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1. Introduction

Australia is still in the early stages of establishing a strong response to hepatitis B. This is the second national hepatitis B strategy and looks to build on the achievements of the first strategy.

Hepatitis B is a serious blood borne virus. It is a potentially life-threatening liver infection caused by the hepatitis B virus and transmitted through contact with the blood or other body fluids of an infected person. While many people clear the virus, in others it can cause chronic liver disease and chronic infection and puts people at high risk of death from cirrhosis of the liver and liver cancer.

The World Health Organization (WHO) has declared that the world is facing a silent epidemic of viral hepatitis (hepatitis B and C) with up to 500 million people affected worldwide (1).

Liver cancer is the fastest increasing cause in cancer death of Australians (2). The high proportion of people who have undiagnosed and untreated hepatitis B is contributing significantly to the rising number of liver cancer deaths. The burden of hepatitis B virus infection in Australia is increasing with over 218,000 people estimated to be living with chronic hepatitis B (3).

Most people living with chronic hepatitis B were infected at birth or in early childhood, when the risk of progression to chronic infection is high. People born overseas in areas endemic for hepatitis B, including the Asia-Pacific region and Africa, together with Aboriginal and Torres Strait Islander people, are estimated to represent approximately two thirds of those living with chronic hepatitis B in Australia (3).

Australia’s first line of defence against hepatitis B is our universal infant vaccination program which started in 2000. Over time, this will go far to reduce the high risk of progression to chronic infection following infection at birth. The program has been highly successful, with coverage of infant vaccination since 2000 remaining higher than 90 per cent. New infections among those eligible for childhood and adolescent vaccination have been declining (4). Other actions we have taken are interventions to improve infection control and ensuring the safety of the blood supply.

Australia’s First National Hepatitis B Strategy 2010-2013 aimed to reduce the transmission of, and the morbidity and mortality associated with, hepatitis B and to minimise the personal and social impact. This Strategy focused on building partnerships and strengthening community action, preventing transmission and optimising diagnosis, screening and clinical management.

In partnership with state and territory governments and community organisations, models of care have been developed to assist health care professionals to conduct appropriate follow-up tests, assessments, referrals and management. A National Hepatitis B Testing Policy has been also developed and targeted awareness campaigns have been implemented for some priority populations.

Despite the progress made under the First Hepatitis B Strategy, we need to do a lot more to address the high rate of unidentified chronic infection in Australia. It is
estimated that 45% of people living with chronic hepatitis B remain undiagnosed, resulting in poor health outcomes and risk of transmission (2).

Priority actions include reducing the high rate of unidentified chronic infection by improving access to testing. We also need to expand monitoring and antiviral therapy to turn around the increasing incidence of poor outcomes including primary liver cancer and liver failure. Australia’s vaccination program for hepatitis B will continue to play an essential role in preventing newly acquired infections in the longer term. Promoting comprehensive and inclusive activities to link and involve those communities most affected by hepatitis B is also essential to improve health outcomes and reduce avoidable deaths. Continuing education for health care professionals will sustainably develop a workforce to deliver services for people living with chronic hepatitis B.

The hepatitis B Strategy aligns with the Auckland Statement on viral hepatitis 2012, which aims to focus attention on viral hepatitis as an urgent health concern that needs immediate action to prevent new infections and stop the rising death toll from cirrhosis and liver cancer.
2. Hepatitis B in Australia

Hepatitis B is a vaccine-preventable disease, however chronic hepatitis B associated mortality and morbidity contributes to a high public health burden in Australia. This burden is not evenly distributed among the Australian population, disproportionately affecting marginalised populations such as migrant communities with origins in Asia, the Pacific and Africa; people of Aboriginal and Torres Strait Islander background; individuals with a history of injecting drug use; and men who have sex with men (5).

Hepatitis B vaccine is included in Australia’s National Immunisation Program as part of routine childhood immunisation. Coverage of infant vaccination since 2000 has remained higher than 90 per cent and incident hepatitis B infections among those eligible for childhood and adolescent vaccination has been declining (4). A catch up program provided for adolescents aged between 10-13 years is scheduled to be completed in all states and territories in 2014.

In Aboriginal and Torres Strait Islander children, vaccination coverage at 2 years of age is similar to non-Indigenous children (94%), but lacks timeliness with only about 85% vaccinated at 1 year of age compared to 92. In adults of priority populations, vaccination coverage remains relatively low; however systematic estimates are not readily available.

The successful infant, child and adolescent vaccination programme in Australia has significantly contributed to Australia being assessed as meeting the WHO regional hepatitis B control target in 2013 of a prevalence of hepatitis B infection of less than 1% among children under 5 years of age.

Overall, the number and rate of diagnosis of newly acquired hepatitis B infection has steadily declined over the last 5 years, from 262 new diagnoses and a rate of 1.2 per 100,000 population in 2008 to 193 new diagnoses and a rate of 0.8 per 100,000 population in 2012 (4). More than 80% of these occur in those aged over 25 years and around 70% in those born overseas (4).

It is estimated that approximately 207,000 people were living with hepatitis B infection in Australia in 2012, an overall prevalence of 1.0% (4). Nearly half of those with chronic hepatitis B remain undiagnosed (3), and are hence unaware of their infection.

Prevalence is higher in certain populations, including people born overseas in endemic areas, particularly in Asia-Pacific and Sub-Saharan Africa (6), Aboriginal and Torres Strait Islander people (7) people who inject drugs (4) and men who have sex with men (8). Of these groups, approximately two thirds of Australians living with chronic hepatitis B were either born overseas or are Aboriginal and Torres Strait Islander people (3).

The burden of disease caused by the hepatitis B virus, including liver cirrhosis, cancer and potential need for transplant, continues to rise. By 2010, liver cancer had become the 9th most common cause of cancer death in Australians, increasing faster than any other cause of cancer related mortality (2,9). It has been estimated that between 2011 and 2020, annual liver cancer incidence in Australia will increase from 1520 to 2465 cases (11), with a substantial proportion of these cancers being attributable to hepatitis B (7, 8). Chronic hepatitis B infection was estimated to be the underlying cause of liver disease in 5.6% of liver transplants in 2012 (4).
3. Achievements

2010 to 2013

- Increase in hepatitis B vaccination coverage for Aboriginal and Torres Strait Islander children across all jurisdictions, with approximately 94% of children aged 2 years immunised against hepatitis B between 2011 and 2012
- Development of a National Hepatitis B Testing Policy
- Removal of liver biopsy as a pre-requisite for subsidised treatment
- Development of education curriculum and resources for primary care providers, a program in some jurisdictions for s100 community prescribing for the maintenance and treatment of hepatitis B and patient information on hepatitis B
- Australia being assessed as meeting the WHO regional hepatitis B control target of <1% prevalence among children less than 5 years of age
- Hepatitis B mapping project to develop estimates of chronic hepatitis B prevalence and cultural and linguistic diversity at the local level to help inform awareness and intervention campaigns to suit the particular local needs of people living with chronic hepatitis B infection and those providing services to them. (5)
4. Measuring progress

4.1 Goals

The goals of the Second National Hepatitis B Strategy 2014–2017 are to reduce the transmission of, and morbidity and mortality caused by, hepatitis B and to minimise the personal and social impact of Australians living with hepatitis B.

4.2 Objectives

The Second National Hepatitis B Strategy has the following six objectives which, in combination, are designed to support achieving the above goal:

1. Reduce hepatitis B infections
2. Achieve and maintain high levels of hepatitis B vaccination
3. Increase the proportion of people with chronic hepatitis B who have been diagnosed
4. Increase access to appropriate management and care for people with chronic hepatitis B
5. Reduce the burden of disease attributed to chronic hepatitis B
6. Eliminate the negative impact of stigma, discrimination, legal and human rights issues on people’s health.

4.3 Targets

Targets are included for the first time in the Second National Hepatitis B Strategy. These aspirational targets provide a specific focus for the efforts of all partners in moving towards achieving the above objectives and overall goal. These targets are an initial step, and will be reviewed and updated as necessary. The targets are, by 2017, to:

1. Achieve 95% HBV childhood vaccination coverage
2. Increase hepatitis B vaccination coverage of priority populations
3. Increase to 80%, the proportion of all people living with chronic hepatitis B who are diagnosed
4. Increase to 15% the proportion of people living with chronic hepatitis B who are receiving antiviral treatment.

Vaccination remains the key prevention activity for hepatitis B. Achieving a national 95% HBV vaccination coverage in infants aligns with the National Immunisation Strategy 2013-2018, where improving immunisation coverage is the first strategic priority. While coverage for infants is consistently above 90%, there are significant gains to be had in improved timeliness and coverage in high risk population groups. Improvements in vaccination among adults at higher risk of infection are important to reducing transmission.

It is estimated that only 55% living with chronic hepatitis B are currently diagnosed. Expert opinion is that increasing the proportion diagnosed to 80% would significantly contribute to opportunities to reduce hepatitis B associated morbidity and mortality, and reducing transmission.

Approximately 2%, or 4,100, of the 207,000 people estimated to have chronic hepatitis B were on treatment in 2011 (4). While there is limited information on the
proportion of people living with chronic hepatitis B that are eligible for treatment, Australian and international estimates range from 10-25%. The target of 15%, which equates to about 31,000 people on treatment, will see significant benefits in achieving the goal.

### 4.4 Indicators

Indicators will be used to monitor the implementation of the strategy, to report against the progress against achieving the above targets and objectives, and therefore to inform changes in the response as required.

The indicators listed below can currently be reported on. There are limitations in the ability to measure progress against many of the objectives and targets, both in the quality of the available indicators and in some cases a complete lack of available data or appropriate methodology. This is discussed further in the surveillance and monitoring section 7.6.

<table>
<thead>
<tr>
<th>Objective</th>
<th>Indicator</th>
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<tbody>
<tr>
<td>Reduce hepatitis B infections</td>
<td>Annual rate of notifications of newly acquired hepatitis B</td>
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<tr>
<td></td>
<td>Annual rate of notifications of unspecified hepatitis B</td>
</tr>
<tr>
<td></td>
<td>Prevalence of hepatitis B in pregnant women, by country of birth and Aboriginal and Torres Strait Islander status.</td>
</tr>
<tr>
<td>Achieve and maintain high levels of hepatitis B vaccination</td>
<td>Coverage of hepatitis B vaccination at 12 and 24 months (Target 1)</td>
</tr>
<tr>
<td>Increase the proportion of people with chronic hepatitis B who have been diagnosed</td>
<td>Estimated proportion of people with chronic hepatitis B who have not been diagnosed (Target 3)</td>
</tr>
<tr>
<td>Increase access to appropriate management and care for people with chronic hepatitis B</td>
<td>Proportion of people with chronic hepatitis B dispensed drugs for hepatitis B infection through the Highly Specialised Drugs Program (Target 4)</td>
</tr>
<tr>
<td>Reduce burden of disease attributed to chronic hepatitis B</td>
<td></td>
</tr>
<tr>
<td>Eliminate the negative impact of stigma, discrimination, legal and human rights issues on people’s health</td>
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</table>

There are no indicators currently available to measure progress in reducing the disease burden attributable to chronic hepatitis B or the health impact of stigma, discrimination, legal and human rights. There is also no specific national indicator available to report against target 2 (vaccination in priority populations). Furthermore,
to improve reporting against many of the objectives and targets, improvements are needed in the overall quality of many of these indicators. These important gaps are discussed further in section 7.6.

4.5 Implementation and Evaluation

The Second National Hepatitis B Strategy 2014–2017 sets high level directions for action over the next four years. An Implementation and Evaluation Plan will be developed in consultation with partners and will detail how priority actions will be implemented, including roles and responsibilities, timeframes and lines of accountability.

Australia’s world recognised partnership approach will remain central to our response to blood borne viruses and sexually transmissible infections. Undertaking the actions set out in this strategy by December 2017 requires Australian, state and territory governments; community organisations; service delivery organisations; professional bodies; and, research institutions to work together. In doing this, we need to ensure that infected and affected individuals and communities remain at the heart of our response and involved in activities as they are proposed, developed and implemented.

This strategy builds on its predecessor, which have guided Australia’s response to hepatitis B between 1989 and 2013. It is one of five interrelated national strategies aiming to reduce the transmission and impact of BBVs and STIs. The other strategies are the:

- Seventh National HIV Strategy
- Fourth National Hepatitis C Virus Strategy
- Fourth National Aboriginal and Torres Strait Islander Blood Borne Viruses and Sexually Transmissible Infections Strategy.
- Third National Sexually Transmissible Infections Strategy

The five national strategies share common structural elements, designed to support a coordinated effort in addressing common concerns. Much of the prevention, health care and community responses contained in the strategies are intrinsically linked through co-infections, commonalities in risk factors and shared responsibility for the clinical management of BBVs and STIs.
5. Guiding principles underpinning Australia’s response

Rights: People with BBVs and STIs have a right to participate fully in society, without experience of stigma or discrimination. They have the same rights to comprehensive and appropriate information and health care as other members of the community, including the right to the confidential and sensitive handling of personal and medical information.

Access and Equity: Health and community care in Australia should be accessible to all based on need. The multiple dimensions of inequality should be addressed, whether related to geographic location, gender, sexuality, drug use, occupation, socioeconomic status, migration status, language, religion or culture. Special attention needs to be given to working with Aboriginal and Torres Strait Islander peoples to close the gap between Aboriginal and Torres Strait Islander health status and that of other Australians (L).

Health promotion: The principles of health promotion, as outlined in the Ottawa Charter, facilitate concrete and effective community action in setting priorities, making decisions, and planning, implementing, and evaluating strategies to achieve better health; a focus on the determinants of health, the inequitable distribution of health risks and the importance of intersectoral partnerships to address these; and the formulation and application of law and public policy that promotes confidence in the system and secures support for initiatives.

Prevention: The transmission of hepatitis B is preventable through the appropriate use of combinations of evidence-based approaches. All prevention efforts are underpinned by targeted and culturally appropriate health promotion activities. Vaccination is the most effective means of preventing the transmission of hepatitis B.

Harm reduction: Harm reduction approaches underpin effective measures to prevent transmission of hepatitis B, including needle and syringe programs and drug treatment programs.

Shared responsibility: Individuals and communities share responsibility to prevent themselves and others from becoming infected, and to inform efforts that address education and support needs. Governments and civil society organisations have a responsibility to provide the necessary information, resources and supportive environments for prevention.

Commitment to evidence-based policy and programs: The national response to BBVs and STIs has at its foundation an evidence base for built on high quality research and surveillance, monitoring and evaluation. A strong and constantly refining evidence base is essential to meet new challenges and evaluate current and new interventions and effective social policy.

Partnership: An effective partnership between affected communities, government, researchers and health professionals is characterised by consultation, cooperative effort, respectful dialogue, resourcing and action to achieve the Strategy’s goal. It includes leadership from the Australian Government, and the full cooperative efforts of all members of the partnership to implement the Strategy’s agreed directions.
6. Priority populations

Hepatitis B is an issue for the whole of Australian society, however targeting responses to priority populations is critical to maximise the impact and sustainability of our response. The priority populations for this strategy reflect Australia’s epidemiological data and social context. Individuals may be members of more than one priority population.

Priority populations identified in this strategy are:

- People from culturally and linguistically diverse backgrounds, particularly people with an Asian-Pacific or Sub-Saharan African background
- Aboriginal and Torres Strait Islander peoples
- Children born to mothers with chronic hepatitis B and children with chronic hepatitis B
- Unvaccinated adults at higher risk of infection, including:
  - men who have sex with men
  - sex workers
  - people who inject drugs
  - partners and other household and intimate contacts of people who acute or chronic hepatitis B infection
  - people in custodial settings
  - people with HIV or hepatitis C or both.

The Appendix outlines the key reasons for priority population status and identifies specific subpopulations of higher prevalence and/or higher risk. It also notes the main barriers and facilitators to effective responses, specific to priority populations.
7. Priority areas for action

Hepatitis B is vaccine preventable, and prevention activities are an essential element of our response. Actions will focus on continuing to prevent new cases of acute hepatitis B through vaccination, as well as minimising the adverse health outcomes for people living with chronic hepatitis B.

An increase in testing in priority populations is essential to reducing the morbidity and mortality associated with chronic hepatitis B infection. This is important in reducing the extent of undiagnosed infection and linking people to monitoring and treatment programs. High quality surveillance, monitoring, research and evaluation will inform our knowledge of hepatitis B and guide the most effective response in the Australian context.

The goal of chronic hepatitis B management is to improve quality of life and survival by preventing the progression of liver disease. All people with chronic hepatitis B require lifelong regular monitoring to guide decisions regarding antiviral treatment and to detect progressive liver disease and complications of infection including liver cancer.

Similarly to HIV and hepatitis C, the management of chronic hepatitis B requires a shift in focus from tertiary care to community and primary care settings. This could also include an exploration of alternative arrangements for care, including possible roles for nurse practitioners or integrated primary and tertiary nursing models. Strengthening the capacity of health care and community services to respond effectively to hepatitis B will be central to reducing the burden of chronic hepatitis B in Australia.

Stigma and discrimination have been adverse responses to many blood borne viral infections. More evidence is required regarding the impact of stigma and discrimination in relation to hepatitis B, which should be addressed to enable a nationally coordinated response.

7.1 Prevention

<table>
<thead>
<tr>
<th>Priority actions</th>
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<tbody>
<tr>
<td>Increase hepatitis B vaccination rates in children</td>
</tr>
<tr>
<td>Increase the uptake of hepatitis B vaccination among priority populations</td>
</tr>
<tr>
<td>Build knowledge and skills in priority populations, health care professionals, policy makers and the general community around hepatitis B transmission risks and the availability of a vaccine</td>
</tr>
<tr>
<td>Maintain and increase safe sexual and safe injecting practices in priority populations</td>
</tr>
<tr>
<td>Strengthen monitoring and appropriate care of pregnant women with chronic hepatitis B and children born to these mothers, and support the development of nationally consistent protocols to support best practice</td>
</tr>
</tbody>
</table>
Nationally funded hepatitis B vaccination for children is implemented under the National Immunisation Program Schedule. The Schedule includes a course of four vaccinations, commencing with a birth dose. Coverage rates for hepatitis B vaccine are good overall; however challenges remain in the rate of timely vaccination for Aboriginal and Torres Strait Islander children (at 1 year of age) and in the reporting of the birth dose.

In 2011, the coverage rates for hepatitis B vaccination for Aboriginal and Torres Strait Islander children at 1 year of age was 85.05%, compared to 91.93% for non-Indigenous children. Coverage rates for both indigenous and non-indigenous children are above 94% at 2 years of age.

Although coverage of the three dose primary vaccination schedule (2, 4, and 6 months) is high (over 85%) and assessed via the Australian Childhood Immunisation Register (8), coverage of the birth dose is not systematically reported and information regarding timely receipt of the birth dose (within 24 hours of birth) is limited in Australia. Surveillance and evaluation of birth dose information across Australia would better inform the coverage rates and indicate whether further work to improve uptake is needed.

The vaccine prevents new infections, which is particularly important in newborns and children, as the risk of developing chronic hepatitis B following infection is greater the younger the age at infection. Up to 90% of infants and 30% of children will develop chronic hepatitis B after exposure to infection, compared to 5% in adults (12). As such, vaccination remains central to prevention efforts for the long term management of hepatitis B in Australia.

Key action areas of the National Immunisation Strategy 2013-2018 include increasing immunisation coverage for priority populations and ensuring equity of access to immunisation services, including Aboriginal and Torres Strait Islander peoples. Also, under the National Partnership Agreement on Essential Vaccines, states and territories have agreed to maintain or improve vaccination coverage for Aboriginal and Torres Strait Islander peoples.

The Australian Immunisation Handbook (13) recommends opportunistic testing of priority populations followed by vaccination for those who remain susceptible, however evidence suggests the uptake of vaccination among priority populations at higher risk of infection remains suboptimal (14,15,16,17,18,19).

Priority populations that have low levels of vaccination include Aboriginal and Torres Strait Islander people (14), other men who have sex with men (15), people living with HIV (16), people who inject drugs (17), people serving custodial sentences (18), and household contacts of people diagnosed with chronic hepatitis B, including those from culturally and linguistically diverse backgrounds (19).

Unsafe injective practices account for at least 50% of new hepatitis B infections, and approximately 5% of adults infected with hepatitis B will go on to develop chronic hepatitis B. Hepatitis B vaccination and uptake rates among people who inject drugs are strongly correlated to service models and how and when information and access to vaccination is provided (20).

Factors such as low awareness of transmission risks and the availability of the vaccine, including confusion between the different hepatitis viruses (21), have been identified as barriers to vaccination. As the burden of hepatitis B can be identified by
geographic area and by population group, prevention activities should also be targeted to local health areas where priority populations at higher risk of hepatitis B are located.

Better awareness about vaccination would enable effective promotion through education and awareness to priority populations, through integrated safe sex programs, and safe injecting health promotion and education programs.

In Australia, systematic testing for, and identification of, hepatitis B during antenatal care is done well. Reducing transmission to the newborn could be strengthened through improved maternal care including improved provision of appropriate information to pregnant women about their own care, appropriate access to management and treatment, and the development and implementation of nationally consistent best practice protocols.

7.2 Testing

<table>
<thead>
<tr>
<th>Priority actions</th>
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<tbody>
<tr>
<td>Increase testing in priority populations to decrease the undiagnosed proportion of people living with chronic hepatitis B</td>
</tr>
<tr>
<td>Improve health literacy in priority populations to increase their awareness of chronic hepatitis B and the importance of testing</td>
</tr>
<tr>
<td>Promote the use of the National Hepatitis B Testing Policy among health care professionals who work with priority populations</td>
</tr>
<tr>
<td>Develop a model of care that supports health care professionals who diagnose chronic hepatitis B to conduct appropriate follow-up testing, assessment, management and referral</td>
</tr>
<tr>
<td>Develop a national protocol for the public health management of hepatitis B</td>
</tr>
</tbody>
</table>

It is estimated that 45% of people living with chronic hepatitis B have not been diagnosed (3). Late diagnosis leads to ongoing transmission and poor health outcomes, as opportunities to prevent progression to advanced liver disease and cancer are missed. Improvements in testing in priority populations are needed to identify undiagnosed infection and provide appropriate monitoring and treatment to maximise health outcomes.

There are multiple barriers to accessing appropriate testing for hepatitis B often experienced by communities most affected by chronic hepatitis B in Australia. These include highly disrupted lives and limited access to health care services in their country of origin, cultural and language differences, and variable levels of education and health literacy (21). Improving testing rates among priority populations requires specific targeted culturally appropriate education and awareness initiatives.

The National Hepatitis B Testing Policy (22) provides evidence-based recommendations for whom to test, how to test, and the interpretation of pathology results. The Policy and other relevant resources should be promoted among health care professionals to ensure nationally consistent testing, pathology reporting and follow-up procedures. Testing strategies and models will need to be reviewed and
updated to allow new testing technologies, such as rapid testing, to be included as they become available.

Chronic hepatitis B is a dynamic disease and people require lifelong regular monitoring. Primary care services, particularly those working in high prevalence areas, and community organisations providing support and advice to priority populations will continue to play an increasingly important role in hepatitis B testing and monitoring. Programs to improve testing need to recognise the value of these organisations and services, and work to integrate opportunistic testing into current activities.

Education and appropriate support of the workforce is required to ensure knowledge and competency remains current. The renewed focus in Australia on responding to local health priorities can be harnessed to target clinical education and public health programs to address hepatitis B where the burden is greatest, in areas where there is a higher proportion of residents from priority populations (5).

Increased testing in priority populations will lead to an increase in the identification of people with hepatitis B. The information and support needs of people who are newly diagnosed must be discussed and met to assist them to manage their hepatitis B over their lifetime, in partnership with health care providers.

To maximise opportunities for increasing the number of people living with hepatitis B diagnosed, the public health response should include appropriate testing and vaccinating of household contacts and sexual partners, and the provision of information to reduce the risk of ongoing transmission. (19). A national protocol on the public health response to hepatitis B, which addresses the important role of primary care, is needed to improve national consistency.

7.3 Management, Care and Support

<table>
<thead>
<tr>
<th>Priority actions</th>
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<tbody>
<tr>
<td>Increase the number of people living with chronic hepatitis B infection receiving appropriate management</td>
</tr>
<tr>
<td>Improve awareness among priority populations of the long term consequences of chronic hepatitis B and availability of appropriate management and treatment</td>
</tr>
<tr>
<td>Work towards improving access to hepatitis B medications, through GP prescribing and community dispensing</td>
</tr>
<tr>
<td>Examine strategies to encourage the development and implementation of models of care that increase involvement of primary care practitioners</td>
</tr>
<tr>
<td>Explore tools to improve continuity of care</td>
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</tbody>
</table>

7.3.1 Management

All people with chronic hepatitis B require lifelong regular monitoring to guide decisions regarding antiviral treatment and to detect progressive liver disease and complications of infection including liver cancer. Similarly to HIV and hepatitis C, the management of chronic hepatitis B requires a shift in focus from tertiary care to
community and primary care settings. This could also include an exploration of alternative arrangements for care, including possible roles for nurse practitioners or integrated primary and tertiary nursing models.

While there is limited evidence to inform the percentage of people living with chronic hepatitis B who are eligible for treatment, estimates range from 10-25% (based on cost effectiveness studies into screening, prevention and treatment strategies, mostly identified through cohort or survey data) (18).

Monitoring for the stage of disease is important to determine when treatment will be beneficial. In certain stages of chronic hepatitis B treatment is not recommended. However, everyone with chronic hepatitis B is at increased risk of liver cancer and requires lifelong monitoring and clinical management for optimal outcomes.

Increasing the number of people accessing clinical treatment, to improve health outcomes for individuals and reduce the burden of hepatitis B in Australia, is an important element of this strategy.

Due to significant variations in the geographic distribution of priority populations and existing infrastructure and support in Australia, primary care governance at the local level is essential to deliver appropriately targeted interventions. Improved knowledge about the geographic distribution of these communities, the prevalence of chronic hepatitis B, and other factors including the incidence of liver cancer and surveillance notifications will help guide these local interventions (3).

Localised priority setting, through geographical mapping of the burden of disease, will allow for individual local area health networks and general practice to identify hepatitis B as a health burden for their community that requires addressing (5).

Additionally, identifying areas where access to appropriate diagnosis and treatment is lowest relative to the estimated burden of hepatitis B provides an opportunity to prioritise health interventions and improve local service delivery (5).

Multiple and varied factors contribute to this poor treatment uptake. Improved access to culturally and linguistically appropriate support and information about treatment options is required to address low levels of hepatitis B awareness and knowledge in communities most at risk.

Improving understanding hepatitis B and the health services available is essential for people living with chronic hepatitis B to stay healthy and avoid health risks. Given the complexity of chronic hepatitis B, innovative, sustainable and culturally appropriate health promotion activities are required. A person with hepatitis B who has a good understanding of the impact of chronic hepatitis B infection, the purpose of treatment and the clinical process for treatment is more likely to adhere to the recommendations on lifelong monitoring and treatment and respond effectively to clinical advice.

7.3.2 Care and support

People living with chronic hepatitis B infection come from a diverse cross-section of cultural, linguistic and social backgrounds, and often experience a range of complex social and psychological challenges in settings with decreased access to health care services.
Management of chronic hepatitis B is complex, including a spectrum of care ranging through diagnosis, education, support, regular monitoring and (where appropriate) antiviral therapy. The delivery of comprehensive, yet flexible and culturally appropriate care requires a multidisciplinary team approach.

The assessment of people for appropriate management, including initiation of antiviral therapy, requires a combination of monitoring viral load, severity of any liver disease including liver function testing. An important component of this is liver imaging or scanning, which currently has limited availability.

To be effective, community-based specialist hepatitis and primary care services must be physically accessible and culturally responsive to the specific needs of the priority populations. Communities need resources incorporating references and experiences that translate relevant complex biomedical information into accessible language. Relationships with local multicultural health workforce and community organisations will strengthen care delivery as well as personal and community level support for the individual.

Better understanding of hepatitis B and treatment availability is also required for some primary care practitioners and non-hepatology specialists such as those involved in antenatal care, where maternal treatment can significantly reduce the risk of transmission to the baby.

Difficulties for the primary health care sector in accessing non-invasive diagnostic technology to assess liver fibrosis, and arrangements restricting prescribing and dispensing of antiviral therapy to specialist services, do not support the increasingly critical role primary health care plays in the management of hepatitis B. Strategies to improve access by the primary health care sector to these central management elements are required to overcome these barriers.

An important element of care is the 6-monthly monitoring for hepatocellular carcinoma in certain individuals and introduction of antiviral therapy when appropriate. There is evidence that a systematic approach to managing hepatocellular carcinoma is likely to be a cost-effective cancer prevention intervention in the Australian context (23). To address the increasing burden of liver cancer in Australia, the cost-effectiveness and utility of establishing options for implementation of such an approach should be considered.

Communities play a pivotal role in ensuring that people with hepatitis B are effectively supported in promoting their health and maintaining compliance with clinical management. Programs that support these communities have the knowledge and skills to deliver these activities are important.
7.4 Workforce

Services providing care and support for people with chronic hepatitis B are diverse. These various sectors require access to accurate information about hepatitis B, the skills to promote prevention and the links to engage with appropriate services.

A move towards a primary care focus of management will increase access, reduce the health costs and personal consequences of unmanaged hepatitis B, and increase health care integration. Professional education programs must address testing and assessing, monitoring, managing and treating hepatitis B, to ensure expanding access to care is done safely.

Developing cultural competency across clinical services and community organisations is important to increase engagement with priority populations. Understanding the different needs of each group is important to ensure appropriate and effective service delivery. This requires continued and sustained collaboration with communities most affected by chronic hepatitis B.

Further support for health care professionals prescribing hepatitis B antivirals will be essential to scale up treatment access. The necessary curriculum, resources and oversight were developed under the auspices of the First National Hepatitis B Strategy 2010-2013. Supporting prescribing in primary care, such as through mentorship for prescribers, and regulatory changes to s100 prescribing and dispensing arrangements should be explored during the lifetime of this strategy.

Understanding the characteristics of the local population and the prevalence of hepatitis B at the local level will support the development, targeting and intensity of health promotion programs and shared care service delivery mechanisms. It will support establishing partnerships between key organisations including Aboriginal Community Controlled Health Services, specific community groups, and other health and community organisations to take a targeted approach to raise awareness, increase testing and support compliance with management and treatment protocols at the local level.

<table>
<thead>
<tr>
<th>Priority actions</th>
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<tbody>
<tr>
<td>Improve knowledge of hepatitis B diagnosis and management among primary healthcare professionals</td>
</tr>
<tr>
<td>Support health care professionals and community organisations to provide for the needs of priority populations to deliver appropriate and evidence based care</td>
</tr>
<tr>
<td>Provide the primary health care workforce with support and mentorship, to ensure successful transitions to primary care</td>
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</tbody>
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Services providing care and support for people with chronic hepatitis B are diverse. These various sectors require access to accurate information about hepatitis B, the skills to promote prevention and the links to engage with appropriate services.

A move towards a primary care focus of management will increase access, reduce the health costs and personal consequences of unmanaged hepatitis B, and increase health care integration. Professional education programs must address testing and assessing, monitoring, managing and treating hepatitis B, to ensure expanding access to care is done safely.

Developing cultural competency across clinical services and community organisations is important to increase engagement with priority populations. Understanding the different needs of each group is important to ensure appropriate and effective service delivery. This requires continued and sustained collaboration with communities most affected by chronic hepatitis B.

Further support for health care professionals prescribing hepatitis B antivirals will be essential to scale up treatment access. The necessary curriculum, resources and oversight were developed under the auspices of the First National Hepatitis B Strategy 2010-2013. Supporting prescribing in primary care, such as through mentorship for prescribers, and regulatory changes to s100 prescribing and dispensing arrangements should be explored during the lifetime of this strategy.

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### 7.5 Removing barriers

#### Priority actions

- Reduce stigma and discrimination in community and health care settings, and empower priority populations to increase individual and community resilience
- Develop programs to assess and address hepatitis B related stigma and discrimination
- Maintain effective partnerships between governments and organisations representing the interests of people affected by or living with hepatitis B at local, state and territory and national levels
- Develop health promotion interventions to improve health literacy in people with chronic hepatitis B and their families and communities, to foster culturally sensitive environments in which it is safe to disclose hepatitis B infection and support their clinical and non-clinical needs and empower priority populations to increase community resilience

Little is known about the impact of stigma and discrimination on people with hepatitis B. Social exclusion and isolation affect the health status of communities from culturally and linguistically diverse backgrounds. Language differences and cultural beliefs and practices influence health literacy, including access to health services.

Hepatitis B infections disproportionately affect marginalised populations, such as migrant communities with origins in Asia, the Pacific and Africa; people of Aboriginal and Torres Strait Islander background; individuals with a history of injecting drug use; and men who have sex with men (5). Modelling data indicates that a significant number of hepatitis B infected people were born overseas, and the predominant countries of birth include China, Vietnam, Cambodia, Malaysia, the Philippines, Greece, Italy, Fiji and Afghanistan.

People from affected communities require protection from multiple forms of discrimination (24), not only because they may be thought to be living with hepatitis B, but also because of the primary stigma they may suffer because of their vulnerable status, such as people who inject drugs, sex workers, people in custodial settings and people from culturally and linguistically diverse communities (25). All partners in Australia’s hepatitis B response have a responsibility to work towards ensuring the response to hepatitis B, and indeed all BBV and STIs, is human rights based. Discrimination, unfair treatment and social burdens increase the negative impact of health status and can reduce access to care.

Programs that address advocacy and empowerment of populations to access prevention, treatment, care and support in the community, education, workplace, health care and legal settings should be promoted. Approaches include awareness raising initiatives, education and training programs, supporting advocacy and empowerment, improving access to effective complaint systems and promoting research.

Organisations involved in community responses to BBVs require support for programs relating to hepatitis B and to further develop and implement community engagement and partnership building.
Communities and people infected with hepatitis B need to be equipped with the language and skills to negotiate through the experience of their infection, including understanding the impact of their diagnosis, the clinical management options including compliance and monitoring and expectations of treatment, and informing their contacts of the implications of the infection.

A priority action area for the First National Hepatitis B Strategy 2010-2013 was to build partnerships and strengthen community action, recognising the need for collaboration between communities most affected by hepatitis B and all levels of government as well as between community-based organisations and the medical, healthcare, research and scientific communities.

These partnerships have been established, and the challenge for this strategy is to both maintain effective partnerships to deliver targeted health promotion activities, testing, treatment, care and support to priority populations, particularly those where social exclusion and isolation affect health status and access to effective management.

7.6 Surveillance, Research and Evaluation

<table>
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<tr>
<th>Priority actions</th>
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<tbody>
<tr>
<td>• Strengthen the hepatitis B component of the National BBV &amp; STI Surveillance and Monitoring Plan</td>
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<tr>
<td>• Improve our understanding of the burden of disease attributable to hepatitis B and the associated risk factors, develop appropriate evidence-based public health responses and evaluate the impact of these programs on the increasing incidence of morbidity and mortality</td>
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<tr>
<td>• Provide support to ensure research is undertaken across the relevant diseases and disciplines, including social, behavioural, epidemiological, clinical and basic research to inform the delivery of the Strategy</td>
</tr>
<tr>
<td>• Evaluate health promotion, testing, treatment, care, support and education and awareness campaigns, programs and activities to ensure they are effective</td>
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</table>

7.6.1 Surveillance and monitoring

The quality and coverage of surveillance data for hepatitis B infection requires significant improvement. In 2013, only half of the eight indicators identified in the National BBV and STI Surveillance and Monitoring Plan 2010-13 to monitor the implementation of the First Hepatitis B Strategy were able to be reported on, and of these, two were based on weak data and/or methods. The revised set of indicators for this strategy contains six indicators which can be immediately reported on, and identifies several significant gaps.

A key issue in the data collection that needs to be addressed is the need to improve data completeness for Aboriginal and Torres Strait Islander status and country of birth for newly acquired and unspecified hepatitis B notifications.

There is currently no ability to monitor and report on the disease related mortality and morbidity attributed to chronic hepatitis B. The development of a new indicator is critical, given the public health disease burden attributed to hepatitis B. Consideration
could be given to indicators that measure the proportion of liver attributed to hepatitis B and the number of deaths attributable to hepatitis B infection.

While antiviral treatment is an important aspect of hepatitis B management, the emphasis is on ensuring appropriate monitoring and care. Further work is needed to develop a measure of the delivery of appropriate comprehensive management. Examples include the proportion of people with chronic hepatitis B who have a recorded management plan and / or received at least an annual HBV DNA test.

The estimated proportion that has not been diagnosed is based on denominator data derived from modelling performed almost 10 years ago. To determine progress against achieving the target of 80 per cent of people living with hepatitis B being diagnosed, this needs updating.

An important gap identified across all 5 strategies, is the ability to monitor the impact of stigma, discrimination, legal and human rights. Options need to be explored to develop an indicator that informs activities and strategies in a meaningful way.

Behavioural surveillance encompassing risk behaviours, prevention practices, testing and treatment uptake and health services for priority populations is important to inform policy and programs addressing emerging prevention, testing, treatment, care and support needs.

Recent mapping work will allow additional information to be collected to analyse surveillance notifications, liver cancer incidence and antiviral treatment uptake, to reflect the shifting epidemiology of hepatitis B in Australia and the impact of interventions to address hepatitis B infection at a population level (5).

A key issue in data collection that needs to be addressed is the need to improve data completeness for Aboriginal and Torres Strait Islander status and country of birth for newly acquired and unspecified hepatitis B notifications.

7.6.2 Research and evaluation

Research guides the development, implementation and evaluation of policies and programs at all levels of the national response to chronic hepatitis B. Research is needed to investigate the impact of chronic hepatitis B in priority populations and communities.

A culture of continuous improvement needs to underpin program and service development, including strong formative and evaluation research.

Mapping work identifying areas of high hepatitis B prevalence and the proportion of people receiving treatment will also help measure the impact of health promotion programs and interventions at the population level. (4).

More research is also needed on uptake of vaccination programs (particularly catch-up and at-risk populations) and which strategies are most effective for different priority populations.

In addition, recording linkages between notifications of chronic hepatitis B with outcomes including liver cancer and mortality would enable a better understanding of the impact of hepatitis B.
Monitoring and evaluating the implementation of the priority actions, and the supporting indicators and Implementation Plan, will ensure we are progressing towards, and remain focused on, reaching the targets outlined in this strategy.

Systematic evaluation of activities and programs should also focus on aligning outcomes with identified priority actions. The interrelationship between priority actions and associated programs should be monitored and linkages enhanced where appropriate.

A significant number of activities and programs have been undertaken in the First Hepatitis B Strategy and by state and territory, peak and community organisations and research centres across all six priority action areas. The opportunities for scaling up these activities and programs to a national level should be evaluated and explored.
Acknowledgements

The Second National Hepatitis B Strategy 2014-2017 was developed through a broad and inclusive consultation process with contributions from governments, community organisations, researchers and expert health professionals. Thanks go to all those involved in developing this strategy.
References

## Appendix: Priority Populations

<table>
<thead>
<tr>
<th>Priority Population</th>
<th>Reason for Priority Status</th>
<th>Issues and considerations</th>
<th>Additional Focus</th>
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</table>
| People from culturally and linguistically diverse backgrounds | High prevalence with estimates that the prevalence of hepatitis B in Australia among people from culturally and linguistically diverse backgrounds typically reflects the prevalence of hepatitis B in the countries of origin | • Language, cultural and gender issues  
• Low health literacy and perception of risk  
• Limited health-seeking behaviour  
• Lack of familiarity with health system and services  
• Previous negative experiences of healthcare  
• Issues relating to privacy and confidentiality (e.g. use of interpreters)  
• Refugees and asylum seekers may have experienced significant trauma or violence | Priority subpopulations are migrants from countries with high prevalence such as Viet Nam (12.5% of the population) and China (12.3% of the population)¹ |
| Aboriginal and Torres Strait Islander peoples                | High prevalence of an estimated 3.7% of the Aboriginal and Torres Strait Islander population² compared with the 1.03%³ in the Australian population | • Concerns regarding access and/or acceptance of culturally appropriate services including primary healthcare services for many communities  
• Language and cultural issues, including family and community relationships | Prevalence of chronic hepatitis B varies according to place of residence with 2% in urban populations to 8% in rural populations |
<p>| Children born to mothers with chronic hepatitis B and children with chronic hepatitis B | High risk with only 10% of neonates and infants clearing the hepatitis B virus after infection | • Lack of viral load testing for pregnant women with chronic hepatitis B⁴⁵ | Children experiencing liver disease caused by chronic hepatitis B infection⁶ |</p>
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</table>
| Unvaccinated adults at higher risk of infection | High risk due to increased or potentially increased exposure to the hepatitis B virus | - Criminalisation  
- Access to treatment is difficult, and exit screening is not as high as entry screening in people in custodial settings | - Haemodialysis patients, and those with severely impaired renal function  
- Solid organ and haematopoietic stem cell transplant recipients |

Injecting drug use is the highest reported source of hepatitis B infection. (15.5% of newly acquired infections)

Includes:
- People who inject drugs
- Men who have sex with men
- Sex workers
- Household and intimate contacts of people who have chronic hepatitis B infection
- People in custodial settings
- People who are immunocompromised, have HIV or hepatitis C or both, or have chronic liver disease
1. The Kirby Institute. *HIV, viral hepatitis and sexually transmissible infections in Australia Annual Surveillance Report 2013*. The Kirby Institute, the University of New South Wales, Sydney, NSW


7. The Kirby Institute. *HIV, viral hepatitis and sexually transmissible infections in Australia Annual Surveillance Report 2013*. The Kirby Institute, the University of New South Wales, Sydney, NSW