Burnet Institute
Medical Research. Practical Action.

Hepatitis C Elimination

ELIMINATE HEP C

The Road to Hepatitis C Elimination

Globally, there are an estimated 130-150 million infections and each year half a million deaths are caused from hepatitis C. Only 50 per cent of those infected with hepatitis C are aware of their infection status, so the prevalence and incidence is likely to be underestimated. Currently there is no vaccine to prevent infection.

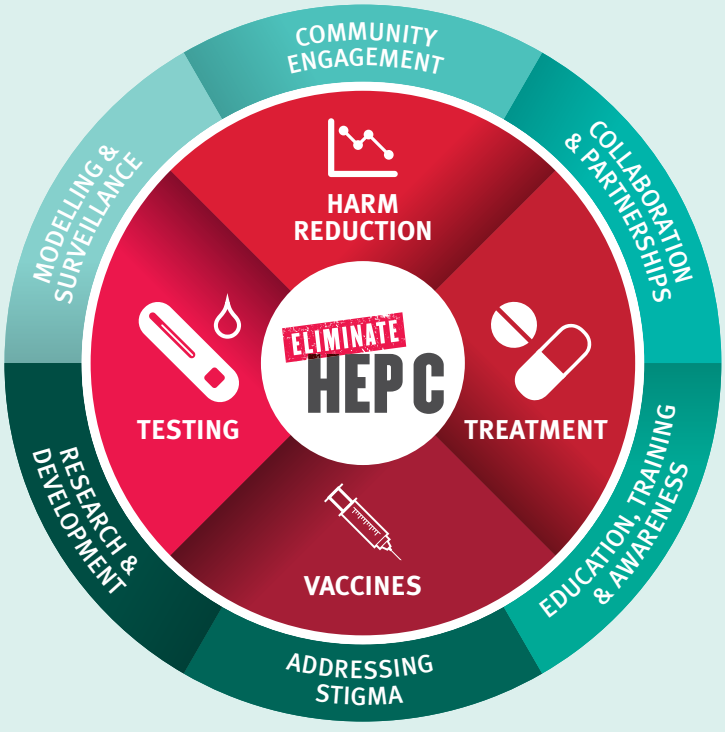
An estimated 230,000 Australians are living with chronic hepatitis resulting in more than 600 deaths from liver cancer and liver failure each year. Deaths due to hepatitis C continue to increase, making it one of Australia's major public health issues. Currently only one to two per cent of Australians infected with the virus access treatment and there are an estimated 6,000 to 10,000 new infections annually. As a result, the number of hepatitis C infected people is estimated to triple by 2030.

Australia's and the global response to hepatitis C requires the dual approach of preventing new infections and stopping hepatitis C-related deaths, and it is now a recognised health priority. Key to successfully halting transmission in Australia requires treating people who inject drugs, a highly marginalised population. If hepatitis C treatment can be delivered effectively to this group then significant reduction in future cases is possible. Elimination of a public health threat becomes a genuine possibility within a generation.

The World Health Organization has proposed a set of global elimination targets, including an 80 per cent reduction in hepatitis C incidence [new infections] and a 65 per cent reduction of hepatitis C-related deaths by 2030 compared with 2010.

Burnet Institute's Eliminate Hep C strategy addresses that important global call and builds upon groundbreaking basic biomedical research, modelling and analysis, which has demonstrated both the feasibility and public health benefit of eliminating hepatitis C.

THE WAY FORWARD: FOUR PILLARS OF ELIMINATION

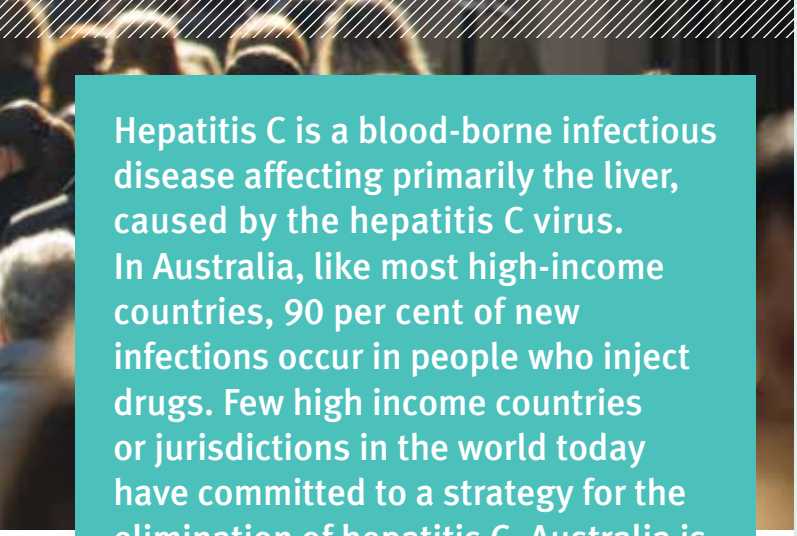


Elimination will require four 'pillars' of intervention, namely harm reduction, vaccines, testing and treatment strategies. Cross cutting these interventions will also be awareness raising, education and training, reducing stigma, and strengthened surveillance.

Burnet will be working with the Victorian Government, particularly the Department of Health and Human Services, and the Department of Justice, to establish an elimination program. This will involve a community-based treatment program using nurse-led models of care in the community and the prison system; assessing the feasibility of sufficiently scaling-up treatment; measuring impact; and using results to inform hepatitis C elimination models in Australia and globally.

Of course, treatment must be supported by important existing interventions such as opioid substitution therapy and needle-syringe programs, which have already been shown to help reduce transmission and other harms. Importantly, a preventative vaccine will provide significant additional benefit towards elimination and allow elimination targets to be reached more rapidly and cost-effectively. A preventative vaccine will be essential for a global hepatitis C elimination program.

With Victorian Government support, we have developed an innovative surveillance program to enable us to evaluate the impact of the elimination program.



Hepatitis C is a blood-borne infectious disease affecting primarily the liver, caused by the hepatitis C virus. In Australia, like most high-income countries, 90 per cent of new infections occur in people who inject drugs. Few high income countries or jurisdictions in the world today have committed to a strategy for the elimination of hepatitis C. Australia is embarking on this ambitious journey.

THE GAME CHANGER

Traditional therapies for hepatitis C have been burdened by significant side effects, need for injections, limited cure rates, and long treatment duration. The recent availability of oral, direct-acting antiviral drugs (DAAs) will transform the care of individuals and the pathway to elimination. The DAAs, taken daily, are well-tolerated, highly effective and of relatively short duration.

In Victoria, a relatively small number of people who inject drugs need to be treated each year in order to halve the prevalence of hepatitis C within 15 years. To achieve this important goal there needs to be a rapid and sustained scale-up of current treatment rates.

TOWARDS GLOBAL HEPATITIS C ELIMINATION

HepSeeVax
PREVENTING HEPATITIS C

Burnet has developed a hepatitis C vaccine that is in late preclinical development (HepSeeVaxDelta3™). The vaccine was discovered by researchers at Burnet Institute and has the potential to provide protection against all circulating strains of HCV and may be used to prevent first time-HCV infection, or prevent re-infection by HCV after successful DAA therapy. Our studies have shown that a vaccine can accelerate HCV elimination and reduce the cost of reaching elimination targets by reducing the number of treatments required.

The **Diagnostic Development Laboratory** is developing point-of-care tests for markers of liver disease and hepatitis C that will enable those with hepatitis to be diagnosed rapidly and cheaply.

The **Institute's work in Myanmar** includes a one-stop service and outreach model for people who inject drugs. It provides a comprehensive package of services at drop-in centres, including hepatitis C screening and interventions through peer education, mobile medical services and counselling.

Work in infectious disease epidemic modelling **(the 'Optima' model)** allows for optimal resource allocation to meet strategic objectives, such as how to best use available public health resources and the available infrastructure to minimise new infections or associated deaths.

BURNET INSTITUTE'S PROGRAMS

TAP STUDY

The Treatment as Prevention (TAP) study is examining the feasibility of treating people who inject drugs in a community-based setting and measuring the effectiveness of using a social network-based approach.

PRIME STUDY

The Prime study is a randomised study comparing hepatitis C treatment in a primary health care service with a hospital setting.

co-EC STUDY

The co-EC study aims to test, treat and cure gay and bisexual men who are infected with both hepatitis C and HIV, and measure the impact on hepatitis C infection and re-infection.

EC STUDY

The EC study involves the establishment of nurse-led hepatitis C treatment programs in community settings to increase treatment uptake among people who inject drugs.

ACCESS

The Australian Collaboration for Coordinated Enhanced Sentinel Surveillance (ACCESS) is the only system in Australia capable of capturing clinical and laboratory data on HCV testing, providing the ability to measure the population-level impact of treating HCV infection. The ACCESS system was designed and is operated by Burnet Institute and is now funded for expansion nationally.

ABOUT BURNET INSTITUTE

Burnet Institute is an Australian, unaligned, independent, not-for-profit organisation that links discovery-based research with innovative public health action to address complex health issues affecting disadvantaged or otherwise vulnerable people in the world.

Burnet Institute is internationally renowned for its expertise in infectious diseases and public health issues that are of major global significance. Cross-centre collaborations aim to achieve advances in treatment, vaccines, diagnostic tests and prevention strategies to address diseases such as hepatitis, tuberculosis, HIV and malaria and apply the best available evidence to inform development of community-level public health programs.

We are passionate in our commitment to working and growing together to create a healthier world. We value excellence, innovation and social justice, and share a desire to extend the boundaries of knowledge and understanding.

While based in Melbourne, Burnet has offices or representatives in Myanmar (Burma), Papua New Guinea, China and Lao PDR, and is involved in a range of research and public health activities in other Asian, Pacific and African countries.

Head Office
85 Commercial Road
Melbourne, Victoria, 3004

Tel: +61 3 9282 2111
Fax: +61 3 9282 2100
Email: info@burnet.edu.au

burnet.edu.au

hepchelp.org.au

/burnetinstitute
@BurnetInstitute
Burnet Institute
/burnetinstitute

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