



Burnet Institute
Medical Research. Practical Action.

Hepatitis C Elimination



Preventing Disease,
Preventing Deaths

ELIMINATE HEP C



The Road to Hepatitis C Elimination

Globally, there are an estimated 70 million infections and each year half a million deaths are attributable to hepatitis C. Many people infected with hepatitis C are unaware of their infection status leading to delayed diagnosis and people missing out on highly effective curative treatment. Currently there is no vaccine to prevent infection.

An estimated 180,000 Australians live with chronic hepatitis C resulting in more than 600 deaths from liver cancer and liver failure each year, making it one of Australia's major public health issues. Highly effective curative treatments called direct-acting antivirals (DAAs) became available in Australia in March 2016. Over 50,000 Australians are estimated to have been cured with these new treatments. However much work needs to be done if Australia is to stop new infections and deaths due to hepatitis C.

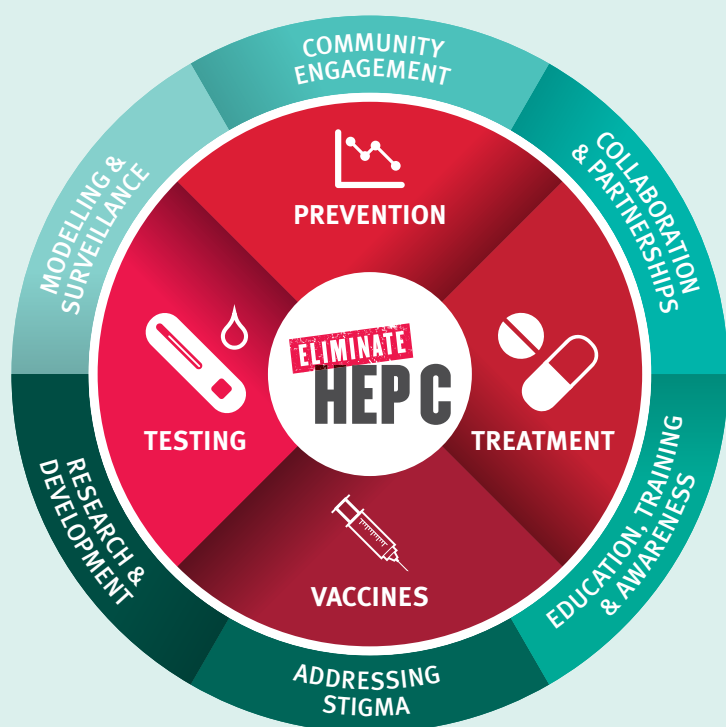
The World Health Organization set global targets to eliminate hepatitis C as a public health threat including an 80 per cent reduction in new hepatitis C infections and a 65 per cent

reduction of hepatitis C-related deaths by 2030 compared with 2010.

Burnet Institute's Eliminate Hep C strategy addresses this 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.

Achieving the hepatitis C targets requires a multipronged approach of preventing new infections, ensuring people are tested and treated for their infection, as well as many countries will need a hepatitis C vaccine to achieve the elimination targets. 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 WAY FORWARD: FOUR PILLARS OF ELIMINATION



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

Burnet is working in partnership with the Victorian Government, particularly the Department of Health and Human Services, and the Department of Justice, Hepatitis Victoria, and Harm Reduction Victoria to establish an elimination program. This involves health promotion, education, community-based treatment including nurse-led models of care in the community and the prison system; and implementation science, research and surveillance. The aim is to scale-up hepatitis C testing and treatment to meet Victoria's elimination targets and 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

In March 2016 direct-acting antiviral drugs (DAAs) became available to all Australians with chronic hepatitis C infection through the **Pharmaceutical Benefits Scheme**. DAAs are highly effective with over 95 per cent cure rates, are well-tolerated, and of relatively short duration. Australia is leading the world in hepatitis C elimination because unlike many countries globally no restrictions were placed on who could be treated, including people who inject drugs and prisoners, and treatment can be provided by general practitioners. Since becoming available over 50,000 Australians have been cured. If Australia can maintain high levels of hepatitis C testing and treatment, as well as high quality prevention and harm reduction programs, it will be one of the first countries globally to achieve hepatitis C elimination.

TOWARDS GLOBAL HEPATITIS C ELIMINATION



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 starting a new highly innovative community test and treatment program (CT2 study). Working in collaboration with the Myanmar Government, FIND and community partners, it will treat people in the community including people who inject drugs and people who are coinfectd with HIV and hepatitis C.

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

EC PARTNERSHIP

The **Eliminate C Partnership** involves the establishment of community-based testing and treatment programs to increase treatment uptake among people who inject drugs. The EC Partnership brings together health services, government, community organisations and industry to strengthen systems for hepatitis elimination.

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.

ACCESS

The Australian Collaboration for Coordinated Enhanced Sentinel Surveillance (**ACCESS**) is the only system in Australia capable of capturing clinical and laboratory data on hepatitis C testing and treatment uptake. Undertaken in collaboration with the Kirby Institute ACCESS is funded by the Federal Department of Health to monitor Australia's elimination response.





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.

Our mission is to achieve better health for vulnerable communities in Australia and internationally by accelerating the translation of research, discovery and evidence into sustainable health solutions.

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

Burnet has offices or representatives in Australia, Papua New Guinea, Myanmar, China and Lao PDR and also contributes to activities in other, Asian, Pacific and African countries.

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