virus (HCV) infection among people who inject drugs (PWID). We undertook qualitative research with PWID in London in order to explore the individual, social and structural facilitators of long-term viral avoidance.

Methods: Recruitment took place through low-threshold drug services and drug user networks. The sample comprised 37 PWID, 22 of whom were HCV antibody negative. Participants had been injecting for an average of twenty years. Data collection comprised two to three interviews with each participant, with the latter interviews incorporating reference to a computer-constructed life history time-line.

Results: The majority of participants had a present focused temporal orientation and did not view HCV as a pressing concern. While HCV positive and negative participants reported similar network sharing patterns, closer examination revealed differences in orientations to risk and the adoption of protective practices. In this presentation we discuss the motivations underlying HCV protective practices as well as facilitators of viral risk and findings in relation to the ‘risky negative’ participants.

Conclusion: HCV protective practices are not necessarily motivated by HCV avoidance. HCV prevention interventions that attend to the short term pragmatic concerns of PWID have the potential to reengage PWID who are disenchanted with harm reduction messages. The authors have no conflicts of interest to declare.
STAYING SAFE SYDNEY: THE LOGIC OF CARE AND TRUST IN HEPATITIS C TESTING

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Objective: The international Staying Safe project hopes to inform a new generation of hepatitis C (HCV) prevention strategies. Here Sydney Staying Safe examines the practice of testing for HCV infection. The rate of HCV testing among people who inject drugs in Australia is considered high by international standards. HCV testing is an obvious point of departure when exploring what additional, innovative prevention activities could occur. HCV testing among the Sydney Staying Safe sample is explored using Mol’s notion of the logic of care and trust (both interpersonal and institutional), and in relation to the Australian Hepatitis C Testing Policy.

Methods: This qualitative study involved in-depth interviews with 25 participants; 15 of whom had been recently confirmed as HCV negative and 10 as HCV positive. Twenty-three participants were interviewed twice, two participants were lost to follow-up. Assistance with recruitment was provided by The Hepatitis Incidence and Transmission Study-community (HITS-c), an ongoing observational study designed to inform future trials of candidate HCV vaccines in Sydney, Australia.

Results: Despite reporting high levels of regular testing, participants also described the following barriers: reluctance among health professionals to regularly confirm seronegative status; concerns about disclosing injecting drug use for fear of attracting child welfare agency involvement; and, perceptions of intrusive questioning as part of testing procedure.

Conclusion: People who inject drugs should be acknowledged for the work they do in regularly engaging in hepatitis C testing. The Australian Hepatitis C Testing Policy may fail to promote sufficient flexibility, sensitivity, invention and adaption, in meeting the needs of each individual that presents for testing. The experience of a HCV infection test (for both client and health worker) should be considered an ongoing process rather a standard product – in Mol’s words, something we ‘shape, invent and adapt, time and again’.
STRATEGIES LONG TERM INJECTORS USE TO AVOID HCV INFECTION

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Introduction: In Australia, about 90% of the new cases of hepatitis C virus (HCV) infection in 2010 were attributable to injecting drug use. Surveillance conducted through 52 needle syringe programs in 2010 (n=2109) found that 60% of long-term injectors (11+yrs) have biological markers of HCV infection.

Method: We conducted qualitative research to explore long term injector’s perceptions of the factors that enabled them to avoid hepatitis C infection. Participants were drawn from a prospective cohort study of people who inject drugs in Melbourne. Eligibility criteria for the current study were laboratory confirmed HCV antibody and HCV RNA negative serostatus. Data was collected through a semi structured in-depth interview, was digitally recorded and transcribed verbatim. Thematic analysis was conducted.

Results: In-depth interviews with 28 participants, all of whom reported having initiated injecting more than eight years ago were completed. Data from interviews reveals a range of specific features of participants own behaviour which they believe helps them remain ‘HCV free’. In analysing the interview data we have identified specific techniques some injectors have adopted behaviourally to avoid HCV infection. These include control over the preparation the drugs solution prior to injection and injecting only with HCV negative partners. Other explanations for remaining HCV free include: control over their environments especially their injecting environment, having innate personal characteristics like ‘special blood’. The data also reveals a more active and assertive dimension to avoiding hepatitis C infection. The range of personal and environmental resources appears key to staying free from hepatitis C. These include access to employment, stable housing, choice and control of the types of drugs used and the type of support networks available.

Conclusion: We have found that many participants believe that HCV is not an inevitable consequence of their injecting drug use. There is much in the narratives of drug users from this cohort to utilise and build upon for the development of innovative prevention programs for current active injecting drug users.
STAYING SAFE INTERVENTION: TRAINING INJECTION DRUG USERS IN STRATEGIES TO AVOID HCV AND HIV INJECTION-RELATED INFECTIONS

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Background: A Phase I development study explores the acceptability, feasibility, and efficacy of "Staying Safe" (Ssafe), a new strengths-based intervention to facilitate long-term prevention of HIV and hepatitis C virus (HCV) among injection drug users (IDUs).

Methods: Ssafe is grounded in lessons from HIV/HCV seronegative long term IDUs. Ssafe intervenes upstream in the causal chain of injection risk behaviors by training in the use of long-term risk-avoidance strategies and practices. A one-week, five session intervention (10 hours total) was piloted using a pre- and post- test design.

Results: 51 participants completed baseline and 3-months follow-up questionnaires. Participants significantly increased long-term risk avoidance behaviors by increasing planning skills, control over drug use, and self-efficacy while reducing exposure to hazardous situations, number of injections, money spent on drugs, and impact of drug use on their lives. Injection risk also decreased.

Conclusion: Ssafe is a promising approach to reducing HIV/HCV risk among IDUs.
VEIN CARE AS A BLOOD BORNE VIRUS PREVENTION STRATEGY - AN INTERACTIVE ONLINE RESOURCE

Liebelt S.1

1 Australian Injecting & Illicit Drug Users League (AIVL)

Introduction: Injecting drug use invariably causes vein damage to the individual. This damage, be it abscesses, collapsed veins or bruising means that the process of injecting becomes increasingly more difficult, and potentially over time more ‘bloody’.

As the majority of injecting occurs within and with networks of peers, it is imperative that the amount of blood in the injecting environment is minimized.

With this in mind, AIVL embarked on a project to create an interactive online resource which provides information on vein care as an important aspect of individual safer injecting techniques and blood borne virus (BBV) prevention strategies. It aims to introduce the concept of good ‘vein health’ as a means of lowering the potential of contracting and/or passing on hepatitis C and other BBVs.

“AIVL’s Online Vein Care Guide” was developed into six topic areas, it also contains short animations depicting the development of complications for injecting drug users; abscess formation, vein collapse and how the re-use of syringes damages veins.

Results: To date this resource has been extremely well received, to the extent that it has become the ‘first point of call’ for both injecting drug users, and people who work with them to assist in increasing knowledge of the basic principles surrounding vein care as a BBV prevention strategy.

Conclusion: This presentation outlines not only the success of this online resource to date; it discusses the concept of visual interactive medium as a BBV prevention strategy. The presentation also includes a short ‘tour’ of the site to demonstrate the importance of vein care in relation to BBV prevention, as an area not often given credence.
People who currently inject drugs (PWID) drive hepatitis C (HCV) transmission. Whilst people with long standing chronic HCV infection who have never or no longer inject drugs, if HCV should not be ignored, if HCV is to be eradicated we must also focus our efforts on reducing HCV transmission in PWID.

Until recently the eradication of HCV was only a distant possibility. The impact of harm reduction strategies such as opiate substitution therapy and needle and syringe programs has been limited due to a combination of partial efficacy and poor coverage. PWID are often unaware of their HCV status due to a lack of regular testing with few countries having clear guidelines for the frequency of testing in this group. In the past PWID were excluded from accessing HCV treatment, and despite treatment now being available to PWID and evidence that PWID can be successfully treated, the total numbers of PWID undergoing HCV treatment remain disappointingly low.

Recent advances in HCV treatment and prevention gives us reason for optimism. There is a real opportunity to eradicate, or at least substantially reduce HCV infection in PWID if a focussed, sustained and multipronged approach is taken that includes increasing coverage of opiate substitution therapy and needle and syringe programs, regular HCV screening with appropriate pre and post-test counselling and improved access to HCV treatment. Also PWID do not exist in isolation; the structure of their social and injecting network needs to be considered as HCV prevention and treatment strategies are implemented.

This paper provides an overview of recent advances in HCV that informs the components of the multipronged approach required to achieve HCV eradication. Importantly PWID need to be included in the development of each component of such a strategy to ensure the success of the various programs aimed at the eradication of HCV.
MODELING THE IMPACT OF HCV TREATMENT ON TRANSMISSION

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1 University of Bristol

HCV antiviral treatment is effective at clearing the disease, but few people who inject drugs are treated. Mathematical models have shown that a feasible level of antiviral treatment for PWID is an effective and cost-effective means of HCV prevention in this population. Our modeling work indicates continued advances in antiviral treatment will increase the potential prevention impact of treatment in a range of global settings. Furthermore, case-finding among people who inject drugs can be cost-effective in various settings, provided continuity of treatment and care can be ensured.
**PAPER NUMBER 284**

**KEEPING THE INDIVIDUAL CENTRAL TO HCV PREVENTION, TREATMENT AND CARE**

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1NSW User & AIDS Association (NUAA)

**Introduction:** Hepatitis C treatment is a dynamic and exciting field at present with new treatments and approaches seemingly advancing quickly. In this ever shifting landscape it is more important than ever to recall who the treatment advances are for – the individual.

**Summary:** While it may be the case that on a population health level, undertaking successful hepatitis C treatment with larger numbers of people has the potential to drive down transmission rates by reducing the pool of infection, there are a number of reasons why it is important not to put all our eggs in this particular basket.

Safer using is not just about hepatitis C or even wider Blood-Borne Virus transmission, but also about individual health and self-care.

NUAA holds that it is crucial that the sector does not lose sight of the fact that treatment should first and foremost be about improving the health and wellbeing of the person receiving the treatment.

The fact is that individuals who inject drugs - those most at risk of hepatitis C – often live in a challenging environment, with limited access to sterile injecting equipment, ongoing stigma and discrimination – including from within this sector. This environment includes challenges not only to prevention but also to effective treatment and care and it is crucial that we continue to work on improving enabling environments for the individual.
HCV TREATMENT AS PREVENTION: KEY COMPONENTS FOR FEASIBILITY

Dore GJ
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The landscape of hepatitis C virus (HCV) treatment will change dramatically over the next decade with the licensure of many HCV direct-acting antiviral (DAA) therapy agents, and development of interferon-free combination DAA regimens. The probability of well tolerated, simple (single daily dosing), short duration (12 weeks) regimens with high cure rates (90% plus) has the potential to turnaround escalating HCV-related liver disease burden. The additional potential of new HCV therapeutic regimens to contribute to HCV prevention for people who inject drugs (PWID) has recently been raised. However, there are several key components that would be required to lead to a population level impact on HCV transmission, including:

1) Maintenance of existing HCV prevention strategies, in particular needle syringe programs;
2) Improved access to drug dependency treatment;
3) Broadened HCV testing, counselling and clinical service provision within existing harm reduction services;
4) Expansion of HCV treatment services within prisons, regional and rural settings, and primary care;
5) Evaluation of strategies to optimize HCV treatment adherence;
6) Drug price reform for DAA agents.

The feasibility of a strategy of HCV treatment as prevention will also depend on maintenance of treatment and care for the individual living with HCV as the central focus, involvement of the affected community in debate and development of public health strategies, and improved HCV awareness.
Hepatitis C Virus (HCV) is a blood borne infection that mostly leads to chronic liver disease and may result in liver failure and hepatocellular carcinoma and is now the leading indication for liver transplantation in Australia. Due to shared routes of transmission the prevalence of HCV co-infection with HIV is increased and has been estimated to be approximately 15-30%. Transmission usually requires blood-to-blood contact, particularly injecting drug use (IDU), and this has been the focus of public health investigations and interventions. HCV sexual transmission has traditionally not been considered efficient and current guidelines do not recommend safe sex practices for discordant couples.

Sexual transmission of HCV in HIV positive men who have sex with men (MSM) has been increasingly reported in several case series over the last decade. Most of these cases deny traditional transmission risk factors such as IDU and certain sexual practices such as fisting, use of toys and group sex and have been associated with increased risk of HCV. In addition many cases are associated with recent acquisition of sexually transmitted infection as well as non injecting recreational drug use. The role of HIV immunosuppression in acquisition and persistence of infection is unclear.

The vast majority of cases are diagnosed after detection of abnormalities on LFTs in the course of routine management of their HIV and are asymptomatic. Treatment in the setting of acute infection with pegylated interferon and ribavirin is more effective although there is a high reinfection rate with ongoing sexual risk factors.

HCV transmission in the absence of IDU is an emerging problem for MSM with HIV. There is an urgent need for education of the at-risk community and to develop and promote effective prevention strategies to this population.
Impact of HIV and HBV Co-Infection on Morbidity and Mortality Among People with HCV

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Data are commonly available on the impact of HCV and HBV on HIV. The effects of HBV and HIV on HCV disease progression are less commonly reported. The three viruses have significant global health impact and commonly have overlapping impact on at risk populations. This presentations will overview recent epidemiologic studies on morbidity (hospitalisations) and mortality of these co-infections in HCV infected populations with a particular focus on data linkage studies conducted in Australia.
PAPER NUMBER 303
THERAPEUTIC STRATEGIES FOR HIV/HCV CO-INFECTION
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Successful treatment of HIV/HCV coinfected individuals has traditionally been hampered by poor treatment outcomes, potential ARV interactions and reluctance by both clinicians and patients to undergo prolonged treatment courses. As treatment for HCV moves into a new era with the rapid development of the Directly Acting Agents, the potential for benefit to HIV/HCV coinfected individuals is great. This session will discuss the most current data on DAA based treatment outcomes within this population as well as the potential problems that may arise, specifically with relevance to those living with HIV. In particular the potential for drug-drug interactions with antiretroviral therapy will be considered as well as future directions in therapy.
Due to similar modes of transmission, dual infection with hepatitis B virus (HBV) and hepatitis C virus (HCV) is common. Dual infection may affect 3-20% of patients with viral hepatitis and may be associated with more rapid progression to cirrhosis and a higher rate of hepatocellular carcinoma (HCC). Therefore, identification of dual infection and appropriate treatment is important.

Guidelines for the treatment of dual infection suggest initial treatment of the dominant virus, usually HCV, followed by treatment of HBV. Several small studies have reported sustained virological response (SVR) rates for standard interferon and ribavirin (RBV). However, only 3 significant studies of pegylated interferon (pegIFN) and RBV have been published.

The largest study compared 161 Taiwanese patients with dual infection and 160 with HCV mono-infection treated with pegIFN and RBV. SVR rates were similar between dual and mono-infected patients with either genotype 1 HCV (73% vs 77%) or genotype 2/3 HCV (86% vs 88%). Loss of hepatitis B surface antigen (HBsAg) was observed in 11% of patients with dual infection. However, 28/77 patients (36%) with undetectable HBV DNA at baseline had detectable HBV DNA after treatment or follow up.

Similar findings were reported in a study of 19 German patients with HCV-dominant (HCV RNA positive at baseline) dual infection. HCV RNA was undetectable in 14/19 patients (74%) 24 weeks after completing 48 weeks of pegIFN and RBV. Post-treatment HBV viraemia was observed in 4/13 patients with undetectable HBV DNA at baseline. Analysis of 18 Korean patients with dual infection from a larger study of pegIFN and RBV in HCV yielded similar results.

Treatment strategies are currently based on limited data. However, advances in the treatment of HCV, improved serological and virological tests for HBV and non-invasive assessment of liver disease may all help improve understanding of HBV/HCV dual infection.
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POSTER ABSTRACTS

POSTER NUMBER: 1
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IL28B GENOTYPING USING HIGH RESOLUTION MELT CURVE ANALYSIS FOR ALL HEPATITIS C CLINICAL SAMPLES

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Introduction: Host single-nucleotide polymorphisms (SNPs) related to the IL28B (Interleukin-28b) gene (rs12979860 C/T, rs8099917 T/G and rs12980275 A/G) are associated with hepatitis C virus (HCV) viral control, including spontaneous clearance and interferon-based treatment response. Recent trials (REALIZE, ADVANCE, SPRINT-2) using directed antiviral agents (DAA) demonstrate that IL28B polymorphism continues to influence treatment response in the DAA era. Herein we describe a rapid and affordable method of detection for these three SNPs comparing two DNA extraction methods for all HCV clinical sample types.

Methods: The DNA from whole blood, plasma and serum from 10 healthy donors were extracted using DNA Qiagen kit or Biomerieux easyMag. The amplicons containing the SNPs were amplified in triplicate by PCR and genotyped by high resolution melting (HRM) analysis using Roche LightCycler platform. All HRM results were confirmed by direct sequencing of amplified DNA extracted from buffy coat cell pellet.

Results: When using QIAgen extraction method, the HRM success rate for 10 serum samples centrifuged at 400g for 10 minutes was 70% (rs12980275), 83% (rs8099917) and 70% (rs1297960) when compared with whole blood. Likewise, the HRM success rate for plasma spun at 1500g for 20 minutes was 53%, 53%, and 43% respectively. EasyMag DNA extraction of the same 10 serum samples demonstrated a 100% success rate for the three SNPs. EasyMag DNA extraction of the same plasma samples resulted in success rates of 100% (rs12980275), 93% (rs8099917) and 90% (rs1297960).

Conclusion: Our data indicates that HRM is a rapid, affordable and reliable method for IL28B polymorphism detection using patient Buffy Coat cell pellet or whole blood. This technology will also be assessed on total nucleic acid from dried blood spot. The amplification of DNA extracted from serum and plasma using the automated EasyMag platform improves amplification, and allows HRM analysis to reliably genotype all three SNPs from serum samples.

POSTER NUMBER: 2
PAPER NUMBER: 161

MOLECULAR AND PHYLOGENETIC ANALYSIS OF HBV DETECTED IN INDIGENOUS AUSTRALIAN POPULATIONS

Littlejohn M1, Edwards R1, Sozzi T1, Yuen L1, Revill P1, Cowie B2, Davies J3, Tong S4, Davis J4, Locarnini S1.
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Introduction: There has been little research carried out into the distinctive strain of HBV found among Indigenous Australians, who experience a significant health burden from chronic hepatitis B infection. The aim of this study was to characterise full length genomic sequences of the HBV isolated from chronically infected Indigenous people from Australia’s Northern Territory.
Methods: 46/62 serum samples obtained from HBsAg-positive Indigenous Australians in the Northern Territory were HBV DNA positive by PCR and sub-genotyped as C4, serotype ayw3. Twenty six full genome sequences (FGS) were generated and compared to 84 human, primate and non-primate sequences by phylogenetic and recombination analysis, using programs including neighbour-joining, maximum likelihood and Simplot.

Results: Phylogenetic analysis of the 26 FGS mapped to their own distinct branch of the genotype C clade, whereas the surface gene mapped more closely to genotype J than genotype C. The basal core promoter, pre-core and the S promoter regions were typically genotype C pattern, whilst the S open reading frame exhibited the ayw3 serotype shared with genotype D, J, chimpanzee and Gibbon HBV sequences, indicating possible previous recombination events. Pairwise comparison within the 26 FGS revealed divergence between the sequences of 0.2% to 4.9%.

Conclusion: The data obtained from the distinctive strain of HBV detected in this study population will allow a comparison of Indigenous Australian HBV strains with those found in other parts of Australia, the Asian-Pacific region, and other regions of the world providing potential insight into human migration patterns and viral transmission patterns.

POSTER NUMBER: 3
PAPER NUMBER: 83
A BIOINFORMATIC INVESTIGATION OF HEPATITIS B VIRAL ENTRY INTO HUMAN HEPATOCYTES
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Introduction: More than ten human proteins have been shown to possess an ability to bind Hepatitis B Virus (HBV), and attachment, binding and fusion of HBV to hepatocytes have also been implicated to involve in the process of HBV’s entry to host cells. However, it remains elusive as to what are the human factors that enable HBV to enter hepatocytes.

Methods: In this study, we chose human proteins as targets to search for hints of those with a faint sequence similarity to HBV envelop proteins. Using these HBV-like human proteins, we then considered protein-protein interaction (PPI) data, tissue expression data, subcellular localization data, and knowledge mined from literature to investigate the entry mechanisms of HBV.

Results: We identified 34 human proteins likely to interact with HBV. Of them, five are focal adhesion proteins taking part in caveolar-mediated endocytosis, and one of the five, transforming growth factor beta 1, is reported, by an in vitro binding assay experiment, to be a PPI partner of a protein that triggers the early stage of caveolar-mediated endocytosis. These results are in agreement with another experimental finding that HBV prefers to enter hepatocytes via caveolar-mediated endocytosis; therefore, the five proteins related to caveolar-mediated endocytosis identified from the bioinformatics study offer intriguing targets for experimental validation of their suggested roles in HBV’s access to hepatocytes.

Conclusion: Based on the result of bioinformatics investigation, we propose a two-step mechanism of how HBV relies on five focal adhesion proteins to initiate caveolar-mediated endocytosis. None of the five human proteins have been studied for their roles in HBV entry, and therefore represent novel targets for future explorations.

Disclosure of Interest Statement: Conflict of Interest: none declared.
POSTER NUMBER: 4
PAPER NUMBER: 190

THE DEMOGRAPHICS AND OUTCOMES OF VIRAL CIRRHOTIC PATIENTS IN SOUTH AUCKLAND 2000-2011
Hsiang JC, Bai WWH, Raos Z, Stableforth W, Selvaratnam S, Gane E, Gerred S
Middlemore Hospital, Otahuhu, South Auckland

Introduction: To describe the demographic features, and mode of presentation and outcomes of newly diagnosed viral cirrhotic patients at Middlemore Hospital from 2000 – 2011

Method: Patients were identified from an electronic database of cirrhotic patients seen by the Middlemore Gastroenterology Service between January 2000-2011. A retrospective review of the case records was performed.

Results: A total of 441 patients collected. Most of the patients were Pacific Islanders (29.7%), Asian/Chinese (27.2%), Europeans (20.6%), and Maori (15.9%). The median age of diagnosis of cirrhosis was 52.3 years of age. On average, 32 patients were diagnosed with cirrhosis each year. The incidence of viral cirrhotics remained constant each year. The predominant viral hepatitis was hepatitis B (63%), hepatitis C (34%). Four patients had HBV/HCV co-infection, eight patients had HBV/HDV infection, and one had HBV/HDV/HCV co-infection. Ninety six patients developed hepatocellular carcinoma (HCC), most of them had HBV cirrhosis (84.4%). Fifteen of these patients underwent liver transplantation. Thirty five patients underwent liver transplantation over the period for end stage cirrhosis (20 patients) and hepatocellular carcinoma (HCC) (15 patients). Four out of the 35 patients received liver transplant died (two recurrent HCV, one skin malignancy). 114 deaths were recorded over the 11 year period. Most of the patients died from HCC (36.8%), and liver failure was the second most common cause of death (11.4%).

Conclusion: The number of viral cirrhotic patients seen per year remained fairly stable. HBV cirrhosis remains a large clinical workload in South Auckland. HCC continues to be a significant cause of morbidity and mortality in viral cirrhotic patients, particularly in patients with HBV cirrhosis.

POSTER NUMBER: 5
PAPER NUMBER: 191

THE PATTERN OF HEPATOCELLULAR CARCINOMA SURVEILLANCE AND ADHERENCE TO SURVEILLANCE GUIDELINES FOR VIRAL CIRRHOTIC PATIENTS IN SOUTH AUCKLAND 2000-2010
Hsiang JC, Bai WWH, Raos Z, Stableforth W, Gane E, Gerred S
Middlemore Hospital, Otahuhu, South Auckland

Aim: To establish the compliance to, and the pattern of hepatocellular carcinoma surveillance for viral cirrhotic patients in South Auckland 2000-2010

Method: Patients were identified from an electronic database of cirrhotic patients seen by the Middlemore Gastroenterology Service between January 2000-2011. A retrospective review of the case records was performed.

Results: The data is being reviewed and analysed. The data will be presented at the Meeting
CASE STUDY: SUCCESSFUL TREATMENT OF GENOTYPE 1 HEPATITIS C IN A MAN WITH ACTIVE PARANOID SCHIZOPHRENIA THROUGH A MULTIDISCIPLINARY APPROACH

Caine N1, Christopherson K1, Crowther C1, Grimwade K1, Mijatovic B1

1Bay of Plenty District Health Board

Introduction: JT, a 45 year old man with Genotype 1 Chronic Hepatitis C infection who had been previously declined treatment, at another institution, due to unstable mental health presented intent on eradicating his infection. He was on a long term Section 29 of Mental Health Act with a diagnosis of paranoid schizophrenia, foetal alcohol syndrome and on an Opioid substitution programme. He was socially isolated. His psychiatric condition was relatively stable on fortnightly intramuscular Risperidone, administered by the community psychiatric service.

Methods: He underwent meticulous assessment over a period of time via the Hepatitis Nurse-led clinic, his psychiatrist and the Opioid substitution service. Having gained his trust and established a good rapport, a multidisciplinary treatment plan was drawn up. Significant needle phobia led to weekly injections being administered at Hepatitis clinic or at home by the psychiatric nurse. In addition of managing the needle phobia this provided close, non-threatening monitoring. Excellent adherence to treatment drugs and blood test monitoring was observed. Frequent dose reductions of Pegylated Interferon (PEG) were required due to significant neutropaenia. A small increase in Risperidone occurred at week 3 and continued throughout treatment.

Results: A Rapid Virological Response at week 4 but due to a high pre-treatment viral load and significant dose reductions from week 6 onwards (only 55% total PEG dose achieved) he completed 48 weeks of treatment. At the end of treatment his viral load was undetectable and a Sustained Virological Response was achieved.

Conclusion: Psychiatric illness should not exclude a person from accessing hepatitis C treatment. As demonstrated here, pretreatment stability of the psychiatric condition and close MDT collaboration can lead to successful treatment outcomes. JT continues to make positive health care choices now possibly attributable to the sense of achievement resulting from successful completion of Hepatitis treatment.

SHARING THE LOAD - A SHARED CARE MODEL FOR HEPATITIS C TREATMENT

Authors: Fitzpatrick K1, Bramwell F1

1Western Region Health Centre

Introduction: Health Works, Western Region Health Centre, is a Primary Health Care service for people who inject drugs, past or present. Health Works has developed a model of shared care in regards to Hepatitis C treatment targeting individuals who would be unlikely to access, or find it difficult to complete, treatment at a tertiary level.

This model of shared care engages service users with a multidisciplinary team at Health Works comprised of GP, Community Health Nurses and Community Health Workers, and from there, specialists and nurse consultants at a tertiary level, as well as area mental health services. The majority of treatment appointments are conducted at Health Works in a
flexible manner, and treatment care is shared amongst the Health Works team. The model provides comprehensive treatment readiness as well as significant capacity for support during treatment, and post-treatment.

This presentation will outline the model via a number of case studies. The case studies will demonstrate the model’s real life capacity to engage and support individuals in ‘hard to reach’ populations such as individuals: from CALD communities; who are not generally well engaged with services; who experience a number of psychosocial as well as health issues; who are active drug users. Significantly, in addition to accessing Hepatitis C treatment, the case studies demonstrate that there are generally other health and psychosocial gains for individuals which move in train with accessing treatment.

**POSTER NUMBER: 8
PAPER NUMBER: 135**

**CHRONIC HEPATITIS B IN SECONDARY CARE: PATIENT OUTCOMES AT MIDDLEMORE HOSPITAL**

Tindle N, Gane E, Hornell J, Giersed S

1 Middlemore Hospital

**Aim:** To review outcomes of patients with chronic hepatitis B referred to secondary care at Middlemore Hospital by the New Zealand Hepatitis Foundation (NZHF).

**Method:** Details of patients referred to the Middlemore Hospital hepatitis clinic were obtained from the NZHF database. A retrospective review of the Middlemore Hospital clerical, clinical and laboratory records was undertaken for these patients.

**Results:** Between 2000 and 2008, 142 patients were referred, 94% because of a persistently raised liver enzymes, 6% because of an elevated AFP. More than two thirds (68%) were male. Pacific Island ethnicity was recorded in 42%, Maori 31%, Asian 18%, Other 4%. Mean age was 31 years. Fifty-three percent were eAg negative. At present 61 patients (43%) are attending follow-up in the clinic, 44 are currently on antiviral therapy (15 in clinical trials). Forty one patients (29%) were assessed but discharged from clinic (29 because of inactive HBV, 3 deceased, 3 transferred to another DHB, 7 HBeAg seroconverted). Forty patients (28%) are currently lost to follow-up, 18 of whom have been formally discharged because of serial non-attendance. Thirty percent of clinics (237/780) were not attended.

Of those attending clinic, 44 31 receiving antiviral therapy (PHARMAC-funded in 29 and study medication in 15) and two are presently being screened for trials. Of the remaining 98 patients, 15 do not meet criteria for treatment, 2

**Conclusion:** Less than half 50% of patients referred remain in secondary care to secondary care for management of chronic hepatitis B in follow up, with almost one third lost because of non-attendance. Many of these patients will develop preventable complications from chronic hepatitis B. Future strategies should target those at greatest risk for non-attendance.
MARGINALIZED OPIOID SUBSTITUTION TREATMENT (OST) CLIENTS ENGAGEMENT IN ONSITE HEPATITIS C VIRUS (HCV) CLINICS
Dosani T1, Taylor A1, Tenison F1, Haber P2,3 & Day CA2 on behalf of the ETHOS Study Group
1Graduate Medical Program, Sydney Medical Program, University of Sydney, Australia; 2GW Morrow Gastroenterology and Liver Centre, Royal Prince Alfred Hospital, Sydney, Australia; 3Discipline of Addiction Medicine, Central Clinical School, University of Sydney, Australia

Introduction: HCV treatment engagement remains low among OST clients with few treatment models reducing barriers to HCV care. This study examines marginalized OST clients’ engagement in HCV assessment at two sites participating in the ETHOS (Enhanced Treatment for Hepatitis C in Opioid Substitution Setting) study.

Methods: ETHOS is a prospective observational cohort study of OST clients with chronic HCV and a history of injecting drug use. Analyses were performed using preliminary baseline data from two private Sydney-based OST clinics. Marginalization was defined as: prior history of incarceration, mental health issues, low income, unstable housing, illicit drug injection in the last six months, or poor social functioning.

Results: At these two sites, 36 individuals were enrolled into the ETHOS study from April 2009-August 2010. All clients had one marker of marginalization; 53% had 1-3 markers and 47% had 4-6 markers. Marginalised (1-3 markers) and very marginalised (4-6 markers) were willing to undergo treatment (68% and 53%, respectively) and deemed suitable for treatment by a clinician (53% and 41%, respectively).

Being willing to undergo treatment and deemed suitable for treatment by a clinician respectively was reported by 44% and 50% of patients with a previous history of incarceration (n=16), 69% and 44% previously treated for a psychiatric illness (n=16), 50% (both groups) who scored in the severe range for stress, anxiety or depression on the DASS21 (n=12), 61% and 42% with a weekly income <$500 (n=31), 76% and 59% with low social functioning (n=17), 83% and 33% living in unstable housing (n=6), and 54% and 38% who had injected drugs in the past 6 months.

Conclusion: These preliminary data suggest that the ETHOS model may be effective for providing HCV services to marginalized OST clients. The ETHOS model therefore has the potential to improve treatment uptake and outcomes within this population.

CASE DEFINITIONS FOR RECENT HEPATITIS C VIRUS INFECTION: A SYSTEMATIC REVIEW
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Introduction: Case definitions for recent hepatitis C virus (HCV) infection vary considerably among studies. This systematic review aimed to characterize case definitions for recent HCV and explore the heterogeneity among studies.

Methods: A systematic literature search of MEDLINE, SCOPUS and ISI-Web-of-Knowledge was performed covering all studies of recent HCV cited between January-2000 and June-2011. The criteria used by each study to define recent HCV cases were extracted, structured and analysed.
Results: Overall, 195 articles were included, with 87% (n=169) providing a clear case definition for recent HCV. The most frequently used individual criteria for defining cases included HCV-antibody seroconversion (77%), alanine aminotransferase (ALT) elevation (68%) and HCV-RNA detection (63%). In studies using HCV-antibody seroconversion as a criterion, the window period between the last negative and the first positive antibody test varied widely across studies (four weeks to four years). A broad window period (>6 months) was used in 62% of epidemiology/surveillance studies compared to 20% of treatment studies and none of the diagnosis studies (P=0.003). Considerable diversity was also observed with respect to the ALT threshold used to characterise ALT elevations (two to 20 times the upper limit of normal (ULN)). A higher ALT threshold (≥10 ULN) was used in 89% of natural history studies and 62% of treatment studies compared to 41% of epidemiology/surveillance studies and 40% of diagnosis studies (P=0.003). Most studies (59%) used a conjunction of at least two criteria (range: 2-9) for case definitions. While epidemiology/surveillance studies used more sensitive case definitions, treatment studies, natural history studies and diagnosis studies used more specific case definitions.

Conclusion: Marked heterogeneity in case definitions for recent HCV was observed. Although single recent HCV case definition is not warranted, a degree of standardization within specific study categories would enable improved cross-study comparison and uniform evaluation of HCV prevention and management strategies.

POSTER NUMBER: 11
PAPER NUMBER: 210
INCREASING HEPATITIS C TREATMENT CAPACITY IN INDONESIA
Hill S1, Batey R1,2, Gani R2, Wijaya E3
1Australasian Society for HIV Medicine (ASHM), 2 Indonesian Liver Research Association (PPHI), 3Roche Indonesia

Introduction: The Indonesian Ministry of Health endorsed a national surveillance program for hepatitis C in 2008 and in 2010 committed to take part in action to prevent and control viral hepatitis. Indonesia has a hepatitis C prevalence rate of 1-2%1, 2, equating to approximately 3.5 million infections. With only 80 liver specialists available to diagnose, manage and treat hepatitis C in Indonesia, collaboration between the Indonesian Liver Research Association (PPHI) and the Australasian Society for HIV Medicine (ASHM), with funding provided by Roche Indonesia, aimed to increase the capacity of Internists and GPs to manage and treat hepatitis C. This has the potential to reduce the morbidity and mortality associated with the disease.

Methods: Two preceptorship programs in March 2011 and August 2011 averaged 25 attendees each. Pre-course and post-course surveys were conducted. The first training program ran over 3 days, the second over 2 days. Detailed program session outlines will be presented. Presentations and case studies were facilitated by ASHM clinical faculty representatives and PPHI specialists. Observations of HCV-related clinical procedures were incorporated into the program.

Results: Both preceptorship programs evaluated well. The majority of respondents rated their learning needs as having been fully met and they were more confident in treating and managing hepatitis C in their clinical setting. Follow-up with course participants is currently underway to explore how they are translating the training provided into practice. Outcome measures include ascertaining any increase in diagnosis, management and initiation of HCV antiviral therapy by course attendees following the training.
**Conclusion:** Through collaboration between Indonesian and Australian hepatitis C experts, a further 50 Internists and GPs have been up skilled in hepatitis C, thereby increasing the capacity to manage and treat hepatitis C in Indonesia. Results of the post training follow-up will be included in the discussions.

**References:**
2. Study of chronic hepatitis C prevalence in healthcare professionals 2009

**Disclosure of Interest Statement:** Funding for the program was provided by Roche Indonesia.

**POSTER NUMBER: 12**
**PAPER NUMBER: 215**

**ENHANCING HEPATITIS C MAINTENANCE TREATMENT IN NSW PRIMARY CARE SETTINGS**

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**Introduction:** Various models of care provide access to clinical care and treatment for hepatitis C in NSW. This paper explores recent enhancements to the HCV s100 maintenance prescriber program managed by ASHM and funded by NSW Ministry of Health. ASHM delivers prescriber training, processes accreditation and manages the ongoing program. This shared care model is designed for patients who, after specialist review, are considered suitable for primary care management. Eligible patients generally have less severe liver disease with no major co-morbidities. The number of accredited s100 community prescribers in NSW ranges between 25 to 30 each year.

**Methods:** Ongoing internal ASHM review processes identified barriers in the recruitment of new prescribers and the accreditation process, including the late lodgment and marking of HCV case study assessments. Feedback from prescribers was sought and indicated frustration with the number of specialist visits required under the earlier protocols and schedule of visits.

**Results:** Targeting recruitment of prescribers to high prevalence areas and the alcohol and other drug sector is being implemented. Changes to prescriber assessment explored include online case study lodgment using a decision making tree and short case based multiple choice questions. Following training, an ASHM Clinical Advisor will encourage early lodgment of case studies and offer clinical mentoring.

Shared care treatment protocols and algorithms were revised in 2012 and require specialist review at week 0 and specialist treatment initiation, with other reviews at time points to be determined on an individual basis to allow for greater flexibility in patient care. These new protocols will be presented and their implementation reviewed.

**Conclusion:** Changes in targeting potential prescribers, the HCV prescriber accreditation process itself, and the revised clinical protocols have the potential to enable more suitable patients to be treated in primary care.
DEDICATED HCC NURSE: IMPROVING CO-ORDINATION OF CARE AND PATIENT EDUCATION FOR HCC PATIENTS

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Introduction: An increase in the number of patients diagnosed with hepatocellular carcinoma (HCC) at a tertiary based hospital in New South Wales led to the formation of a HCC multi disciplinary team (MDT). The team of Staff Hepatologists, Oncologist, Radiologists, Surgeons, Palliative Care and Hepatology Nursing staff, Allied health, and visiting Hepatologists met weekly to review new and current HCC cases discussing treatment options and current best practice. Employment of a dedicated HCC nurse has improved co-ordination of the HCC meeting, coordination of proposed HCC treatments, referral pathways to allied health, communication between clinicians and patients, patient education and development of patient resources.

Methods: All patients for discussion at the HCC MDT meeting are referred to HCC nurse. Relevant medical history, blood pathology, histopathology results and radiology films are presented at the meeting. The dedicated HCC nurse coordinates patient care, HCC treatment, pathology and ongoing education. Individualised pre-treatment education sessions are completed during clinic hours, and post-procedure sessions are completed at the bedside.

Results: Since August 2011, 18 patients have received locoregional treatment for HCC. All patients and their family were provided with either pre- and post-Transarterial Chemoembolisation (TACE) education, pre- and post-Radiofrequency Ablation (RFA) education and pre- and post-Percutaneous Ethanol Injection education. Patients are supported and followed-up closely throughout treatment periods, with the HCC nurse acting as the patient's primary contact throughout their treatment journey. Specialised patient education resources have been developed for TACE, RFA and PEI procedures. A component of patient education focuses on patient recognition the signs and symptoms of liver decompensation and when to contact HCC nurse. Early recognition of decompensation by the patient and or their family aims to minimise hospital readmission.

In addition, the HCC nurse has improved education and support delivered to patients treated with Sorafenib and increased the number of referrals to allied health services.

Conclusion: The role of the HCC RN is pivotal in coordinating care of patients living with HCC improving individual health outcomes for HCC patients and ensuring smooth communication between all the members of the MDT.

Disclosure of Interest Statement: No industry contributions were received for the development of this clinic.
COMPARATIVE EVALUATION OF THREE REGIMENS FOR THE TREATMENT OF CHRONIC HEPATITIS B: TENOFOVIR, ENTECAVIR AND COMBINATION OF LAMIVUDINE AND ADEFOVIR

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Introduction: Chronic hepatitis B is a disease of concern due to its life threatening complications like cirrhosis, and hepatocellular carcinoma (HCC) in 20-40% of patients. There are about 400 million people affected worldwide with HBV and over 300,000 die every year from HBV related diseases. Oral antivirals like lamivudine, adefovir, entecavir and tenofovir are commonly used to treat chronic hepatitis B. In this study, we tried to evaluate the comparative efficacy of these drugs alone and in combination.

Materials and Methods: Chronic hepatitis B patients with HBV DNA more than 10^4 Copies/mL irrespective of their HBeAg status (n=60) were enrolled in a prospective study. 21, 20 and 19 patients were treated with lamivudine (100mg/day) plus adefovir (10mg/day) combination entecavir monotherapy (0.5mg/day) and tenofovir monotherapy (300mg/day) respectively and followed up for 24 weeks with their virological, serological and biochemical markers measured at 12 and 24 weeks.

Results: After 24 weeks of treatment, there was no significant difference between the three groups in suppressing HBV DNA to undetectable levels (p-value=0.058). The median decrease in HBV DNA levels from baseline was better with tenofovir and entecavir monotherapies than lamivudine and adefovir combination which was statistically significant (p-value=0.013). There was no significant difference between the three groups in HBsAg (p-value=0.334) and HBeAg (p-value=0.575) seroconversion and normalization of biochemical parameters.

Conclusion: Entecavir and tenofovir monotherapy were found to be more effective than lamivudine plus adefovir combination in reducing the HBV DNA levels. However, lamivudine plus adefovir combination was not too inferior especially when cost of treatment was taken into consideration and hence can be used to treat economically strained groups.

Disclosure of Interest Statement: There is no disclosure of interest.

IT REALLY WORKS: AN EXPLORATION OF EVOLVING MODELS OF NURSE COORDINATED CARE FOR THE TREATMENT OF HEPATITIS C IN PRIORITY POPULATIONS

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Introduction: It has been well documented that marginalized priority populations respond to user-friendly models of service provision. The Melbourne Health Integrated Hepatitis C Service (IHCS) has implemented an innovative model of service delivery for hepatitis C, linking tertiary specialist services with the community health sector. The service aims to improve access to management and treatment for priority populations in metropolitan Melbourne and rural Victoria, enabling a reduction in the morbidity and mortality of the infection as well as the personal and social impact of the disease.
**Methods:** The Melbourne Health IHCS was established in February 2011 and is facilitated by a Clinical Nurse Consultant (CNC). Nurse coordinated outreach clinics incorporate physician-initiated treatment and multidisciplinary support throughout the entire treatment process.

Service provision includes comprehensive pre-treatment client assessment, clinical work up and psychosocial care coordination. Support of the client in working towards treatment readiness is fundamental to the successful outcomes of treatment uptake and completion.

**Results:** An improvement in the uptake of management and treatment of hepatitis C by priority populations in the community setting has been demonstrated. Clients have reported satisfaction in how they themselves can also affect change in the systems being created.

**Conclusion:** Since its establishment, the Melbourne Health IHCS has demonstrated that recognition of and sensitivity to working with priority populations, who regularly experience stigma and discrimination around their health status and behavioural practices, can break down barriers to accessing and completing treatment. It is anticipated that over time, other community members will also be inspired to consider the challenge of treating and caring for priority populations living with hepatitis C, using a model that fosters shared trust and mutual respect.

**POSTER NUMBER: 16
PAPER NUMBER: 98**

CHARACTERISTIC OF HEPATITIS B PATIENTS IN CIPTO MANGUNKUSUMO NATIONAL GENERAL HOSPITAL INDONESIA

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**Introduction:** Indonesia is one from so many countries with high endemicity of hepatitis B infection. According to national data that prevalence of HBsAg positivity are 9.7% for men and 9.3% for women and anti HBc positivity until 34%. Characteristic of patients may differ from one health care to another. This study try to describe the characteristic of newly patients that diagnosed with chronic hepatitis B in Cipto Mangunkusumo Hospital.

**Methods:** Data were taken from medical records in 2011. The characteristics of newly patients that diagnosed with chronic hepatitis B in hepatology polyclinic Cipto Mangunkusumo National General Hospital Jakarta were compiled. Characteristics that were assessed consist of gender, age, HBeAg status, ALT, pretreatment viral load, liver biopsy, transient elastography measurement, anti virals that were given

**Results:** There were 142 patients, male 60.6 %, age 45.3 ± 12.7 years old, HBeAg positive 48.8%, median ALT (70.5 ± 1.3), pretreatment viral load (1.1 ± 0.5) x 10^4IU/ml. 89 out of 142 patients underwent transient elastography measurement (62.7%) with most of all in F4 (32.6%). Mean transient elastography value 18.1 ± 1.8, 57 out of 142 patients underwent liver biopsy (40.1%) with most of all in F2 (49.1%). 42 patients (29.6%) underwent both liver biopsy and transient elastography measurement, mismatch in 5 patients (11.9%) for F2-F3 range. Anti viral treatment 73.2% with telbivudine.

**Conclusion:** Most of patient came with significant fibrosis and HBeAg negativity.

Need more samples and further evaluation to validate this study.
PREDICTORS OF LIVER COMPLICATIONS IN CHILDHOOD-ACQUIRED HBV INFECTION IN NEW ZEALAND MAŌRI: RESULTS OF 27 YEAR LONGITUDINAL STUDY

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Background: Previous studies have demonstrated that elevated baseline HBV DNA levels are associated with increased risk of liver-related complications in Asians with vertically-transmitted chronic hepatitis B virus (HBV) infection, predominately Genotypes B and C. This current study evaluates the baseline predictors for hepatocellular carcinoma (HCC) and liver-related mortality in indigenous New Zealand Maōri with early horizontally acquired HBV, predominately Genotypes C and D.

Methods: In April 1984, the population of Kawerau township (n=7988) was screened for markers of HBV infection and all identified HBsAg positive individuals (n=572) entered into a long-term surveillance programme. In June 2011 after 27 years follow-up, liver-related mortality and HCC incidence have been determined in these 572 HBV carriers and compared to 1144 HBsAg negative controls from the same population, case-matched on age, gender and ethnicity. Baseline serum samples collected in 1984 on the 572 HBsAg positive carriers have been tested for HBeAg status, HBV DNA level (Roche Taqman v2.0TM real-time PCR assay) and HBsAg level (Abbott Architect HBsAg QT). Cox proportional hazards models were used to determine independent baseline patient and virologic predictors of outcome.

Results: After total 14,537 patient-year follow-up, 11 HBsAg positive patients had died from liver-related causes compared to none of the HBsAg negative controls (P<0.001). 13 HBsAg positive patients had developed HCC compared to none of the HBsAg negative controls (P<0.001). In the HBsAg positive patients, baseline predictors of both liver-related death and HCC included age at enrolment, Maōri ethnicity and baseline HBV DNA level. Baseline HBsAg level, HBeAg status and gender were not predictors of long-term outcome.

Conclusions: In a young Maōri population, early horizontally acquired HBV infection with HBV Genotype C and D is associated with increased liver-related morbidity and mortality. Baseline HBV DNA level, but not HBsAg level, was associated with increased risk for liver-related mortality and HCC.

USE OF FIBROSCAN IN ASSESSMENT OF CHRONIC HEPATITIS B VIRUS INFECTION

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Background: Current APASL guidelines for chronic hepatitis B virus (HBV) infection recommend fibroscan (or liver biopsy) only for specific groups of patients. The increasing availability of non-invasive fibroscans is leading to their use in the initial assessment of HBV carriers to exclude severe fibrosis/cirrhosis.
**Methods:** In 1984, 572 HBV carriers were identified from the Kawerau study. Carriers are being followed up 27 years later with blood tests and fibroscan. This has led to the development of modified algorithms for both active chronic hepatitis B (CHB) and hepatocellular carcinoma (HCC) based on Fibroscan results.

**Results:** 218 patients have been followed up to date. Only 60 (27.5%) have normal liver stiffness measurement (LSM)<5kPa. Based on the Yoneda cutoffs, 68 (31%) have stage 1 fibrosis (LSM<7.1kPa), 9 (4%) have stage 2 fibrosis (LSM 7.1-8kPa), 20 (9%) have stage 3 fibrosis (LSM 8-11kPa) and 18 (8.3%) have cirrhosis (LSM>11kPa). 43 patients (20%) had unsuccessful readings using the portable fibroscan with the medium probe. Median BMI and waist circumference for unsuccessful fibroscans were 38.6 (range 27.3-51.5) and 112 cm (range 80-134) respectively. Patients with successful fibroscans had a lower median BMI of 28.8 (range 18.1-55.7), p<0.0001, and a lower median waist circumference: 93.25 cm (range 61-136), p<0.0001.

All patients with LSM>8kPa were offered antiviral treatment if HBV DNA was >2000IU/mL, regardless of ALT level. Patients with LSM 7.1-8kPa were offered antiviral treatment if ALT and HBV DNA were elevated, Patients with LSM<7.1kPa or who do not meet any of the above criteria continued to have surveillance with 6 monthly LFT+AFP.

E-antigen positive patients with a persistently elevated ALT were offered treatment. All patients with LSM>8kPa were also offered 6 monthly ultrasound scans for HCC surveillance.

**Conclusions:** Fibroscan is useful in aiding earlier identification and treatment of those with severe fibrosis from CHB. Obesity and larger waist circumference are predictors of fibroscan failure with the medium probe.

**Disclosure statement:** All authors have nothing to disclose

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**POSTER NUMBER: 19**  
**PAPER NUMBER: 188**

**DEVELOPING AND IMPLEMENTING VIRAL HEPATITIS TRAINING FOR CLINICAL CARE TEAMS WORKING WITH ABORIGINAL CLIENTS**

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**Background and Need:** It is estimated 4% of Aboriginal people are living with the Hepatitis C Virus (HCV) in Australia compared with 1% of non-Aboriginal Australians. As HCV is curable, the rates of Aboriginal people living with HCV can be and should be much lower. Access to treatment has been identified as a barrier to Aboriginal people successfully completing HCV treatment. We endeavoured to train clinical care teams with Aboriginal clients with the aim of increasing access to HCV treatment by Aboriginal people.

**Description:** In collaboration with a state wide Government initiative we developed an interactive training program to meet the teaching and learning needs of clinical care teams with Aboriginal clients. The program combined education in clinical aspects of HCV and cultural appropriateness of working with Aboriginal clients with HCV. Following consultation and partnership with key stakeholders we developed a pilot training program. Following three pilots, evaluation reports were compiled using feedback from speakers, facilitators and participants.
Lessons Learned: Utilising key stakeholders from a range of areas including patient care, professional education and policy development was vital in developing sustainable training. We learned from the consultation to promote a holistic approach to care, provide varying case discussions and different modes of delivery. One hurdle we experienced was merging the clinical education and cultural awareness aspects into one training session.

Conclusions: To overcome this hurdle we ensured the clinical information was culturally appropriate throughout the presentations. We also developed numerous Case Studies to demonstrate various cultural considerations to be aware of when managing Aboriginal clients with HCV.

POSTER NUMBER: 20
PAPER NUMBER: 123

BARRIERS TO RECRUITMENT OF MINORITY POPULATIONS INTO CLINICAL TRIALS FOR VIRAL HEPATITIS TREATMENT

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Introduction: The importance of enrolment into clinical trials in New Zealand is vital to ensure our population is adequately represented in the development of pharmaceuticals; clinical trials require a cross-section of participants to ensure the data needed to guarantee transference of findings. The potential for low numbers of minority participants to be represented within trials may mean data obtained cannot be generalised and key differences may be missed relating to ethnic and racial minorities. The New Zealand population consists of many minority groups such as Maori, Asian, and Pacific Islanders and it is essential we ensure they are adequately represented in clinical trials.

The goal of this presentation is to identify the barriers to recruitment of minority populations into treatment trials for viral hepatitis.

Methods: In this phenomenonologic study, firstly a comprehensive literature review was conducted on this topic. Then, Liver Unit research staff were interviewed regarding their local experiences gained from managing study participants from Maori, Asian and Pacific Island backgrounds.

Results: The literature reviewed identified the most represented population in treatment trials is married, middle class, highly educated, Caucasian males. Barriers to recruiting in all minority populations include: mistrust or fear of the research process, unwillingness to change from their regular doctor to the research team for care, direct and indirect costs of participation (i.e. travel, time off work and childcare), language and literacy difficulties, unwillingness to lose control of their care, as well as cultural concerns. Local experiences agree with these findings, especially related to the direct and indirect costs associated with participation in the trial and the commitment required.

Conclusion: By identifying the barriers for participation in clinical trials for minority populations, emphasis can be placed on addressing the issues thereby increasing their enrolment. Greater representation of minority patients will ensure data is of good quality and reflective of the population in New Zealand.
**POSTER NUMBER: 21**
**PAPER NUMBER: 45**

**HDV TESTING IN VICTORIA, AUSTRALIA 2000-2009: INSIGHTS INTO EPIDEMIOLOGY AND CLINICAL MANAGEMENT**

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**Introduction:** Hepatitis D virus (HDV) only infects concurrently with hepatitis B virus (HBV), and is known to alter disease course, treatment options and likelihood of adverse outcomes in people living with chronic HBV. The epidemiology and clinical practices surrounding HDV in Australia are poorly understood, with no robust estimates of burden of disease or the extent of opportunistic testing.

**Methods:** Laboratory records of all HDV serological and RT-PCR testing in the state of Victoria were obtained for the period 2000-2009. Estimates of the number of cases per year were derived and compared with health department surveillance data, and records were analysed to evaluate testing patterns and follow-up for individual patients.

**Results:** 2,604 HDV serological tests were conducted on 2,327 individual patients residing in Victoria between 2000-2009; of these, 110 patients (4.7%) tested positive for HDV antibody or antigen, with both the number of patients positive and the number of tests steadily increasing between 2005 and 2009.

Of those patients who tested antibody positive, less than half (44 patients, 40.0%) were subsequently evaluated by qualitative HDV PCR, and the majority of those who were (29 patients, 70.5%) tested HDV RNA positive.

Surveillance data show reasonable concordance with laboratory diagnoses, with 88 notifications for HDV made to the Victorian Department of Health in this period (80% of positive test results).

**Conclusion:** As an estimate of burden of disease, the proportion of positive tests observed (4.7%) corresponds strongly with current estimates of 5% HDV prevalence in those with HBV. Increased testing for HDV in Victoria over the last decade has resulted in an escalating number of HDV diagnoses and highlights the potential for undiagnosed HDV infection in those living with chronic hepatitis B, however gaps also remain in the appropriate testing and follow-up of patients known to be infected.

**Disclosure of Interest Statement:** The authors declare they have no conflicts of interest.

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**POSTER NUMBER: 22**
**PAPER NUMBER: 136**

**MANAGEMENT OF PATIENTS IN CLINICAL TRIALS**

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There is a marked difference in the degree of patient care between the hospital clinic setting and specialized clinical trials. This is largely due to the intensive monitoring guidelines provided by the sponsor, which demands for a heightened level of interaction between health professionals and the patient. Accordingly, clinical trials deliver a greater level of care, which, in addition to providing early access to novel therapies with increased efficacy, results in better treatment outcomes for the patient.
The purpose built units at ACS and CCST enable dedicated follow-up of patients which allows for increased rates of adherence which consequently increases the rate of response. For example, in a recent study cure rates achieved at ACS where patients were followed weekly throughout the treatment period, were almost double that achieved in a similar patient population treated at an outpatient hospital setting in the US, where follow-up was less frequent. This difference in outcome was largely explained by patient withdrawal and loss to follow-up in the hospital clinic.

Further benefits include: A holistic approach to patient management during the study; a core team of specialized research staff that offer continuity and support for patients across a long period of time; being able to proactively identify the need for prophylactic medication prior to starting treatment; and greater interaction with the patient, thereby improving Doctor / Patient rapport and ultimately patient satisfaction.

Through the use of case studies, we will exemplify instances where this dynamic relationship has proven to be successful, and speculate on what approaches could be incorporated into the public healthcare system.

POSTER NUMBER: 23
PAPER NUMBER: 137

THE ADVANTAGES OF EARLY PHASE CLINICAL TRIALS IN NEW ZEALAND: A WIDER PERSPECTIVE ON THE COMMUNITY, BUSINESS, AND THE NEW ZEALAND ECONOMY

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Over the past few years, there has been a rapid increase in the number of Phase 1 clinical trials conducted in New Zealand. Sister units, ACS and CCST are two private clinical research units offering specialised services in Phase 1 and 2 studies. Our experience to date has shown these trials offer numerous benefits to the patient community, local businesses and the New Zealand economy.

It is not well recognised amongst healthcare providers and their patients that early stage trials can offer access to novel medicines that have greater efficacy compared to standard of care (SOC). Raising awareness amongst these groups serves to pique interest in this industry, which in turn will increase participation rates and ultimately propel New Zealand as a global competitor in this market. This will serve to ameliorate the presence of international pharmaceutical companies and reap economic rewards, such as attracting more late phase studies (phase 3 and 4) in hospitals throughout New Zealand. In addition, by referring patients for treatment into early phase trials, patient management is deferred to a fully-funded private organisation. As a result, the burden on the healthcare system could be significantly reduced. Other indirect benefits include increased education for hospital specialists working as Investigators at these sites, as well as career opportunities for science graduates.

Over the last 5 years, ACS and CCST have been global leaders for the treatment of Hepatitis C. For example, the Inform-1 study, conducted primarily in New Zealand, single handedly changed the FDA’s approach to the future development of Hepatitis C drugs. More recently, we have exclusively coordinated the Electron Study, the first interferon-free regime, which has demonstrated a 100% cure rate in Genotype 2/3 treatment naïve patients.
Furthermore, through meetings and conventions, ACS and CCST provide regular updates about novel therapies that are being developed for the treatment of Hepatitis C to hospital staff around New Zealand. This serves to increase knowledge and awareness within the Hepatitis C community.

We will endeavour to elaborate on the advantages of early phase trials to New Zealand, as outlined above.

**POSTER NUMBER: 24**
**PAPER NUMBER: 233**

**PANCREATIC INSUFFICIENCY IN PATIENTS WITH HIV: WHAT IS THE ROLE OF HCV INFECTION AND TREATMENT?**

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**Introduction:** Pancreatic insufficiency is a known and treatable cause of chronic diarrhoea in patients with HIV, but the aetiology of pancreatic damage remains poorly defined. Hepatitis C virus (HCV) infection is known to directly infect extra-hepatic tissue and cause a number of extra-hepatic manifestations including cryoglobulinaemia and insulin resistance. Interferon-alpha has also been demonstrated to induce autoantibodies including antibodies to pancreatic antigens. We performed a retrospective study to investigate potential associations between pancreatic insufficiency and HCV infection among HIV positive patients.

**Methods:** A retrospective analysis of 233 HIV positive patients for whom faecal elastase measurement was available was performed to investigate potential associations with HCV serology, HCV RNA status, exposure to HCV antiviral treatment, HIV infection and treatment data and alcohol misuse. A univariate regression was performed to identify any association.

**Results:** Of 233 patients, 104 (45%) had evidence of pancreatic exocrine insufficiency (faecal elastase <200mcg/g). Patients with positive HCV antibody (N=31) were found to be significantly more likely to have pancreatic insufficiency than HCV negative patients (OR 3.01, 95% CI 1.35-6.72, P=0.007). There was no association with detectable HCV viraemia (N=13; P=0.22); however, a significant association with current or previous HCV treatment (N=18) was found (OR 7.08, 95% CI 1.99-25.2, P=0.003). We also found a positive association of pancreatic insufficiency with alcohol (OR 3.65 (CI 1.46-9.11, P=0.006).

**Conclusion:** In patients with HIV, HCV antiviral treatment and HCV antibody positivity are associated with pancreatic damage. HIV positive patients who are HCV antibody positive, and in particular if they have received HCV antiviral treatment, who present with chronic diarrhoea should have their pancreatic function assessed with faecal elastase testing.

**Disclosure of Interest Statement:** The authors have nothing to disclose.
EXTENDED ANTIVIRAL THERAPY FOR HCV GENOTYPE 3 WHO DID NOT ACHIEVE RVR

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Background: The AW Morrow Gastroenterology and Liver Centre provides services to patients requiring management and treatment of Chronic Hepatitis C (HCV). While overall response rates to 24 weeks of pegylated interferon plus ribavirin in GT3 are high, response rates have been reported to be reduced in patients who fail to achieve RVR. It has been suggested that extension of treatment to 48 weeks may improve response rates. The aim of this study was to examine treatment outcomes of GT3 patients who failed to achieve RVR and had treatment duration extended.

Methods: This study retrospectively audited records of GT3 patients who undertook AVT during 2008 – 2010 to examine rates of rapid virological response (RVR), sustained virological response (SVR) and treatment duration. In this period, extended therapy (up to 48 weeks AVT) was considered and offered to patients who did not attain viral clearance by treatment week 4 and also to patients who were cirrhotic or post liver transplantation.

Results: 88 GT3 patients were treated in this period. 62/88 (70%) achieved SVR. RVR was highly predictive of SVR with 46/55 (88%) of patients achieving RVR attaining SVR, and 16/33 (48%) of patients without RVR attaining SVR (p=0.001). In patients without RVR, treatment was extended to 36-48 weeks in 17, and stopped at 24 weeks in 16. No significant improvement in SVR (53% vs 44%) was observed by extending therapy.

Conclusion: A significantly higher SVR rate was observed in GT3 patients who achieved RVR. Patients who did not achieve RVR had lower SVR overall. In this small study, extension of antiviral treatment in GT3 patients who failed to achieve RVR did not increase the chance of attaining SVR.
Methods: The Enhanced Treatment of Hepatitis C in Opiate Substitution Settings (ETHOS) Cohort is supported by an NHMRC Partnership Grant to evaluate a new model of chronic HCV assessment and treatment delivery in opiate substitution treatment (OST) clinics in New South Wales, Australia. The partnership model integrates key state government, community and advocacy groups, peer support and research organizations into the design and evaluation of the health care delivery, patient support and clinical management strategies. The ETHOS cohort is examining HCV treatment uptake and outcomes, with other major research aspects including qualitative evaluation and cost-effectiveness of the model of care.

Results: Nine OST clinics have participated in ETHOS, including a mixture of rural, regional and metropolitan sites. A majority of these clinics are public sites (n=8), three of which are integrated primary health care or community-based services. Peer support services have been integrated into two of the study sites. Three hundred and ninety participants have been enrolled into the ETHOS cohort between February 2009 and April 2012. The mean age is 40 years, 71% are male, 83% Caucasian, 49% have completed 13 years of schooling, 82% receive temporary benefits or pension, 16% do not reside in stable housing and only 8% have full-time employment. To date, 69 have commenced HCV treatment.

Conclusion: The ETHOS Cohort is an innovative partnership-based evaluation of HCV assessment, treatment and care for PWID. Ongoing research will determine factors associated with HCV treatment uptake and outcomes, including reinfection, and the specific impact of peer-based support for HCV care.

POSTER NUMBER: 27
PAPER NUMBER: 189

ACTIVATE – A COLLABORATIVE TRIAL IN INJECTORS OF INDIVIDUALIZED TREATMENT FOR GENOTYPE 2/3; DEVELOPMENT OF AN INTERNATIONAL NETWORK

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Introduction: Injection drug use is the predominant mode of HCV transmission in most developed countries. Barriers to HCV treatment include lack of information or knowledge about treatment, absence of symptoms, and perceived side effects of treatment. Most previous studies of HCV treatment outcomes among people who inject drugs (PWID) have included very small study populations, or combined former and current PWID. ACTIVATE is a pilot study among PWID designed to i) evaluate the safety and efficacy of individualized PEG-IFN alfa-2b/RBV treatment with chronic HCV genotypes 2 or 3, and ii) establish an international HCV clinical research network to evaluate HCV therapy in this population.

Methods: A total of 20 sites were identified: Australia (n=5), Canada (n=3), United Kingdom (n=2), Germany (n=2), Belgium (n=2), France (n=1), Switzerland (n=3), Norway (n=1), and Finland (n=1).

Major study inclusion criteria were chronic HCV genotype 2/3 and reported injecting drug use within 12 weeks of screening. The primary clinical objective is to evaluate treatment safety and outcomes following response-guided directly observed PEG-IFN alfa-2b (1.5 μg/kg weekly, to a maximum of 150 μg/week) in combination with self-administered ribavirin (800-1400 milligrams daily): 12 weeks in participants with undetectable HCV RNA at week 4, and for 24 weeks in participants with detectable HCV RNA at week 4 of therapy. The primary endpoint measurement of treatment efficacy will be SVR24.
Results: Key tasks have included i) development of protocol and key study tools, ii) coordination of Ethics Committee submissions, iii) coordination of Regulatory submissions, iv) establishment of a DSMB, and v) development of database and electronic case report form (eCRF). Recruitment will commence in May 2012. Data will be presented on recruitment and expected study timelines.

Conclusion: Establishment of the ACTIVATE study network should provide the foundation for therapeutic evaluation within a population with limited prior treatment-related research, including universal exclusion from phase II/III therapeutic development protocols. Key challenges to date have included diverse regulatory requirements, and heterogeneity across sites in regard to clinical research experience.

Disclosure of Interest Statement: The ACTIVATE Study is supported by a grant from Merck Sharpe and Dome.

POSTER NUMBER: 28
PAPER NUMBER: 238
USE OF FIBROSCAN IN ASSESSMENT OF CHRONIC HEPATITIS B INFECTION. PROPOSED ALGORITHMS
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Current APASL guidelines for chronic hepatitis B virus (HBV) infection recommend fibroscan (or liver biopsy) only for specific groups of patients. However, the increasing availability of non-invasive fibroscans is leading to their use in the initial assessment of HBV carriers to exclude severe fibrosis/cirrhosis.

A follow up study of HBV carriers detected in Kawerau 27 years previously is using fibroscan as part of the assessment. This has led to the development of modified algorithms which include fibroscan results.

The authors will present these algorithms for discussion.

POSTER NUMBER: 29
PAPER NUMBER: 202
HORMONES, HYPOGONADISM AND HEPATITIS C RELATED HEALTH AMONG WOMEN WHO USE OPIOIDS: A PILOT STUDY
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2National Centre for Epidemiology and Population Health
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Introduction: Despite research suggesting that pre-menopausal oestrogen levels protect the liver in women with hepatitis C, little is known about possible interactions between opioids, hormone levels and hepatitis C. Over several decades data have been collected on hypogonadism in males including evidence of reduced sexual function in males who use opioids and among men living with hepatitis C. Far fewer studies have been conducted with women and are generally focussed on the effects of opioids prescribed for pain relief.

Methods: Conducted in Canberra during 2011 - 2012 this pilot project assessed the impact of long-term (2 or more years) opioid use on oestrogen levels of women aged 45 years or younger living with hepatitis C. We hypothesised that by comparing participants’ hormone levels with laboratory standard ranges we would detect
hormone disruption, including suggestions of early menopause. Blood samples were taken two weeks apart. Women received copies of their pathology results. Other data collection included self-reported health impacts of potential low oestrogen levels.

**Results:** Cases of potential peri-menopause were found and we discuss the complexity of potential biological and social confounders. Venipuncture and other aspects of this research appear to be acceptable for this population group. Positive feedback from participants suggests that they were interested in their pathology readings and in some cases were motivated to seek medical advice to improve their health.

**Conclusion:** Given that women with hepatitis C experience different effects of hormone disruption than men, and there is an association between oestrogen and slower liver disease progression in women, this is an important area of research. Further research is needed to determine the prevalence of low oestrogen in women who use opioids and the potential negative impact of low oestrogen on liver disease progression. The acceptibility of this research for participants in the pilot study was high and a larger scale project would be feasible.

**Disclosure of Interest Statement:** None

**POSTER NUMBER: 30**
**PAPER NUMBER: 18**

**METHADONE MAINTENANCE TREATMENT IN ISRAEL REDUCE RISK FOR HEPATITIS C INCIDENCE AMONG OPIATE ADDICTS**

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**Introduction:** Hepatitis C (HCV) virus is highly prevalent among drug addicts, mostly due to their high frequency of injecting drugs. Methadone maintenance treatment (MMT) for opiate addicts helps to lower the incidence of HCV infection. Our aim was to evaluate the incidence and risk factors for seroconversion to HCV among opiate addicts since admission to MMT.

**Methods:** Of all 761 patients admitted to MMT clinic between June/1993 and Dec/2011, 312 were HCV sera-negative on admission. Of them, 228 patients with ≥2 test for HCV were included. Number of seroconversion per years of follow-up was compared by relevant variables (drugs in urine, sociodemographic).

**Results:** The incidence of HCV seroconversion in MMT was 1.9 per 100 person years (py)(30 of the 228, 1550.5py). Seroconversion rate was significantly higher among 117 patients who tested positive to benzodiazepine (3.1/100py vs. 0.9/100py, p=0.004), among 92 patients who were ever drug injected (3.7/100py vs. 0.8/100py, p<0.0005), among 42 patients who left MMT and readmitted (4.1/100py vs. 1.4/100py, p=0.007) and among 21 non Jew minorities (5.3/100py vs. 1.7/100py, p=0.04) with a trend of higher among 65 females (2.8/100py vs. 1.6/100py, p=0.09) and of being positive hepatitis B Antigen (n=8) (10.5/100py vs. 1.8/100py, p=0.1). No differences were found by opiate usage, education, admission age, other drug abuse on admission and after one year, and by methadone dose (below or above 100mg/d) after one year. Variables that predicted seroconversion in Cox model multivariate analyses were ever drug injection HR=4.3 (95%CI 1.9-9.7), benzodiazepine abuse on admission HR=3.4 (95% CI 1.5-7.6), readmitted MMT HR=2.8 (95%CI 1.3-5.7) and minorities HR=2.5 (95% CI 1.0-6.3).
**Conclusion:** Seroconversion incidence in MMT in Israel is low. It occurs more among readmit group when they were throw/dropped/arrested, among ever drug injected, benzodiazepine abuser and minorities. Specific intervention to eliminate seroconversion is needed to these high risk groups.

**Disclosure of Interest Statement:** The work was fund by the Adelson family Foundation. The Authors have no conflict of interest

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**POSTER NUMBER: 31**  
**PAPER NUMBER: 149**  
**PATIENT ADHERENCE TO LACTULOSE TO MINIMISE THE RISK OF HEPATIC ENCEPHALOPATHY**

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**Introduction:** Hepatic encephalopathy (HE), a metabolically induced functional disturbance of the brain, is a frequent complication of advanced chronic liver disease. Lactulose has been shown to reduce the risk of an episode of encephalopathy and potentially reverse encephalopathy. Lactulose is a laxative used bind ammonia in the setting of liver dysfunction. Adherence to lactulose is imperative to optimise individual health. This study aims to identify patient knowledge, understanding of prescribed regime, and patterns of adherence. Study findings will be used to develop patient resources, education and strategies to improve patient adherence.

**Methods:** All patients attending a tertiary based hospital in New South Wales were invited to participate. Patients were asked to read an approved information sheet and complete a short questionnaire. De identified data were entered into an SPSS database and analysed.

**Results:** Study participants were predominantly male (70%, n=7), Australian born (60%, n=6), reporting a mean age 59 years old (SD, 9yrs) and a current inpatient (70%, n=7). Close to 50% of patients reported to have missed lactulose in the last 3 days, and in the last week. Reasons given for missed doses included forgetting, not feeling well, taste, no supply of lactulose, or too many bowel motions. Lactulose was reported to be taken as one of numerous medications (range 1-6), and had been prescribed for a mean 4.2 years (S.D. 4 years). Patients had limited knowledge with only 30% reporting that lactulose would remove toxins from the body. Most patients reported that they did not know why they were taking lactulose (n=4), or thought lactulose was prescribed for constipation (n=2).

**Conclusion:** Half the patient’s surveyed reported non adherence to lactulose. Patient knowledge of the benefits and reasons to take taking lactulose is limited. There is need for further studies and evidence based strategies to increase adherence to treatment.

**Disclosure of Interest Statement:** There is no conflict of interest
INTRODUCTION: The Australasian Hepatology Association (AHA) was formed in 2002. The multi-disciplinary group of hepatology nurses and allied health professionals are individually dedicated to ensuring excellence in the care and management of people affected by liver disease.

METHODS: Key hepatology nurses across Australia joined together to form the AHA. Board members meet regularly via face to face meetings, teleconferences or emails. Sub committees meet via teleconference and emails. Domains of work and strategic plans have been developed in consultation with all members and key stakeholders.

RESULTS: During the past 10 years the AHA has established itself as the peak nursing association for hepatology nurses in Australasia, and has achieved numerous outcomes. The board of management is elected by the membership for a two year term. Sub committees have enabled a greater distribution of workload increasing output by the AHA. The AHA works collaboratively with organisations and key stakeholders including ASHM, ALA, GENCA and hepatitis Australia. The AHA has contributed to policy & planning forums and conducts education sessions at national and international conferences. In consultation with members, 2 strategic plans have been developed, implemented and evaluated. A third strategy is under review. The AHA developed competency standards for Hepatology nurses, and have an active website. Consensus guidelines for nursing management of patients living with HCV, HBV, ALD and HCC are currently under stakeholder review. The tenth annual AHA 2 day national summit will run in June providing a professional development forum, networking opportunity and a forum of working groups to finalise current projects.

CONCLUSION: The AHA has achieved great outcomes and progress in a relatively short period of time. Continued growth and development will ensure that Hepatology nurses and allied health professionals are represented within the speciality area of Hepatology.

DISCLOSURE OF INTEREST STATEMENT: The AHA have received funding to support educational activities from Merck Sharp & Dolme, former company Schering Plough PTY LTD, and Roche products PTY LTD.

INTRODUCTION: The number of hepatology nurses in NSW has grown rapidly. Hepatology nursing is constantly evolving in response to the growing number of people needing treatment and the complexity of some of their treatments, the increased number of people with cirrhosis and the key role that nurses play in the model of care. In order to provide optimal care hepatology nurses have a responsibility to keep up to date in their knowledge and learn new clinical practice skills. Currently there is a limited number of hepatology education programs which are free and open to all nurses within NSW.
Methods: We began development of first Masterclass in May 2011, guided by the learning needs of our colleagues. We developed a programme flyer and promoted the Masterclass through the Australasian Society for HIV Medicine (ASHM), Hepatitis NSW and our local networks. Speakers were all experts in their field and came from either Royal Prince Alfred Hospital (RPAH) or Liverpool Hospital. Funding from received from the pharmaceutical industry. The Masterclass was evaluated through paper and electronic self-directed evaluations. We developed the second Masterclass based on the evaluation findings of the first Masterclass and the changes in treatment of hepatitis C. The second Masterclass is planned for May 14.

Results: The first Masterclass was well attended with nurses coming from a wide range of specialties that managed people with hepatitis C or B. There was also a strong interest from other health care workers including medical specialists. Over 50 people attended and the evaluation was very positive. There was strong support for further education. The full findings from both Masterclasses will be presented at the Conference.

Conclusion: Given the evolving hepatitis epidemic and the significant role nurses play there is growing need to ensure hepatology nurses have access to high quality education. A Masterclass can also assist in development of partnerships and networking.

POSTER NUMBER: 34
PAPER NUMBER: 152

USE OF TRADITIONAL CHINESE MEDICINES IN CHRONIC HEPATITIS B: RESULTS FROM A SINGLE-CENTRE PATIENT SURVEY IN AUSTRALIA

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Introduction: Ethnicity and cultural beliefs may influence patients’ behaviour and attitudes to conventional antiviral treatment. The majority of patients with chronic hepatitis B (CHB) infection in Australia are of Asian descent and the use of traditional Chinese medicines (TCMs) in this setting is particularly relevant due to the potential risk of hepatotoxicity, drug interactions, attitude towards conventional CHB medication or the undeclared addition of pharmaceutical agents. We therefore undertook a survey at an Australian centre predominantly treating Asian patients.

Methods: Patients with CHB attending the liver clinic from July 2011–March 2012 were invited to complete the survey. The survey comprised 26 multiple-choice questions, divided into two parts (general questions on demographics and CHB diagnosis, and TCM-specific questions). Responses were anonymous and all patients provided written informed consent prior to participation.

Results: Preliminary results from 44 patients found that almost all patients (98%) were born outside of Australia. Vietnamese (48%) and Chinese (32%) were the most common ethnicities. Half were aged 45–59 years. Most (64%) were diagnosed in Australia; 68% had been diagnosed for >10 years. Overall, 59% regarded TCMs as medication and over 30% had used various preparations of TCMs, however only 19% of respondents had been asked about TCM use by their doctor. Most (69%) obtained TCMs from a traditional Chinese medical practitioner and considered them to be medication, with the most common reasons for use being ‘told to’ and ‘for general health’. An unexpected outcome was the reluctance of many CHB patients to participate in the survey.
Conclusion: Approximately one third of CHB patients surveyed used TCMs, however the majority had not been asked about using TCMs by their doctor. These preliminary results suggest that there needs to be a greater awareness of CHB patients’ exposure and use of TCMs.

Disclosure of Interest Statement: J Richmond and S Bell have received funding support from Gilead Sciences Pty Ltd. A Elsome is a full-time employee of Gilead Sciences Pty Ltd. Editorial assistance was provided by Zest Healthcare Communications and funded by Gilead Sciences Pty Ltd.

POSTER NUMBER: 35
PAPER NUMBER: 166
SYSTEMS FOR ENHANCING VIRAL HEPATITIS CLINICAL RESEARCH
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Background: The field of hepatitis C clinical research has expanded rapidly and increased in complexity in recent years. The efficient management of complex clinical research and laboratory data is crucial. The Viral Hepatitis Clinical Research Program (VHCRP) at the Kirby Institute is aiming to electronically integrate the clinical and research laboratory data to facilitate collaboration and increase viral hepatitis research productivity.

Methods: Clinical data from VHCRP clinical research studies is collected via OpenClinica, an open-source web-based software for Electronic Data Capture (EDC). OpenClinica allows easy creation and management of study databases by allowing users to create a library of standard CRFs. Its functionality includes data submission, validation, data management, monitoring, bulk data import/export, auditing, and reporting. VHCRP studies using OpenClinica-based EDC are ETHOS, ATAHC II, and ACTIVATE.

Laboratory research data generated using samples collected during the clinical studies and clinical data from completed studies such as CHARIOT and ATAHC are stored in LabKey, a web-based, open-access database. Labkey is a platform to share, organise, integrate and analyse a broad range of biomedical data. It can store a large and varied range of complex laboratory data sets such as proteomics, bulk sequencing and HLA. Labkey also accesses information from the large sample repository (HepBank) and connects sample information to clinical data to enable sample selection based on clinical factors. Currently HepBank contains 11406 Plasma, 4197 Serum and 1718 PBMC samples.

Results: Linking clinical data with multiple laboratory research data sets allows the examination of a wide range of biomedical and clinical parameters on viral hepatitis outcomes across a total study population or for individual patients.

Conclusion: Integration of clinical and laboratory-based data management systems and sample study repositories is allowing more efficient clinical research management. Open-source programs are an affordable means to capture and link data from bench to bedside.
POSTER NUMBER: 36  
PAPER NUMBER: 58  
HEALTH AND WELLBEING IN TASMANIAN PRISONERS WITH AND WITHOUT HEPATITIS C ANTIBODIES
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2. University of Tasmania

Introduction: Australasian prisoners suffer more chronic physical and mental health problems than do their community based counterparts. Fifty five percent of Australian prisoners have a history of injecting drugs and this behaviour is strongly associated with Hepatitis C antibodies. In Tasmania approximately thirty percent of prison inmates are Hepatitis C antibody positive.

Methods: The aim of this study is to use the Short Form 36 questionnaire plus some supplementary questions to assess the health and well-being of Tasmanian prisoners with and without Hepatitis C antibodies. Additionally, those prisoners who have undergone Hepatitis C eradication treatment in Tasmanian prisons will have changes in their health and wellbeing monitored and assessed at various times by the same question sets. This study will raise awareness amongst prisoners and the community with regard to Hepatitis C in prison and to the early results of Hepatitis C treatment in Tasmanian prisons.

Results: We report the results of 250 prisoners surveyed. The mental component score of the SF 36 improves significantly over the first six months of imprisonment. Hepatitis C cases cluster as does injecting drug use behaviour in maximum security environments. For hepatitis C treatment across all genotypes including type 1 we report a success rate [SVR] of >90% using standard double therapy. The treatment program produces significant health benefits in terms of body weight, reduced injecting drug use and the experience of wellbeing.

Conclusion: Hepatitis C in prison is strongly associated with current injecting behaviour. Treatment programs for hepatitis C are successful in terms of outcome rates and improvement in health and lifestyle measures when applied in the prison environment.

POSTER NUMBER: 37  
PAPER NUMBER: 228  
ESTABLISHING LIVER CLINICS LINKING DRUG HEALTH AND HOSPITAL-BASED SERVICES
Tenison F1, Tynan M2, Schramko J3, Pritchard Jones J4

Introduction: In 2007, Concord Hospital Liver Services and area Hepatitis services commenced two ½ day tertiary outreach Liver Clinics in Canterbury Hospital and in the Canterbury Community Health Centre Drug Health Service (DHS).

The Canterbury Hospital and community health centre provide services for a culturally diverse population of 220,000. People of non-English speaking background comprise 66%. The clinics were established to increase access to care and treatment of viral hepatitis infections for DHS clients and the local community.

Methods: A weekly 3-hour Clinical Nurse Consultant (CNC) liver clinic was established in partnership with the Canterbury DHS. Referrals are made through medical, nursing and other multidisciplinary team members. Clients can also self-refer. Information
provision, initial assessment and testing are offered and hepatitis B vaccination is available. If appropriate, referrals to the Canterbury Hospital Liver Clinic are made from DHS.

The second clinic located in the Canterbury Outpatient Department was established with two gastroenterologists from Concord Hospital and CNC support. On-site access to dietician and psychiatric support was negotiated and access to a portable Fibroscan was planned for mid 2012.

The CNC was positioned to provide specialist nursing support and linkage between the clinics and where appropriate, to facilitate DHS client referrals to the hospital-based Liver clinic. Activity data was collected by the pharmacy and the CNC.

**Results:** Since 2007, 116 individuals have been treated for HCV (n=62) and HBV (n=54) infections. Many have been referred from DHS who reported that previously, few clients were accessing tertiary liver services.

Our data shows referrals from local GP’s have increased, particularly for HBV, reflecting the known high prevalence of HBV in the area.

**Conclusion:** Linked DSH and hospital-based clinics have resulted in increased access to tertiary liver services for DHS clients and local communities. Referrals have increased particularly for hepatitis B, which is likely to impact on future service provision.

**Disclosure of Interest Statement:** No disclosure if interest is applicable

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**POSTER NUMBER: 38**

**PAPER NUMBER: 61**

**THE REDUCED PREDICTIVE VALUE OF INTERLEUKIN 28B GENE POLYMORPHISMS IN A COHORT OF PATIENTS WITH THYROID DISEASE DEVELOPED DURING ANTIVIRAL THERAPY FOR CHRONIC HEPATITIS C: A PRELIMINARY STUDY**

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**Introduction:** Single nucleotide polymorphism in the interleukin28B (IL28B) gene was shown to be associated with a significant increase in response to interferon-α and ribavirin treatment in patients with chronic hepatitis C. Similarly, thyroid disease (TD) occurring during treatment confer an improved sustained virologic response (SVR). The aim of this study was to determine the role of IL28B genotypes in a cohort of hepatitis C patients who develop TD during treatment and its relationship to SVR.

**Methods:** IL28B gene profiles including rs12979860, rs12980275 and rs 8099917 and their genotypes were determined in a cohort of 23 hepatitis C patients who developed TD during treatment and their relationship to SVR.

**Results:** Out of 23 studies cases, 19 has one or more favourable genotypes, of which 15 (78.9%) achieved SVR. Eleven has all 3 unfavourable genotypes and yet achieved 72.7% SVR. The presence of more than 1 favourable genotype only correctly predicts SVR vs non-SVR in ~50% of cases, i.e. by chance.

**Conclusion:** Despite the small number of subjects, the presence of one or more unfavourable IL28B genotype does not portend a poor SVR prognostic outcome. This suggests that TD in this clinical context may be a critical factor in the achievement of SVR, probably above that of the genetic predisposition.
**POSTER NUMBER: 39**  
**PAPER NUMBER: 144**  

**ISOLATED ACTH DEFICIENCY SECONDARY TO IFN-Α THERAPY IN A HIV CO-INFECTED HCV PATIENT: A CASE REPORT**  
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**Introduction:** Pituitary dysfunction in chronic hepatitis C infection treated with interferon-α is a rare condition with 3 case reports world wide. We hereby reports a case of isolated ACTH deficiency with intact other pituitary axes 3 months after therapy.  

**Method:** Case report.  

**Result:** A 34 year-old man co-infected HIV and HCV presented with a 3 month history of lethargy, listlessness and a general lack of energy. Past medical histories include inactive neurosyphilis, chronic schizophrenia and seizure. His HCV is genotype 1 without cirrhosis and he completed a 48-week course of combination IFN-α and RBV for 48 weeks uneventfully 3 months prior.  

Clinically he was unwell with BP of 110/70 sitting and 100/60 standing and PR of 89bpm. General examination was unremarkable and there was no pigmentation. A baseline serum cortisol was 36nmol/L at 07:05AM with ACTH of 3.3pmol/L. His TSH was 0.96 mIU/L, fT4 of 19.1pmol/L, LH 13.8 IU/L, FSH 7.7 IU/L, Testosterone 13.9nmol/L, GH <0.2mIU/L, IgF-1 0.73U/mL, Prolactin 402mIU/L. A 250ug Synacthen stimulation test showed a rise from baseline of 70 to 304nmol/L at 60 minutes. His UECs were normal with Na of 137 and K 4.1mmol/L. His cerebral MRI was normal including the pituitary although no dedicated pituitary MRI was performed. Pituitary antibodies were not available.  

The patient was started on Hydrocortisone with marked improvement. Mineralocorticoid replacement therapy was not indicated as this is likely to be secondary adrenal insufficiency. The patient was to be followed up for an assessment of possible pituitary recovery.  

**Conclusion:** This is the first case report of isolated ACTH deficiency likely to be related to interferon-α therapy for chronic hepatitis C. Pituitary related adrenal insufficiency should be considered in this setting.  

**Disclosure of Interest Statement:** There is no conflict of interests pertinent to any of the authors.  

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**POSTER NUMBER: 40**  
**PAPER NUMBER: 59**  

**OUTCOMES OF A COHORT OF PRISONERS WITH GENOTYPE 1 HEPATITIS C TREATED WITH STANDARD DOUBLE THERAPY. WE REPORT SUCCESS RATES OF >90%**  
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**Introduction:** Tasmanian prisons treated their first case of hepatitis C in 2008. By the end of 2012 we will have a total of some 70 treated cases. Hepatitis C prevalence in our prisons are 30% clustering in maximum security areas. With experience we have become less risk averse and consequently treat more people with co-morbid conditions and drug and alcohol problems. Our early treatment successes with standard therapy in Genotype 1 disease has caused us to persist in this treatment despite the knowledge that new treatments were on the way.
**Methods:** All prisoners who have a sentence length that can accommodate a complete hepatitis C treatment qualify for consideration. Additionally those who have prison acquired disease, are actively injecting in prison, have infection of >10 years or a fibrosis score >2 receive priority. The program is internal to the prison and staffed by a Clinical Director, two Medical Officers, a BBV Program Coordinator and a team of generalist and mental health nurses.

**Results:** For hepatitis C treatment across all genotypes including type 1 we report a success rate [SVR] of >90% using standard double therapy. The treatment program produces significant health benefits in terms of body weight, reduced injecting drug use and the experience of wellbeing. We attribute this success to directly observed treatment [DOT], prompt professional inputs as required, a dearth of access to drugs and alcohol, and the relative stability that the prison environment provides compared to the community circumstances of this cohort.

**Conclusion:** Prisons are an excellent place to set up treatment programs for hepatitis C. Standard double therapy can produce significantly better cure rates in prison than can be obtained in the community. These response rates have implications for the use of standard triple therapy in prisons. Treatment in prison is an efficient public health response to the epidemic of hepatitis C in Australasia.

**POSTER NUMBER: 41**  
**PAPER NUMBER: 60**

**POINT PREVALENCE STUDIES IN HEPATITIS C IN TASMANIAN PRISONS 2011-2012**

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**Introduction:** Rates of hepatitis C in prison are thirty times those in the Tasmanian community. Being an Australian prisoner is an independent risk factor for contracting hepatitis C. Illicit drug injecting behaviour in Tasmanian prisons is significant and rates of prison acquired hepatitis C are >10% of the total prison hepatitis C load. Correctional Primary Health Services is a major provider of hepatitis C treatment services in Tasmania. In 2012 we will treat some forty prisoners for this debilitating chronic disease bringing the total number treated to 70. The formation of strategic linkages with community groups will potentially enable our treatment program to triple its treatment numbers.

**Methods:** Using Prison Health Pro software we are now able to track the hepatitis C status of the whole prison community over time. We recognise 8 diagnostic categories for hepatitis C status.

**Results:** Hepatitis C clusters in maximum security environments TABLE 1. TABLE 2. We find is a dynamic situation of hepatitis C infection, virus clearing and re-infection all against a background of frequent admission to prison and discharge back into the community TABLE 3.

**Conclusions:** Greater than 10% of the cases of hepatitis C in Tasmanian prisons are prison acquired. Acute hepatitis C is common both as community and prison acquired disease. Computer tracking of hepatitis C disease states is necessary to the competent treatment of hepatitis C in high risk populations such as prisoners. Many prisoners return to the community with acute or chronic hepatitis C. There needs to be a much higher profile of community and public health awareness of the extent to the problem. What this means is that prisons are an excellent place to educate, treat and otherwise focus attention on the hepatitis C epidemic. TABLE 4.
EVALUATION RESULTS OF THE FIRST NATIONAL HEPATITIS B NURSING CURRICULUM – DID THE PILOT INCREASE CULTURAL AWARENESS?

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9 Treasurer and Board member, Australasian Hepatology Association.

Background: The Department of Health and Ageing funded the Australasian Society for HIV Medicine (ASHM), in collaboration with the Australasian Hepatology Association (AHA), to develop a national curriculum to upskill nurses caring for people with hepatitis B. NSW Ministry for Health recognised this contribution to workforce development by funding a pilot of the course, held in May 2012.

As the majority of individuals in Australia with chronic hepatitis B are from culturally and linguistically diverse backgrounds, there is great diversity amongst those needing monitoring and management of their disease. Therefore, nurses caring for people with hepatitis B need to incorporate the principles of cultural competence within the care framework. When implemented, this should ensure non-discriminatory practice, essential for creating an environment in which diverse patients continue to engage with the health system.

A fundamental component of the course; Hepatitis B Nursing: Advanced Nursing Management and Care, is to encourage participants to consider their own cultural values, beliefs and practices and reflect on how one’s own cultural perspective impacts on interactions with patients, especially in the hepatitis B context.

Method: The course will be comprehensively evaluated by the pilot course participants, through self-directed questionnaires completed during the training. Elements evaluated will include relevance to workplace, quality of education, appropriate pitch and whether the learning objectives, in particular those related to cultural competency, were met by the training. Feedback from participants will be collated and summarised in an evaluation report.

Members of the working group involved in curriculum development will also be present during the pilot to provide feedback on course format, content, appropriateness and cultural sensitivity.

Results: The evaluation results will be presented and recommendations for curriculum improvement will be discussed. In particular, elements regarding the learning gained from an introspective analysis of participants’ own cultural identities will be examined.

Conclusion: Recommendations from the evaluation report will be incorporated into the future delivery of hepatitis B nursing education.

Disclosure of Interest Statement: E Wheeler has no conflicts of interest to declare. J Richmond has received funding support from Bristol Myers Squibb and Gilead Sciences Pty Ltd. S Polis received a research grant from Gilead Sciences Pty Ltd in 2009. S Warner has no conflicts of interest to declare.
DEVELOPING THE FIRST NATIONAL HEPATITIS B NURSING CURRICULUM

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9 Treasurer and Board member, Australasian Hepatology Association.

Background: The First National Hepatitis B Strategy recognised nursing workforce development as a priority. In 2011, the Department of Health and Ageing funded the development of a hepatitis B nursing curriculum to define and upskill the nursing workforce, in line with the Strategy. With this funding, the Australasian Society for HIV Medicine (ASHM), in partnership with the Australasian Hepatology Association (AHA), embarked on a project to develop a comprehensive, intermediate-advanced level course for nurses caring for people living with, or at risk of, acquiring hepatitis B.

Method: A Working Group (WG) was established, comprising of hepatology nursing experts with experience in hepatitis B and a representative from multicultural health. The WG worked in consultation with the AHA, and was coordinated by ASHM. Guidance on the target group, pitch, format, program content and cultural appropriateness of the course was provided, along with assistance to develop and review course materials. The process was overseen by committees responsible for guiding the GP hepatitis B education conducted by ASHM.

The WG engaged key stakeholders to review and endorse the curriculum. Between May 2011 and May 2012, the availability of hepatitis B nursing education was promoted at a range of educational events and through electronic networks.

Results: The Hepatitis B Nursing: Advanced Nursing Management and Care course was successfully developed in consultation with key organisations and individuals across Australia. The program, involving a combination of online and face-to-face formats, is endorsed by the AHA, the Australian Liver Association and recognised by the Australian Practice Nurses Association and the College of Nursing for continuing professional development hours. Over 110 nurses throughout Australia expressed interest in attending the course. The course was piloted in Sydney in May 2012.

Conclusion: Successful engagement with hepatology, multicultural health and nursing stakeholders has resulted in a course that provides nurses with advanced level skills in hepatitis B nursing care and management.

Disclosure of Interest Statement: E Wheeler has no conflicts of interest to declare. J Richmond has received funding support from Bristol Myers Squibb and Gilead Sciences Pty Ltd. S Polis received a research grant from Gilead Sciences Pty Ltd in 2009. S Warner has no conflicts of interest to declare.
LOW FREQUENCY OF NNRTI HEPATOTOXICITY IN HIV-INFECTED FEMALE ATTENDING HIV CENTER IN JAKARTA

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Introduction: Non-nucleoside reverse transcriptase inhibitor (NNRTI) has been associated with liver toxicity in HIV infected patients. There are conflicting data regarding increasing risk of hepatotoxicity among HIV infected female.

Methods: We performed a retrospective study to evaluate, under routine circumstances, severe hepatotoxicity in 186 antiretroviral naïve female initiating NNRTI-based regimen between January 2008 and December 2010. Severe hepatotoxicity as measured by the levels of AST and ALT elevations were graded according to the AIDS Clinical Trial Group criteria (grade 3-4).

Results: Of 186 participants, overall median baseline CD4+ T-cell was 109 cells/μL (interquartile range [IQR] 59-199). Most of them (88.6%) got HIV through heterosexual contact. Hepatitis B surface antigen was detected in 2 of 122 patients (1.6%) and anti hepatitis C was detected in 4 of 118 patients (3.4%). ART included lamivudine, with either zidovudine (77.4%) or stavudine, and nevirapine (79.6%) or efavirenz.

Grade 3-4 AST elevation was documented in 5 patients (2.7%) while only 3 patients (1.6%) shown grade 3-4 ALT elevation. Neither hepatitis B or C status, baseline CD4, nor NNRTI used influenced severe hepatotoxicity.

Conclusion: The incidence of severe hepatotoxicity appears to be low in this retrospective analysis of HIV-infected female receiving NNRTI-based regimen.

Disclosure of Interest Statement: No disclosure

CHRONIC VIRAL HEPATITIS IN CHILDREN

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Introduction: A recent study over an 8 year period (2000-07) identified 930 children with Hepatitis B Virus (HBV) and 777 children with Hepatitis C Virus (HCV) who were reported to NSW Health1. During the same period 79 children with HBV and 29 children with HCV were referred to specialist clinics at three tertiary referral children’s hospitals in New South Wales [Children’s Hospital at Westmead (CHW), John Hunter Children’s Hospital (JHH) and Sydney Children’s Hospital (SCH)].

This suggested a need to develop tertiary services for children with chronic viral hepatitis.

Methods: The care of children with HBV and HCV in NSW is currently managed within the Paediatric Viral Hepatitis Network (PVHN). Both the screening and referral of patients continues to be lower than expected which indicates a continuing need for education of health care professionals. A referral pathway is currently being developed to facilitate referral of children to an appropriate paediatric service.
**Results:** Recently the PVHN has developed a brochure for families and children who are HCV positive. This is soon to be translated into 4 different languages. The screening guidelines for children with HCV have been developed in conjunction with the Agency for Clinical Innovation (ACI).

This year Pegylated Interferon has been made available via the Pharmaceutical benefits scheme (PBS) making access to treatment for children with HCV more readily available.

**Conclusion:** There is a specific need for further education for numerous health care sectors in the area of paediatric hepatitis. This is reflected in the low percentage of children at risk of HBV and HCV being screened and referred to a specific paediatric viral hepatitis service. With the development of the PVHN the aim to improve the screening rates, referral and management options for children with viral hepatitis will be achieved.


**Disclosure of Interest Statement:** There is no recognized conflict of interest related to this poster.

**POSTER NUMBER: 46**

**PAPER NUMBER: 101**

**ENGAGING AND FOLLOWING UP PEOPLE WHO INJECT DRUGS WITH ACUTE HEPATITIS C INFECTION IN AN OUTREACH SETTING: THE HITS-I STUDY**

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The Kirby Institute, University of New South Wales

**Introduction:** Marginalised populations such as people who inject drugs (PWID) often face barriers accessing health care. Among PWID infected with the hepatitis C virus (HCV), fear of discrimination, low treatment literacy and assumptions about chronic infection based on antibody status, impede access to care. The current study aimed to examine the feasibility of engaging and following up this group in an outreach setting.

**Methods:** Participants enrolled in an ongoing prospective study identified with newly acquired HCV were invited to participate in an incident case cohort (HITS-i), consisting of an intensive post-test counseling, referral, interview and serological protocol of 5-8 visits between 0 and 24 weeks post-infection. In-depth qualitative interviews (n=20) designed to explore seroconversion experiences were conducted. Digital recordings were transcribed verbatim and transcripts coded to identify salient themes. The current study focuses on themes relevant to engagement, retention and follow-up.

**Results:** By March 2012, 16/17 eligible HITS-i participants (94%) had completed the 24 week protocol. Median age was 25 years, 41% were female and the main drug injected was heroin (76%). One third (31%) achieved viral clearance at week 24. At baseline, most participants were unclear about the distinction between HCV antibody and RNA and the need for ongoing testing. Participants identified the value of receiving a diagnosis in an accessible setting from an approachable and non-judgmental team, follow-up testing and monitoring of viral load, and opportunities for clarification and support post-diagnosis as beneficial and influencing their continued participation.

**Conclusion:** High retention in the HITS-i study is attributable to a well engaged participant group who perceive clear benefits accruing from participation. Results demonstrate the feasibility of screening, diagnosis and ongoing follow-up of PWID with newly acquired HCV in an outreach setting.

**Disclosure of Interest Statement:** This research was funded by the National Health and Medical Research Council (Project Grant # 630483).
PEER EDUCATION IN ABORIGINAL COMMUNITIES
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1 Aboriginal Health and Research Council; 2 Hepatitis NSW; 3 Wellington AMS; 4 South Coast AMS

Introduction: Hepatitis C is the fastest growing virus and the leading cause of liver cancer in Australia. Hepatitis C has been reported at disproportionately high rates among Aboriginal and Torres Strait Islander communities, and NSW has the highest rate of hepatitis C notifications in Australia.

Methods: To reduce rates of Hepatitis C infections, The Aboriginal Medical & Research Council developed a Peer Education (PE) pilot targeting young Aboriginal people, 14-25 years old across NSW. The pilot is currently been delivered over April/May in two locations: Nowra and Wellington.

The pilot will compare two different approaches to PE.

One: The Peer-Led approach, will adopt a traditional methodology, where the peers are recruited and trained on Hepatitis C, as Peer Educators (PErs). They then conduct sessions in schools and youth centers. Two: A Peer Driven approach, where several PErs are selected, trained briefly on Hepatitis C and they then recruit other PErs. If they successfully recruit new peers, they then receive further incentives. The new peers are then trained in the same way and receive incentives for every peer they successfully recruit.

Results: Preliminary analysis of the PE’s literature has revealed that both methods are relevant and effective in different ways. This pilot will test their effectiveness among Aboriginal communities and which is better suited in terms of capacity building, resource development and distribution.

Conclusion: PE is a recognised method to disseminate knowledge on Hepatitis C prevention, however there is little documented evidence of the effectiveness of PE in Aboriginal communities. This pilot will provide information on the effectiveness of PE in reducing hepatitis C infections among Aboriginal people. Exact findings and evaluation from the first phase will be presented at the July’s conference.

LIFE AFTER HCV TREATMENT IN PEOPLE WITH HAEMOPHILIA
Lauzon CS1, Campbell L1, Preston S1
1 Haemophilia Foundation of New Zealand Inc., Christchurch, New Zealand.

Background: There is anecdotal evidence that people who ‘clear’ hepatitis C (HCV) via interferon treatment experience ongoing medical problems. Of the 189 people with haemophilia (PWH) still living who were infected with HCV through blood products in New Zealand, 57 have achieved a sustained virological response (SVR) following interferon-based therapy.

Methods: A self-completed survey was circulated to these 57 PWH to try to determine how ongoing medical problems related to HCV affect PWH who have achieved an SVR. Respondents were asked about demographic information, employment, treatment for HCV, symptoms, and liver health.

Results: In total 21 surveys (35%) were completed and returned. In terms of genotype, 20% reported having had HCV G1, 5% G2, 10% G3 and 65% were unsure. Most
participants achieved an SVR following treatment with pegylated interferon plus ribavirin (60%), although some were successful with just interferon (20%) or interferon plus ribavirin (20%). Ongoing chronic conditions developed during or within 6 months following treatment included gallbladder disease (n=2), hypo-thyroidism (n=1), arthritis (n=1), depression (n=1), and Frey’s syndrome (n=1). Over half (55%) reported feeling better within a year post-treatment, however, two (10%) reported feeling consistently worse. Beyond a year post-treatment most respondents (55%) did not experience any symptoms, but a wide variety were experienced by other respondents including ‘brain fog’, depression/anxiety and fatigue. Very few respondents (n=3, 15%) receive any ongoing monitoring via a specialist for their liver. Of the three that do, two indicated they had severe fibrosis or cirrhosis diagnosed by a Fibroscan.

**Conclusion:** While most PWH who have achieved an SVR for HCV following interferon-based therapy experience better health since completing treatment, a minority have developing ongoing chronic medical conditions and continue to experience a variety a symptoms associated with HCV infection. This survey supports the contention that HCV symptoms can persist in a small number of people after achieving an SVR.

**Disclosure of Interest Statement:** Haemophilia Foundation of New Zealand receives some funding from the New Zealand Ministry of Health to support people with bleeding disorders and hepatitis C.
**Results:** Qualitative assessment and logistic regression analysis will be performed to determine any significant associations and predisposing factors associated with CHB knowledge.

**Conclusion:** The results of this study will be central to informing the design of additional educational material to improve information delivery to patients, and provide the basis for a client engagement protocol to provide all patients with CHB the opportunity to improve their awareness of their condition, in line with the guiding principles of the National Hepatitis B Strategy.

**Disclosure of Interest Statement:** Not applicable

**POSTER NUMBER: 50  
PAPER NUMBER: 178**

**HEPATITIS B HEALTH PROMOTION BASED ON BEHAVIOURAL THEORY: A NEW MODEL**

Drazic YN, Caltabiano ML, Clough AR

1 James Cook University

Health-related decisions are complex processes influenced by a variety of factors including demographics, knowledge, psycho-social and cultural factors, as well as health care provider factors. With regard to hepatitis B, people have to make decisions about preventive action such as screening, monitoring, or immunization. Health promotion is increasingly based on behavioural theory in order to address variables outside the health care system such as health beliefs, risk perceptions, social norms, and perceived stigma. Applying a theoretical framework helps to make interventions consistent with assessments, and to ensure construct and external validity. However, existing hepatitis B health promotion efforts rarely make use of behavioural theory.

This presentation introduces a new theoretical model which covers the many factors that may influence people’s decisions about preventive behaviours related to hepatitis B. Constructs from two existing models were used as a guide, and the new components of medical-social self-efficacy and antenatal care were added. Based on this new model, a questionnaire was constructed to assess hepatitis B-related knowledge, awareness, beliefs and behaviour in the North Queensland Hmong community. This is an important study population because prevalence studies generally show a high prevalence of chronic hepatitis B (CHB) in Hmong samples (~15%).

The next step is a culturally appropriate educational intervention based on narrative communication theory and incorporating constructs of the new model. The results from the baseline assessment help to optimize the balance between perceived threat and efficacy which is crucial for message acceptance. Delivery of the educational intervention is followed by a community screening program and a post-intervention assessment. Post-intervention data is collected from the intervention group as well as a control group.

The use of a theoretical framework and the consistent approach will facilitate replication with other populations or health conditions.
ADDRESSING CHRONIC HEPATITIS B IN A HIGH RISK POPULATION: AN INTEGRATED APPROACH
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1 James Cook University

Introduction: Chronic hepatitis B (CHB) is endemic in most Asian countries, but Hmong migrant populations have a higher prevalence than most (~15%) and the worst outcomes of hepatocellular carcinoma. Therefore, the North Queensland Hmong community represents an important study population for CHB research. After a long history of persecution and resettlement challenges, preventive health care has low priority in the community. However, community leaders support this research because many families were touched by liver disease in the past. The aims are to raise awareness about CHB in the community, increase their confidence in dealing with the health care system, and enable preventive action such as screening, immunization, and monitoring.

Methods: Details of the research are continually discussed with community leaders and all written material is checked for acceptability before translation. The project involves 1) the development of an assessment tool based on behavioural theory (including a new model covering psycho-social, cultural, health care, and other factors); 2) a narrative educational intervention incorporating theoretical principles such as perceived threat and efficacy; 3) a community screening program to facilitate preventive behaviours (collaboration with Queensland Health); and 4) post-intervention assessment.

Results: Data collection and analyses are still proceeding but early indications suggest low knowledge and awareness of hepatitis B in the community as well as some trust and communication issues related to health care. Further results will point to the most effective ways of overcoming these barriers.

Conclusion: Community consultation and a mutually supportive relationship are crucial to the success of this study. The use of a theoretical framework ensures construct and external validity, and although tested in a geographically isolated community, the approach should find wide application and ultimately help to reduce undetected disease while improving CHB diagnosis and treatment rates.

“IT'S TAKEN SO LONG TO DO TREATMENT”: A PROGRAM AIMED AT ENGAGING PEOPLE USING ILLICIT DRUGS AND LIVING WITH HEPATITIS C
Bergin T1, Fitzpatrick K2
1 Western Region Health Centre

Introduction: Injecting illicit drugs and Hepatitis C are two topics not generally discussed openly within our society. As a result, these people often experience discrimination. The Western Region Health Centre’s ‘CHOICES’ group is based on the ‘Mutual Aid Model’ (Schulman), which highlights how participants learn through discussion based approach and is based on the principles of self management and positive behaviour change.
Methods: A focus group was undertaken before the commencement of the program to identify how participants would like the group to proceed. The program was evaluated using a mixed method design to ascertain the degree which this program impacted on this marginalised and select group of participants. This method was implemented by a pre and post survey comprising 13 questions using the Likert scale and 2 qualitative questions. The questionnaires were analysed using a clinical significance formula and thematic analysis.

Results: By sharing similar experiences, participants normalised their condition and learned from other people living with the same long term condition. This increased their confidence in managing their own health and taking greater responsibility for their lives. The participants often described attending the program as an opportunity for them to talk about living with hepatitis C in a safe and positive group setting. In addition, the program also improved social connectedness, increased self-efficacy, improved community integration, increased movement through the stages of change and created more effective peer support.

Conclusion: The “CHOICES” program has been of great benefit to participants and has increased their knowledge and the adoption of self-management strategies to better manage their hepatitis C. The participants found that this discussion based group enabled them to express themselves openly and share similar experiences in a trusting and respectful setting.

Our presentation will include an overview of the effects the “CHOICES” group had on the participants, which is reflected by the evaluation results.

Disclosure of Interest Statement: n/a

POSTER NUMBER: 53
PAPER NUMBER: 181
PEER EDUCATION – AIVL STYLE – ALIVE AND KICKING

Harrison T1
1Australian Injecting and Illicit Drug Users League (AIVL)

Introduction: Peer education has been at the heart of the Australian Injecting and Illicit Drug Users League (AIVL) programs for the past twenty years. During this time AIVL has been able to explore a variety of methods in numerous settings. This has allowed AIVL to strengthen and hone its peer education activities on an ongoing basis.

The ‘National Hepatitis C Peer Education Training Project’ has been a formal part of AIVL’s education program since 2003. The training is targeted at people who inject drugs and/or those on pharmacotherapy programs. The aim is to enhance and exchange knowledge on issues such as; viral hepatitis prevention, blood awareness, and promoting safer injecting and drug using practices.

This presentation will examine the findings from the projects new peer education process trialed during 2011-2012. In particular it will focus on how participants interpret the peer education they receive in the formal setting, and the context in which they then pass information on within their networks on the grass-roots level.

Methods: Historically AIVL has conducted peer education sessions in three to four national jurisdictions each year. This approach has been revised so that the same participants attend a series of three to four consecutive workshops, with a greater focus on participant’s analysis and interpretation of harm reduction messages and their onward translation.
Conclusion: Peer education between injecting drug users often happens in the injecting context which is the ideal setting for information exchange to occur. However there are a multitude of other interactions between drug users and this presentation outlines how AIVL’s reinvigorated peer education process encourages illicit injecting drug users to initiate their own prevention strategies in a variety of situations.

**POSTER NUMBER: 54**  
**PAPER NUMBER: 127**  
**WOMEN’S EXPERIENCE OF LIVING WITH HEPATITIS C AND FACTORS THAT INFLUENCE THEIR ATTENDANCE TO CARE**

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1British Columbia Centre for Disease Control, 2University of British Columbia, 3Sydney Medical School, University of Sydney

**Background:** Approximately 95,000 Canadian women are living with hepatitis C. The rates of acute hepatitis C are increasing more rapidly in young females than any other group. Hepatitis C is a complex, infectious disease with an unpredictable course. Those affected require ongoing health services to monitor and manage disease progression. Studies indicate that non-attendance rates for hepatitis C care are between 28-80%; however few Canadian studies have examined the reasons for this from a client’s perspective.

**Methods:** This descriptive interpretive study was conducted in 2011 across three Canadian provinces and explored women’s experience of living with hepatitis C and factors contributing to their non-attendance. Through purposive sampling techniques 24 women were recruited and interviewed. The taped and transcribed interviews were coded and thematically analyzed.

**Results:** Data analysis illustrated several key themes: self-worth, competing priorities, provider relationship and access to services. The first two themes are focused at the individual and interpersonal levels while the other two themes are focused at the provider or systems level. Significant variation was noted within participants’ experiences influenced by the type of services delivered and the context of women’s lives. The experience of being diagnosed ranged from feeling fully supported to no support, e.g. having a letter sent informing them of their diagnosis. Descriptions of interactions with health care providers ranged from being accepting and informative to feeling judged and stigmatised. Participants’ recommendations included service delivery models that integrate health and social supports and address provider and systemic barriers which impedes access to appropriate, accessible and timely health care.

**Conclusion:** The themes derived indicate that affected women may benefit from interventions or support to improve hepatitis C related self-advocacy, health education and provider relationship issues. These recommendations will inform the development of resources and programs aimed at improving quality and uptake of services.

**Disclosure of Interest Statement:** None to disclose.
LET DOWN: RESULTS OF THE HAEMOPHILIA FOUNDATION OF NEW ZEALAND 2011 PEOPLE WITH HAEMOPHILIA AND HEPATITIS C SURVEY

Lauzon CS, Campbell L, Preston S

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Background: Prior to the implementation of blood screening in 1992 and super-heat treatment of factor concentrates by 1993, 189 people with haemophilia (PWH) in New Zealand were infected with hepatitis C (HCV) through blood products. Nearly 20 years later, over a third of the PWH exposed to HCV continue to live with chronic HCV and the additional toll this has on their health.

Methods: To understand the current impact of HCV in this community a self-completed survey was circulated to 53 PWH with chronic HCV in New Zealand. Respondents were asked about demographic information, employment, treatment for HCV, symptoms, liver health, HCV education, general health, activities and psycho-social functioning.

Results: In total 31 surveys (58%) were completed and returned. Respondents' ages were distributed evenly between 19-45 (26%), 46-60 (35%) and over 61 years (39%). Only half (47%) of those aged under 61 years were in full-time employment. Half of the respondents (52%) had unsuccessfully tried interferon therapy. A FibroScan® had been undergone by 48%. Six (19%) respondents indicated they had fibrosis or cirrhosis and one liver cancer. Fatigue affected 84% of respondents and had the most impact on their lives. Although half (51%) reported feeling at least good, most reported having physical limitations, especially in relation to vigorous activity (81%). The survey showed that the majority found daily tasks harder to complete, both because of pain (49% at least some of the time), and also loss of energy (67% at least some of the time). Anxiety about the effects of HCV affected 81% of respondents.

Conclusion: Most PWH and chronic HCV understand their condition and reported making positive lifestyles choices to support their liver health. Despite this, many respondents still feel angry at contracting HCV and indicated that living with HCV, especially the associated fatigue, creates a burden on their daily life.

Disclosure of Interest Statement: Haemophilia Foundation of New Zealand receives some funding from the New Zealand Ministry of Health to support people with bleeding disorders and hepatitis C.

USING THEATRE TO BREAK DOWN THE BARRIERS: A PARTNERSHIP APPROACH TO HEPATITIS C AWARENESS

Proudfoot L, Parris L, Moro P

1Hepatitis Victoria, 2Ilbijerri Theatre Company

Since 2005, an exciting and ground breaking theatre project has been breaking down the myths and the silence around hepatitis C via the use of live performance and comedy. The production raises awareness and provides transmission and prevention education about hepatitis C to at risk communities such as Aboriginal people, young people, and prisoners.

As part of an innovative partnership approach between Hepatitis Victoria (HV), Ilbijerri Theatre Company and the Victorian Department of Health (DH) the project commenced
in 2005 with the production of Chopped Liver, which threaded hepatitis C prevention and awareness messages around significant cultural and historical events in the lives of Aboriginal people in Australia.

Building on the success of Chopped Liver, in 2010 the production was reworked into Body Armour. The focus of this production was on the popularity of body art in young people, the issues around peer group pressure, and the dangers of ‘backyard’ or unsterile body art.

To date, the two productions have been seen by over 10,000 people in 150 communities. They have toured in New South Wales, Queensland, South Australia and Western Australia. In 2012, Hepatitis Victoria expanded its support of the play to offer pre and post-education sessions to schools that hosted the production.

This presentation will focus on the effectiveness of using community art projects for viral hepatitis education and awareness.

**POSTER NUMBER: 57**

**PAPER NUMBER: 162**

**HEPATITIS C RESOURCE CENTRE OTAGO**

Te Au H V\(^2\), Beck A R\(^1\)

\(^1\) Hepatitis C Resource Centre Otago (HCRCO), \(^2\) Dunedin Intravenous Organisation (DIVO)

**Introduction:** The Hepatitis C Resource Centre Otago is a community organization that provides information and education about hepatitis C for the Otago and Southland communities. HCRCO also offers support for those who live with, or are affected by, hepatitis C.

**Methods:** Both staff has had the experience of living with HCV and clearing the virus through treatment. The coordinator has completed computer courses so the centre can operate more efficiently. The educator is currently studying a Bachelor in Social Services so counselling can be offered. The educator completed training to become a Phlebotomist in 2006 so blood tests could be performed on-site during the free weekly DIVO doctor’s clinic.

**Results:** We now network with CADS (Community Alcohol/Drug Service), Dunedin Hospital Gastro Department, Otago Corrections, DIVO/SHRP (Needle Exchanges), Bridge Programme, Sexual Health, Family Planning, Rape Crisis, WINZ. We now give presentations about HCV to those at potential risk, high risk and to occupational groups. As of April 27 2012, 300 blood tests have been performed (m=169, f=131) and 30 clients have been referred for hepatitis C treatment.

**Conclusion:** The stigma associated with hepatitis C will only lessen with more discussion and education. Educating the community, talking about HCV and testing for the virus are positive steps for our community.

**POSTER NUMBER: 58**

**PAPER NUMBER: 34**

**HEP C: TAKE CONTROL AND THE INTEGRATED HEPATITIS C SERVICE**

Walsh L\(^1\), Livingston J\(^2\), Irving G\(^1\).

\(^1\) Hepatitis Victoria, \(^2\) Quem Associates

**Hep C: Take Control** is a chronic disease self management program developed and conducted by Hepatitis Victoria. The project was piloted in Victoria in 2009/2010, originally funded by the Commonwealth Department of Health and Ageing. The pilot project was evaluated by the Public Health Innovation Team at Deakin University. The project and evaluation findings were presented at the 2010 Australasian Viral Hepatitis Conference.
Following the initial project, additional funding was secured in 2011 through the Integrated Care Branch of the Victorian Department of Health to expand the program to reach more marginalised people with hepatitis C through the Victorian Integrated Hepatitis C Service. In addition to the implementation of 10 chronic disease self management programs, there is also a strong workforce development component involved in the current project. The aim of the workforce development element is to upskill the hepatology nurses involved in the Integrated Hepatitis C Service in chronic disease self management and conducting small group interventions.

The aim of this presentation is to provide an update on the progress of Hep C: Take Control, from pilot project, to embedded program, to targeting more marginalised client groups (such as people who inject drugs), and the challenges faced by Hepatitis Victoria through these transitions. By September 2012, Hepatitis Victoria will have conducted eight Hep C: Take Control groups through the Integrated Hepatitis C Service, in eight different locations (including three rural/regional locations). The progressive data from the evaluation of those groups will also be presented at this conference.

**POSTER NUMBER: 59**
**PAPER NUMBER: 35**

**PARTNERSHIP AGAINST HEP B – WORKFORCE DEVELOPMENT PROJECT**

Walsh L1.
1Hepatitis Victoria

In July 2011 Hepatitis Victoria as a part of the ‘Partnership Against Hep B’ in conjunction with the Multicultural Health Support Service (MHSS) conducted the Workforce Development Project. The main aim of the Workforce Development Project was to promote the availability of subsidised hepatitis B vaccination in Victoria for people with hepatitis C, through the education of workers at organisations servicing a large number of people with, or at risk of, viral hepatitis. The Project also aimed to educate people about the importance of hepatitis B vaccination, especially for those with existing liver disease.

The Project was the first hepatitis B specific project conducted by Hepatitis Victoria, after the organisation changed its name and formally expanded the scope of its services and programs in mid 2011 to include all viral hepatitis. This small project was viewed as an opportunity to explore the training and education needs of the organisation and its staff in relation to hepatitis B, as well as to begin formal hepatitis B education services to the community of people living with hepatitis B and the organisations and workers who provide services to them. As part of this project tools were developed to audit Hepatitis Victoria staff knowledge and confidence in delivering education and handling telephone ‘Infoline’ calls about hepatitis B. This information was then used to inform the training needs for Hepatitis Victoria staff.

Along with the assistance of a steering committee, a standard presentation, advertising material and evaluation tools were developed. A total of 14 presentations, to 178 people, were given during the project. Knowledge and key message delivery was assessed through a pre- and post-session quiz to participants. The results of the quiz gave some good insight into how well the education messages were received, and areas needed to improve when providing viral hepatitis education to ensure that messages were appropriately conveyed.
OVERDOSE MANAGEMENT: WHAT'S THIS GOT TO DO WITH HEPATITIS C?

Wiggins N1

1Canberra Alliance for Harm Minimisation and Advocacy CAHMA

Introduction: On first glance an overdose management program may seem to have little relevance to hepatitis C but as this program focuses on engaging high risk, priority populations for overdose these populations are also high risk for hepatitis C transmission. Being Australia's first overdose program providing take home naloxone enables the program to engage with and gain the interest of a broad spectrum of injecting drug users, including marginalized, hard to reach populations.

Methods: The program is focusing on specific high risk populations for overdose which include recently released prisoners and Indigenous peoples. These two groups are additionally high risk populations for hepatitis C infections and for many have little or no opportunities for engagement with community or health agencies and therefore miss out on essential prevention and treatment messages in relation to hepatitis C. Specific, targeted recruitment strategies have been developed to ensure these populations are enrolled in the program.

Results: The program is being conducted over a two year period with 200 participants. The overdose education program includes BBV messages but also importantly provides a contact point and first engagement and introduction to a peer based, community organisation that provides an entry point for education on hepatitis C transmission, treatment and support services.

Conclusion: An independent evaluation is being conducted to measure the implementation process and importantly measure the success or otherwise of engaging hard to reach, at risk communities.

POPULATION- ATTRIBUTABLE RISK ESTIMATES FOR RISK FACTORS ASSOCIATED WITH HEPATITIS B AND C IN PAKISTAN, POLICY IMPLICATIONS FOR PAKISTAN AND OTHER SOUTH ASIAN COUNTRIES

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2Pakistan Medical and Research council (PMRC)

Introduction: Re-use of contaminated syringes, greater frequency of therapeutic injections, tattooing, and skin piercing have repeatedly been shown to be an important and independent risk factors for hepatitis B and C, however, impact of eliminating these risk factors on developing new cases have not been explored yet.

Methods: We estimated the population attributable risks (PARs) of various risk factors of HBV and HCV in our population using data from a nationally representative cross sectional survey that tested 47,000 individuals for (HBsAg) and anti-HCV antibody between July 2007 - May 2008 by Pakistan medical and research council (PMRC).
**Results:** Hepatitis B: Reducing the frequency of injections in last one year yield a PAR of 3.5%. Likewise, decreasing the practice of reuse of syringes will prevent 2.7% cases from our population. Eliminating the practice of shaving at barbers will avert 2.5% of new cases. Stopping sharing of smokeless tobacco gives the highest PARs and will prevent 4.4% of hepatitis B.

Hepatitis C: Reducing the frequency of injections in last one year and decreasing the practice of reuse of syringes will avert 11.3% and 2.7% of cases respectively. Decreasing the practice of sharing of smokeless tobacco will preclude 8.1% of cases. Stopping tattooing will prevent 3.5% of cases. Similarly, practice of ear/ nose piercing among females yields PARs of 5.9%.

**Conclusion:** About one-third of the HBV and HCV cases in this Pakistani population could be prevented by the intervention on a few selected and modifiable risk factors.

**Disclosure of Interest Statement:** No conflict of interest

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**POSTER NUMBER: 62**

**PAPER NUMBER: 82**

**WILLINGNESS TO RECEIVE TREATMENT FOR CHRONIC HEPATITIS C VIRUS INFECTION AMONG PEOPLE WHO INJECT DRUGS IN THE OPIOID SUBSTITUTION SETTING: THE ETHOS STUDY**

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**Introduction:** Despite advances in hepatitis C virus (HCV) treatment and its accessibility, treatment uptake remains low among people who inject drugs (PWID). HCV treatment willingness was assessed among a population of PWID, the majority of whom were receiving opioid substitution treatment (OST).

**Methods:** Enhancing the Treatment for Hepatitis C in Opioid Substitution Settings (ETHOS) is a prospective cohort examining HCV treatment uptake, response and re-infection. Recruitment is through a network of nine OST and community-based clinics in New South Wales, Australia, undertaking HCV assessment, treatment and monitoring. Eligibility criteria include chronic HCV infection and history of injecting drug use.

**Results:** Overall, 385 participants have been enrolled. Data was available on the initial 237 participants. The mean age was 40 years, the majority was male (71%), 49% had finished high school, and 8% had full-time employment. Seventy-seven percent were currently receiving OST, including 57% on methadone and 20% on buprenorphine. Ninety two percent (n=218) were HCV treatment-naive, of whom, 49% (n=106) had never sought treatment before. The most common self-reported reason for not having
received treatment was lack of HCV knowledge (30%, n=32), followed by concerns about treatment side effects (12%, n=13) and asymptomatic infection (11%, n=12). The majority of participants (80%, n=187) were definitely or somewhat willing to receive HCV treatment over the next year; 9% (n=20) were neither willing nor unwilling and 11% (n=27) were definitely or somewhat unwilling. The most common self-reported reasons for lack of treatment willingness were concerns about treatment side effects (15%), ongoing drug use/injection (11%) and asymptomatic infection (11%).

**Conclusion:** High levels of treatment willingness have been demonstrated among PWID within the ETHOS study. Access to HCV treatment assessment and delivery within the clinic network should ensure that a greater number of PWID are able to be commenced on treatment prior to the introduction of the ETHOS model.

**POSTER NUMBER: 63**
**PAPER NUMBER: 110**
**DELIVERY AND MONITORING OF HEPATITIS B BIRTH DOSE: BARRIERS AND STRATEGIES**
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**Introduction:** Perinatal transmission of hepatitis B virus leads to a sizeable proportion of chronic hepatitis B infections. Delivery of a hepatitis B vaccine 'birth dose' as soon as possible after birth (ideally within 24 hours) is the most efficient way to prevent perinatal transmission. In 2009 the World Health Organization (WHO) stated that all infants should receive this birth dose of hepatitis B vaccine. However it was acknowledged that weak immunization programs and primary health care systems create challenges to birth dose delivery and achievement of hepatitis B control goals.

**Methods:** We developed a background paper for a WHO technical meeting examining approaches to deliver the vaccine to more children on time. We reviewed approaches to delivery of the hepatitis B birth dose documented in both the peer reviewed and grey literature, with a focus on low and middle income countries.

**Results:** Barriers identified included lack of access to vaccine, to a vaccinator, missed opportunities for timely delivery, misconceptions about contraindications, fear of adverse events, opposition to delivery of vaccine by non-clinical or non-immunisation program staff, regulatory and political issues regarding out of the cold chain (controlled temperature chain) vaccine, acceptance of alternative injection devices, insufficient demand, difficulties identifying births and integrating systems not previously involved in giving vaccines, and poor recording of vaccine delivery. A number of countries have developed innovative strategies to address these barriers. Among the best documented are Indonesian projects incorporating delivery of birth dose at home and Chinese programs to improve hospital births and thus birth dose delivery.

**Conclusion:** Innovative strategies for the delivery of the birth dose need to be evaluated and shared. Documentation should include standard operating procedures for relevant staff.

**Disclosure of Interest Statement:** Funding was received from the WHO to conduct this review and prepare background documents for a technical meeting.
PLANNING FOR VIRAL HEPATITIS IN NSW/AUSTRALIA AT A MEDICARE LOCAL AND LOCAL HEALTH DISTRICT LEVEL

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Introduction: Medicare Locals have been established as part of national health reform in Australia. Medicare Locals will plan and coordinate service provision across primary health care providers (including general practice) as well as assist providers in maintaining and improving service quality. Blood Borne Viruses (BBVs) and Sexually Transmitted Infections (STIs) are not given high priority in national primary health care policy. The Australasian Society for HIV Medicine (ASHM) established the NSW Planning Project to assist those involved in governance of Medicare Locals to better understand current service provision and likely trends relevant to BBVs and STIs in their area, engage with stakeholders and ensure planning and decision making is based on the best available evidence. Assistance was to be provided through information products in print and electronic form as well as direct consultation.

Methods: A steering committee provided advice on content for materials. Data sources such as the NSW Notifiable Diseases Database, strategy and policy documents and other relevant research were reviewed and analysed. Products were circulated to key stakeholders at a local level for endorsement.

Results: Products included a lead document comparing patterns of disease between and across Medicare Locals and highlighting priority areas for scaling up primary health care involvement. Other products included more detailed papers on Hepatitis B, hepatitis C, HIV and STIs in NSW as well as documents tailored to each Medicare local providing more detailed information on their area.

Conclusion: Engagement of new stakeholders requires an understanding of their specific needs and tailoring advocacy accordingly.

FEMALE SEX AND VARIATIONS IN IL28B ARE INDEPENDENTLY ASSOCIATED WITH SPONTANEOUS CLEARANCE OF ACUTE HCV INFECTION

Grebely J1, Dore GJ1, Schim van der Loeff M1, Rice T1, Cox AL4, Bruneau J5, Kim AY6, George J1, Maher L1, Lloyd AR1, Heffard M1, Page K3 and Prins M2, on behalf of the International Collaboration of Incident HIV and Hepatitis C in Injecting Cohorts (InC³)

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Introduction: Although variations in the interleukin-28 (IL28B) gene region are associated with spontaneous clearance, many studies have been performed in cross-sectional studies. Factors associated with spontaneous clearance during acute HCV were assessed.

Methods: InC³ is a collaboration of nine international cohorts. Data on HCV seroconversion among those enrolled between 1986 and 2009 were included. Inclusion criteria were: history of IDU, documented anti-HCV seroconversion within a two-year period and
minimum of two therapy-naïve HCV RNA assessments following the estimated date of seroconversion. The proportion with spontaneous clearance was estimated and factors associated with spontaneous clearance identified using logistic regression.

**Results:** Among 517 with incident HCV (173 females), HCV genotype (G) prevalence was: G1, 49%; G2, 6%; G3, 30%; G4, 1%; G6, 1%; mixed, 2% and unknown genotypes, 11%. Spontaneous clearance was observed in 26% (95% confidence interval: 22%, 31%; 136 of 517). Spontaneous clearance was higher among females (38% vs. 21% males, \( P < 0.001 \)) and among those with favorable CC IL28B genotype (37% vs. 24% CT/TT, \( P = 0.005 \)). Among females with IL28B (n=131), the proportion with spontaneous clearance was 58% in those with favorable CC genotypes as compared to 27% in those with unfavorable CT/TT genotypes (\( P = 0.002 \)). In unadjusted analysis, factors associated with spontaneous clearance included female sex, Aboriginal ethnicity, no recent IDU and favorable CC IL28B genotype (vs. CT/TT). In adjusted analysis, female sex [adjusted (AOR) 2.66; 95% CI: 1.69, 4.18; \( P < 0.001 \)] and favorable CC IL28B genotype (vs. CT/TT: AOR 2.03; 95% CI: 1.30, 3.19; \( P = 0.002 \)) were independently associated with spontaneous clearance. The interaction between female sex and IL28B was assessed, but was not statistically significant.

**Conclusion:** Female sex and IL28B genotype are independently associated with spontaneous clearance during acute HCV. Delayed therapeutic intervention during acute HCV could be recommended for females with favorable IL28B genotypes to allow time for spontaneous clearance.

**POSTER NUMBER: 66**
**PAPER NUMBER: 70**

**BARRIERS TO RESPONDING PATIENTS WITH CHRONIC HEPATITIS B: THE GENERAL PRACTITIONERS’ PERSPECTIVE**

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**Introduction:** Chronic hepatitis B (CHB) is having an increasing impact on the Australian health care system. General Practitioners (GPs) are essential in reducing the personal and community impact of CHB through the effective clinical management of the infection. This qualitative study identified barriers that limited the clinical management of CHB by GPs.

**Methods:** Semi-structured qualitative interviews were conducted with 26 GPs from five Australian jurisdictions. General Practitioners self-identifying as having a ‘high caseload’ of patients and/or a particular interest in CHB were targeted for recruitment. The interview data were analyzed according to the principles of grounded theory.

**Results:** Four major themes limiting GPs’ role in managing CHB included barriers associated with general practice, specialist services, health system, and patients. Awareness and knowledge of CHB were described as the main barriers associated with general practice with a perceived link between the public and GP awareness. Communication between GPs and specialists was reported as challenging with a lack of an agreed referral pathway, poor feedback from specialist to GP after referral, and hospital-GP liaison. Health system regulations restricting the GP role included limits in prescribing anti-viral medicines, fears of being audited for screening at risk populations and inadequate financial incentives for GPs to respond to CHB were noted. Communication between GP and patients and inadequate knowledge about hepatitis B both among the general public and patients with CHB were reported as the main patient associated themes.
Conclusion: General Practitioners require additional skills and resources to respond to the identified barriers to their effective management of CHB. These include an improved awareness and knowledge of the infection, additional financial resources to support patient management, effective referral pathways, specialist support, and community awareness about the infection.

Disclosure of Interest Statement: Funding for this project came from an unrestricted educational grant from Bristol Myers Squibb through the Marketing Development Group.

POSTER NUMBER: 67
PAPER NUMBER: 229
INCREASING HEPATITIS C VIRUS CASE FINDING AMONG PEOPLE WHO INJECT DRUGS VIA DRIED BLOOD SPOT TESTING IN SPECIALIST ADDICTION SERVICES AND PRISONS: AN ECONOMIC EVALUATION

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Introduction: Hepatitis C virus (HCV) treatment is cost-effective and may reduce HCV transmission among people who inject drugs (PWID). HCV dried blood spot (DBS) testing can increase case finding in specialist addiction services and prisons. We use a cost-utility analysis to determine the cost-effectiveness of introducing DBS testing for PWID in addiction services or prisons as compared to baseline (venepuncture only).

Methods: A dynamic HCV transmission model among PWID was developed and parameterized for the UK, including disease progression, diagnosis (50% PWID diagnosed at baseline), antiviral treatment (50%/5% of referred ex-PWID/PWID treated within 2 years of referral), and contact with prison or addiction services. We assume no continuity of treatment/referral on entry/exit from prison, varied in the sensitivity analysis. Intervention impact (factor increase in baseline testing rates) was determined by meta-analysis of UK primary data. Costs (GBP £) and utilities (quality adjusted life years, QALYs) were attached to each model state and the incremental cost-effectiveness ratio (ICER) determined. Multivariate uncertainty and one-way sensitivity analyses were performed.

Results: Offering DBS testing in addiction services (3.6-fold increase in testing) is likely to be cost-effective (estimated ICER of £14,600 [$22,700 AUD] per QALY gained, willingness-to-pay threshold of £20,000 per QALY gained). With current levels of treatment, DBS testing in prisons (2.6-fold increase in testing) is unlikely to be cost-effective (ICER £59,400 [$92,500 AUD] per QALY gained) unless >40% of continuity of treatment/referral between prisons and the community is ensured. If the prevention benefit is neglected, neither intervention is cost-effective.

Conclusion: DBS testing is a cost-effective intervention to increase HCV case-finding among PWID in contact with addiction services if prevention benefits are included. The cost-effectiveness in prisons is less clear; linking care between the prison and community will be key to ensuring a testing and treatment intervention is cost-effective in this setting.

Disclosure of Interest Statement: The authors have nothing to disclose.
WHAT WE KNOW AND WHAT WE DON’T KNOW ABOUT HEPATITIS B AMONG AUSTRALIA’S INDIGENOUS PEOPLES: FILLING IN THE GAPS IN AUSTRALIA’S NATIONAL HEPATITIS B STRATEGY

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Introduction: Australia’s Indigenous peoples are disproportionately affected by hepatitis B virus (HBV) infection. The Australian National Hepatitis B Strategy outlines five priorities for developing a comprehensive approach to HBV including community action, prevention, screening, clinical management and support for people with chronic HBV. These five priority areas are used to frame a review of contemporary literature on HBV and Indigenous Australians.

Methods: Databases were searched for published articles over the past decade (2001 – March 2012). Snowballing was also used. Key search terms included combinations of the following: hepatitis B, Aboriginal, Torres Strait Islander, Indigenous, Australia and Australian.

Results: Several studies indicated high Indigenous infant vaccination coverage although adherence to schedule and reporting of Indigenous status could be improved. There was evidence of incomplete protection against HBV among adolescents despite full childhood vaccination and the need for catch-up programs and sexual and household contact tracing was noted. Most papers were related to screening among target sub-populations however there was little evidence of comprehensive screening programs at the national level or of patient education and follow-up. In terms of clinical management, national guidelines focused on specialist services appear to be of limited value in primary health care settings, particularly in remote areas. Some studies indicated a higher rate of liver cancer among Indigenous than non-Indigenous people, a difference attributed to higher prevalence of chronic HBV infection. Only two reports addressed partnership, community action and support systems in relation to HBV in Indigenous communities.

Conclusion: While there is evidence of successful universal infant vaccination and of screening in particular Indigenous target groups, there was relatively little literature available on HBV and Indigenous Australians. In terms of the five priority areas, gaps in the literature were identified in relation to community action and support, systematic screening of the Indigenous population and clinical guidelines.

Disclosure of Interest Statement: None

MINORITIES AND HEPATITIS C AMONG OPIATE ADDICTS TREATED IN A METHADONE MAINTENANCE CENTER IN ISRAEL

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Introduction: Hepatitis C virus (HCV) is highly prevalent among drug addicts. Methadone maintenance treatment (MMT) is the most effective treatment for opiate addicts (reducing opiate and other substance abuse reduces the incidence of HIV and HCV infection). Retention in treatment reflects good outcome, and the longer the retention, the more goals are being achieved. Our aim was to compare the HCV sera-positive and MMT outcome between different groups of minorities in MMT in Israel.
Methods: Out of all the 761 patients admitted to our MMT clinic between June/1993 and Dec/2011 we have the data on the HCV antibody and the minority status of 718 patients (94.3% of all 761 patients). Being Israel a Jewish state, minorities are defined usually by faith, which in our case included Christians and Muslims. Comparison was done using Chi square for categorical variables, and Kaplan Meier survival analyses for long term retention.

Results: HCV sera-positive was 407 (56.7%), and non-Jew minorities were 97 (13.5%). Minorities vs. non-minorities had significantly higher HCV sera-positive (69.1% vs. 54.8%, p=0.008), but did not differ in retention rate after one year (77.5% vs. 79.9%, p=0.6), in long term retention up to 18 years (mean 6y (95%CI 4.8-7.2) vs. 7.8y (95%CI 7.2-8.4, p=0.2), and in rate of opiate cessation after one year (75.4% vs. 66.5% p=0.2). The HCV sero-conversion incidence however was significantly higher among the 21 admitted HCV-sero negative minority patients (5.3/100 person years) than the 207 admitted HCV-sero-negative non-minority patients (1.7/100 person years, p=0.04).

Conclusion: Minorities and non-minorities presented similar good treatment outcome (high retention rate and opiate cessation). However, minority patients characterized with higher positive HCV on admission to the MMT, and also with higher HCV sero-conversion during treatment. A specific intensive intervention among the minority patients is needed.

Disclosure of Interest Statement: The work was fund by the Adelson family Foundation. The Authors have no conflict of interest

POSTER NUMBER: 70
PAPER NUMBER: 91

KNOWLEDGE, ATTITUDE, BELIEFS AND PRACTICES ABOUT HBV VACCINATION AND UNIVERSAL PRECAUTIONS IN HEALTHCARE WORKERS OF A TERTIARY CARE CENTRE IN INDIA

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Introduction: Healthcare Workers have a high risk of occupational exposure to many blood-borne diseases including HIV, Hepatitis B, and Hepatitis C viral infections and therefore Universal Precautions are very crucial for prevention of these infections. Also among these infections, Hepatitis B is not only most transmissible infection, but also the only one that is preventable by vaccination.

This study was conducted to assess awareness of healthcare workers of All India Institute of Medical Sciences regarding vaccination against Hepatitis B infection and their understanding of Universal Precautions. Their anti-HBs antibody titer was also measured whether protective or not.

Methods: After ethical clearance and written consent, 446 healthcare workers who were categorized in 7 groups according to their work nature, were explained about the study and asked to fill a questionnaire regarding their vaccination status and practice of Universal Precautions.

Results and Interpretation: About 56.5% HCWs were vaccinated and 79% of them had protective levels (>10 IU/mL) of anti HBs antibody titers. However, protective levels were also detected in 19.35% of unvaccinated HCWs as natural immunity. 31.4% HCWs had history of Needle prick injury and only about half of them (47.5%) reported it. Regarding Universal precautions, 84.5% HCWs use gloves regularly, 10.7% use sometimes while
only 4.7% HCWs have never used gloves. 38.9% of staff washed hands with disinfectant whereas rest with soap. 76.5% HCWs had knowledge of waste disposal and needle destruction while 67.6% had knowledge of proper management of blood spill.

**Conclusion:** There is need to educate our healthcare workers the importance of HBV vaccination and practicing Universal Precautions. In addition we need well planned and clear policies for healthcare workers about HBV screening, vaccination and serological response checkups including post-exposure management of needle pricket cases.

**Disclosure of Interest Statement:** There is no disclosure of interest.

**POSTER NUMBER: 71**
**PAPER NUMBER: 154**
**TESTING FOR HEPATITIS B: WILL THE NEW POLICY HAVE AN IMPACT?**

**Towell VL, Batey B**

Serological testing for hepatitis B has been available in Australia for over forty years, however currently in Australia it is estimated that over 38% of people living with hepatitis B remain undiagnosed.

The first hepatitis B testing policy is currently being written and will be complete in July 2012. The document provides advice on appropriate testing pathways using currently available technologies for all health professionals ordering and interpreting tests for hepatitis B.

This presentation will explore:

- the evidence for the need of this policy;
- the process of its development, including the issues that caused contention within the expert reference committee and during the public consultation process;
- the key points of the policy and their importance in terms of making an impact on the number of people who remain undiagnosed; and
- the issues surrounding implementation and expectation that the policy will make an impact.

The goal of the First National Hepatitis B Strategy 2010–2013 is to reduce the transmission of, and morbidity and mortality caused by, hepatitis B and to minimise the personal and social impact of hepatitis B. Correct testing resulting in timely diagnosis, following appropriate guidelines concerning informed consent and conveying a test result, can contribute to all of the points of that goal. Is a testing policy enough however, to ensure this happens?

**POSTER NUMBER: 72**
**PAPER NUMBER: 160**
**PRIMARY CARE BASED PROVISION OF HEPATITIS C TREATMENT: THE IMPORTANCE OF CONTEXT AND RESPECT**

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**Introduction:** Current reimbursed anti-hepatitis C virus (HCV) treatment provides a cure for 40-80% of Australians living with chronic hepatitis C (CHC). However, uptake is low. The National Hepatitis C Strategy 2010-2013 (NHCS) recommends increased provision of anti-HCV treatment by general practitioners (GPs) to achieve broader access. This study describes the barriers to and enablers of primary care based provision of anti-HCV treatment as perceived by GPs with particular interest in HCV.
**Methods:** Victorian GPs who undertook steps towards authorisation to prescribe HCV treatment in the community were invited to participate in this study. A semi-structured interview was conducted with participants and data on practice characteristics (population serviced, number of people living with HCV, access to specialists and mental health) was also collected.

**Results:** 9 GP participants working across 10 sites with significant numbers of people diagnosed with CHC (up to 875 people) offered insight into how a combination of case load, model of care, support available within the practice, and relationship with specialist services appeared to influence GPs’ willingness and ability to engage in the provision of anti-HCV treatment.

**Conclusion:** A high degree of consistency was observed in participants’ motives for both engaging in, and disengaging from, anti-HCV treatment provision. Addressing the needs identified by participants could increase access to anti-HCV therapy in the community, and so contribute to the implementation of the recommendations of the NHCS. To demonstrate how GP engagement and models of care could be influenced by the context in which GPs practice, the study findings will be related to General Practice Victoria’s experience in working with integrated hepatitis C services that recently commenced operation through Victoria.

**POSTER NUMBER: 73**
**PAPER NUMBER: 46**

**WHO KNOWS WHAT? – THE DEMOGRAPHICS THAT INFLUENCE KNOWLEDGE ABOUT VIRAL HEPATITIS C**

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**Background:** The number of patients diagnosed with Hepatitis C in New Zealand (NZ) has increased over the last decade but it is assumed that still a significant proportion in the population is unidentified. In order to minimise transmission and to recognise risk factors and symptoms, population-wide education is essential.

**Aim:** The aim of this questionnaire based study was to identify the target population benefitting most from an educational approach.

**Methods:** From the electoral role 1400 people between the ages of 40-59 and living in Dunedin were randomly identified. A questionnaire was developed relating to demographics, education, profession, risk profile, symptoms and treatment and posted to participants.

**Results:** 30.8% completed the questionnaires (54% female). Demographic characteristics were similar to data from the NZ Census (2004). On average, 59.4% of questions were answered correctly. Females answered 5.4% more questions correctly (p<0.01). Every level increase in qualification led to 5% more questions being answered correctly (p<0.000). There was a significant and linear association between knowledge about viral hepatitis and occupation (p<0.000) with health workers being the most knowledgeable compared to white collar workers, blue collar workers and the unemployed. Not known was the risk of sharing common household items (toothbrushes, razors). Most knew about fatigue, nausea, lack of appetite as symptoms, 93% did not know that HCV infection can be asymptomatic and 11% did not know about any long-term consequences. Over a quarter of the population did not know that treatment is available and only 40% assumed that it is funded.
**Conclusion:** Well educated women working in the health or white collar sector have the best knowledge about risk of transmission, symptoms and treatment. Educational efforts to minimise risk behaviour therefore needs to target the other groups. We conclude that the least knowledgeable and qualified are at highest risk for infection and transmission.

**POSTER NUMBER: 74  
PAPER NUMBER: 44**

**DEVELOPING A HEPATITIS PRIMARY CARE RESOURCE PACKAGE IN SHARED CARE**

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**Introduction:** Queensland Health implemented a model of specialist/general practitioner shared care management of people on hepatitis C antiviral therapy in 2006. Ten hospitals participated in this initial model. An information resource, “Hepatitis C Shared Care Resource Package” was developed by the HIV & HCV Education Projects, The University of QLD, funded by Queensland Health. The model and resource were externally evaluated by La Trobe University in 2009 and an updating of the resource package was recommended. This presentation details the process and outcome of the development of this package and summarises its use today. This project aimed to develop an accessible and relevant resource for General Practitioners who wished to provide ongoing care whilst their patients were undergoing a treatment regimen for hepatitis C.

**Methods:** The resource was developed by a multidisciplinary team of experts in hepatitis C. The package was developed for distribution by the Hepatology CNC at the liver clinic to general practitioners wishing to be involved in the initiative.

**Results:** During 2006-2008, the package was initially distributed in hard copy to 500 GPs through 10 liver clinics across Queensland. The package was renamed the “Hepatitis Primary Care Resource Package” in 2011 and became available both online and in hard copy. It has also been adjudicated as a clinical audit activity with the RACGP.

**Conclusion:** In QLD there are currently no s100 Hepatitis C community prescribers. It is hoped this revised package and supporting website version as well as assisting general practitioners in the diagnosis and management of hepatitis C positive patients will enable some practitioners to become s100 community prescribers.
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