

# Facilitating hepatitis B clinical management in general practice

## *A qualitative investigation*

**Jack Wallace**, Jacqueline Richmond, Nicole Allard, Jess Howell, Emily Adamson, Yinzong Xiao, Clare O'Reilly, Margaret Hellard

### Background

Primary care services are recognised in consecutive national hepatitis B strategies as priority settings for clinically managing hepatitis B. In 2015, authorised general practitioners were able to prescribe hepatitis B therapy, thereby increasing access to medication that reduces hepatitis B-related mortality. The aim of this study was to identify elements supporting hepatitis B-related clinical management in primary care settings.

### Methods

Data from qualitative semi-structured interviews with 19 participants from primary care settings were thematically analysed.

### Results

Critical elements in providing clinical care in primary care settings were identified at an organisational and provider level. A supportive organisational culture included leadership, a multidisciplinary team approach, community engagement and cultural competency, while provider-related issues included authorisation to prescribe, access to linguistic and cultural mediators and effective relationships with relevant specialist services.

### Discussion

The research identified practice leadership, organisational culture and a patient focus supported hepatitis B clinical management transitioning from specialist to primary care services.

**GENERAL PRACTICE** and other primary healthcare services are recognised as essential to reduce hepatitis B-related mortality in Australia. The *Third National Hepatitis B Strategy 2018–2022* identifies general practice as a 'priority setting' for delivering education, prevention, treatment and care services,<sup>1</sup> with key elements in the transition of hepatitis B clinical management from specialist to primary care yet to be described.

Hepatitis B is a global and national public health threat, with more than 225,000 people estimated to be living with chronic hepatitis B in Australia.<sup>2</sup> Hepatitis B causes approximately 25% of primary liver cancers, the rate of which almost tripled in Australia between 1982 and 2007.<sup>3</sup> Liver cancer has been described as an 'outlier' given the reduction in mortality found in other cancers, and the poor five-year survival rate for those diagnosed.<sup>4</sup> Most people in Australia with hepatitis B were born overseas, with China (17.8%), Vietnam (8.2%) and New Zealand (3.5%) being the top three countries of origin.<sup>5</sup> Aboriginal and Torres Strait Islander peoples have a disproportionate hepatitis B prevalence that ranges from 1.1% in major cities to 5.5% in remote areas.<sup>6</sup>

While regular clinical management of hepatitis B reduces liver disease progression,<sup>7</sup> of the estimated 45,000 people who fulfilled antiviral treatment criteria in Australia in 2017, only 19,358 (41%) received this treatment.<sup>5</sup> To support clinical management transitioning

from specialist to primary care services, the Australian Government's Highly Specialised Drugs Program in 2015 enabled authorised general practitioners (GPs) to prescribe antiviral treatment. In 2017, most prescriptions for treatment were provided by non-GP specialist physicians (76.0%), with 10.3% prescribed by GPs and 13.7% prescribed by providers classified as neither GPs nor non-GP specialist physicians.<sup>8</sup>

Several challenges to the general practice response to hepatitis B have been described, including inadequate knowledge of hepatitis B,<sup>9–13</sup> lack of awareness of clinical management processes,<sup>9,14–20</sup> poor specialist referral processes<sup>10,15,21,22</sup> and inadequate financial support for hepatitis B management.<sup>10,23</sup> In spite of these challenges, hepatitis B management within primary care will improve treatment uptake and reduce the escalating mortality resulting from hepatitis B-related liver cancer.<sup>15,24–29</sup>

This research differs from other studies investigating general practice responses to hepatitis B by aiming to identify key enablers to the clinical management of people with hepatitis B within these settings.

### Methods

Recruitment resulted from invitations sent to GPs in Victoria and New South Wales authorised to prescribe hepatitis B treatments and listed on the Australasian Society for HIV, Viral Hepatitis and Sexual Health Medicine website.

Additional promotion occurred through Victorian Primary Health Networks e-newsletters, and principal investigator contacts including with the Chinese and Vietnamese Medical Associations.

The interview schedule (Appendix 1, available online only) sought information on:

- the professional experience of managing people with hepatitis B, including motivation to prescribe antiviral treatments
- the issues faced in the testing, diagnosing, monitoring and treating of hepatitis B within primary care settings
- practice systems that supported hepatitis B management.

Data analysis followed the stages described by Braun and Clarke,<sup>30</sup> through familiarising, identifying, reviewing and comparing themes across the data set with coding and analysis conducted by the first author using a thematic analysis. Transcripts were manually coded and entered into NVivo 10 (QSR International Pty Ltd., Vic, Australia). Themes were identified and further refined through team discussion. Ethical approval for the study was obtained from the Cancer Council Victoria Institutional Research Review Committee (IER 1806) and Alfred Hospital Human Research Ethics Committee (392/18). Participation in the research was voluntary, with participants providing informed consent prior to their participation.

**Results**

Nineteen electronically recorded semi-structured interviews were held: 16 with GPs, one with a practice nurse, and two with practice managers who were also nurses (Table 1). Participants were located in Melbourne or Sydney metropolitan areas. Eight participants worked in community health centres with the remainder working in private general practice settings, and one participant working in both. De-identified quotes from GPs, practice managers (PM) and practice nurses (PN) from private practice (PP) and community health centres (CHC) are used to illustrate perspectives. Structural enablers supporting hepatitis B management were identified at a practice and provider level.

**Health service environment**

Several features of general practice support the engagement of people from the communities most affected by hepatitis B. These features include geographical and physical access, economic enablers and, within some services, cultural responsiveness.

*[Hepatitis B is] a perfect condition to be managing in general practice, and it's important, and it often affects minority groups who are already disadvantaged in a whole variety of ways. (GP 5 PP)*

One participant working within a community health agency highlighted that the lack of payment required to access

these agencies supported people with hepatitis B attending their service.

*We're a Community Health Centre, so we don't charge money, and that attracts a huge number of people. (GP 4 CHC)*

Aboriginal and Torres Strait Islander peoples are disproportionately affected by hepatitis B. One lesson from Aboriginal community controlled health organisations was to ensure that the internal design of the health service reflected and responded to cultural and social norms.

*The set-up's a little bit different to conventional practice. There's a big treatment room, and a lot of people just*

**Table 1. Participant details**

Participant number	Gender	Profession	Service type
Participant 1	F	GP	PP
Participant 2	M	GP	CHC
Participant 3	M	GP	PP
Participant 4	M	GP	CHC
Participant 5	F	GP	PP
Participant 6	M	GP	CHC
Participant 7	F	GP	CHC/PP
Participant 8	M	GP	PP
Participant 9	F	GP	CHC
Participant 10	F	PM	PP
Participant 11	F	PN	CHC
Participant 12	M	GP	PP
Participant 13	M	GP	PP
Participant 14	F	PM	PP
Participant 15	M	GP	PP
Participant 16	M	GP	CHC
Participant 17	F	GP	CHC
Participant 18	M	GP	PP
Participant 19	F	GP	PP

*CHC, community health centre; F, female; GP, general practitioner; M, male; PM, practice manager; PN, practice nurse; PP, private practice*

*come in and see the nurse or the Aboriginal health worker, or a doctor who's rostered on to see walk-in patients. So you see large volumes of people.* (GP 7 CHC/PP).

### Hepatitis B audits

Several participants from both community health and private practice settings audited their practice to identify the numbers of people with, or at risk of, hepatitis B. The outcome identified the relative importance of hepatitis B within the practice to justify resources and to ensure that affected patients were effectively managed.

*[If] there's large enough numbers, then that would actually be viable financially as well.* (GP 15 PP)

The importance of having a critical load of patients was noted as an important indicator of proficiency and a motivator for undertaking continued education: 'if you've got a critical load ... it becomes routine' (GP 13 PP).

In addition to defining the problem, a regular annual audit supported hepatitis B clinical management. One participant noted seeking the capacity to conduct an annual review of patients with hepatitis B.

*Making sure that someone is yearly reviewing - who did and who didn't get screened, and who did we miss and why ... we don't have the resources to do that routine auditing.* (GP 9 CHC)

### Organisational culture

Practice factors enabling an effective response to hepatitis B were multilayered, multidisciplinary and led by the management of the practice. Practice management were seen to provide permission to respond to the sometimes complex needs of people with hepatitis B.

*Management always had an answer ... for us to go from thinking ... hepatitis B was too hard, to thinking ... 'It's quite simple', with these new conditions ... created by management.* (GP 2 CHC)

Several participants identified continued and structured professional development within primary care settings as an

enabling factor of relevance in supporting hepatitis B clinical management.

*There's a really strong culture of professional development. We have weekly meetings ... we've all got doctors within the practice that have got some specialised areas that they're better at.* (GP 5 PP)

As a result of the complex biomedical description of hepatitis B, its chronic and asymptomatic nature, and characteristics of the communities most often affected, additional information and/or longer consultations are often required to effectively respond to the needs of the patients. There were marked differences in how private and community health practices were able to respond to this need.

*In the majority of situations, I just print information [for people with hepatitis B] to read, and then come back to have [a] discussion ... otherwise 10 minutes can't go anywhere.* (GP 18 PP)

*Management book our diaries in a certain way, where there was plenty of slack ... there wasn't the emphasis on 'we need to be fully booked out.'* (GP 2 CHC)

### Multidisciplinary care team

A multidisciplinary team and whole-of-practice response to hepatitis B was reported as being adopted by several participants. To support the GP, this team included practice nurses who provided information after diagnosis, conducted contact tracing, followed up referrals, ensured that blood tests were done, followed up missed appointments, ensured that pathology slips were completed and were 'proactive in screening people and immunising people' (GP 7 CHC/PP).

A supportive practice manager was described as essential for managing hepatitis B in primary care, and particularly for leading a multidisciplinary approach.

*A good practice manager is the communicator between all the different services. So rather than one GP trying to establish networks with other people, you've got a contact point.* (GP 4 CHC)

### Practice tools

People with hepatitis B provide specific challenges to established recall processes, particularly for prioritising an asymptomatic infection and for new arrivals and migrants who also access healthcare in their country of origin.

One participant reported financial barriers to managing hepatitis B within primary care settings, while several other participants reported that Chronic Disease Management plans provided a sustainable model for delivering services and responding effectively to the needs of people with hepatitis B.

*To make hepatitis B something that can be done well ... you have to be remunerated for it ... I am encouraging our doctors in our practice to do ... management plans.* (GP 5 PP)

### Specialist physician support for general practice

The major change in managing hepatitis B within primary care occurred with the authorisation to prescribe S100 drugs in July 2015, which one participant reported fundamentally changed their response to people with hepatitis B.

*The way in which I practise ... it's completely different ... before, I'd refer them all ... and now, it's rare that I refer.* (GP 7 CHC/PP)

Authorisation to prescribe S100 drugs requires non-GP specialist physician support for the first five patients. While participants commonly expressed frustration at non-GP specialist physician access and communication, and reported long waiting lists for referral, several noted the critical and timely part non-GP specialist physicians played in their clinical practice.

*Having the support of the specialist is really helpful because it gives you that security that people can be managed, and it doesn't stop with you.* (GP 16 CHC)

Primary care prescribing of antiviral treatment reduces non-GP specialist clinic waiting times and increases access to hepatitis B treatment. While there were

valuable individual relationships between non-GP specialist physicians and S100 prescribers, participants noted that no systematic process had been developed to refer patients with uncomplicated hepatitis B from specialist to primary care settings.

*The reluctance of the hospital clinics to ... accredit us, train us, examine us, make sure we're good, but then not send us people is a bit hard to understand. (GP 6 CHC)*

### Cultural competence

Eight of the 19 participants, all of whom worked in private practice, were bilingual, with six languages spoken by participants and five participants speaking Cantonese and/or Mandarin.

One participant working within a community health setting reflected on the breadth of experiences and challenges resulting from the differences that occurred across the various cultural groups accessing the service.

*Our Vietnamese patients are actually pretty well educated, and we've got lots of resources in Vietnamese. I find [for] Burmese people generally - we've got good resources, it's not such an issue. Chinese patients tend to either know a lot about it already, or we've got so many good resources. ... With our patients from Somalia and Ethiopia and Kenya ... we can get lost in translation. (GP 4 CHC)*

One participant from a community health centre described the importance of cultural liaison in relation to hepatitis B and its impact on the recall of patients.

*The other thing we really found affected our recall ... was ... community liaisons ... [they] just bridged the gap in so many different facets. (GP 17 CHC)*

Several participants described proactive and voluntary activity with affected communities to support the clinical management of people with hepatitis B.

*I'll give talks in [the] community too ... I know there are many sad cases in China about people dying with liver cancer. (PM 10 PP)*

*When we first started ... I went to the churches, and I went to the Korean shop to put out the posters. (PN 11 CHC)*

While this engagement with communities raised the visibility of hepatitis B, it also affected the quality of medicine being provided to people from high-risk communities by breaking down barriers between clinician, community and patient.

*When I saw them one on one, they'd sit there like a mouse and say 'yes doctor', 'no doctor' and not ask questions ... They're much more likely to ask you a question if they saw you ... at the after-hours group community talk. (GP 2 CHC)*

An additional reflection of cultural competence was the use of colloquial descriptions of hepatitis B used in China. One practitioner reported using the terms 'big three' or 'little three' regularly with their Chinese-born patients, given the doctor's experience and use of the term in China.

*The big three means the virus is more active ... Because in Chinese, when I was a doctor there [China], we always use those ... this is the big three in China. (GP 18 PP)*

### Discussion

This project documented systems and identified enablers to the effective diagnosis and management of hepatitis B in primary healthcare settings. These practice enablers are listed in Table 2.

This study identified that hepatitis B is successfully managed within primary care settings and focused on identifying facilitators to that management. Central to this successful management was the interest of clinicians in managing hepatitis B, supported by leadership, both within practice organisational and clinical structures. At a practical level, this included the provision of longer consultations, cultural liaison and engagement, staff training and proactive engagement with the communities most affected by hepatitis B.

Successful clinical management of people with hepatitis B within primary care

settings is supported by a multidisciplinary team approach that includes the GP, practice nurses and practice managers, with external support from non-GP specialist physicians to support hepatitis B testing, diagnosis, monitoring and treatment. Proficiency increases with frequency, and regular practice-based professional development opportunities for staff provide an environment in which skills are developed and maintained.

Several participants audited their practice to identify patients who were at greater risk of hepatitis B infection and determine the clinical management status of patients. This process was often done voluntarily and provided the rationale for some practices to support comprehensive responses to hepatitis B, with practice nurses annually reviewing all patients with hepatitis B to identify those who were missing out on clinical management.

Access to health services for people from the communities most affected by hepatitis B was supported by community health centres providing cost-free access to GPs. Medicare Benefits Schedule (MBS) rebates were not a barrier to effective hepatitis B clinical management, with reimbursement for chronic diseases management providing recall and reminders coordination, education and information provision, liaison with other providers and individual advocacy for patients.

People with chronic hepatitis B in Australia are primarily born overseas, from culturally and linguistically diverse backgrounds, with diverse understandings of health and wellbeing, and in varying stages of settlement in Australia. As noted previously, hepatitis B requires general practice to understand, communicate with and effectively interact with people across cultures: this entails language accessibility and a nuanced response to cultural beliefs.

While under the MBS there is greater financial reward for short consultations, the complex nature of explaining hepatitis B to patients who come from different cultural and language backgrounds requires time. Participants reported implementing culturally appropriate interventions, with practice nurses supporting clinical care through patient education, coordination, recall and

monitoring. At a practical level, and while acknowledging interpreting services are available, invariably people who require interpreters only receive clinical attention for half the time as those patients who speak English. This affects the amount of information that can be provided within a single consultation and is not proven to reduce the standard of care. Most participants working within private practice spoke one or more of the languages spoken in China and experienced language concordance with their patients.

Recall processes within general practice were effectively established and required little further development for hepatitis B. However, unique challenges to these processes were described, including the asymptomatic nature of the infection; migration, travel and settlement issues;

and significant movement between countries of origin and Australia.

The authorisation of primary care physicians to prescribe hepatitis B medication is a key intervention aimed at broadening access to hepatitis B treatment. While the process of authorisation includes training in addition to mentoring by non-GP specialist physicians, only 1% of the GP workforce are currently authorised to prescribe treatment. There is no systematic program to transition hepatitis B management from specialist services to general practice; the process instead relies on individual relationships between the GP and the specialist service or individual non-GP specialist physician.

Generating a commitment for individual practices to comprehensively

respond to hepatitis B is difficult, leading to what could be considered a non-virtuous cycle. This cycle occurs as a result of an asymptomatic condition for which there is inadequate knowledge of the infection both within the community and within primary care services, with GPs often unaware of their proactive role in the effective management of the infection. This leads to a lack of confidence in the management of hepatitis B, leading to a lack of engagement with patients at risk of hepatitis B during testing and management. This prevents the practitioner becoming aware of their potentially more active role, and the cycle continues with the practitioner remaining unaware of a potentially more active role. There is no simple or obvious solution to facilitate GPs to provide clinical management for people with hepatitis B, and reorientating practices to effectively address hepatitis B remains a challenge. This study highlights the role of an interested or ‘champion’ GP who, in combination with practice leadership, can reorientate practices to increase and improve the management of hepatitis B.

**Implications for general practice**

Hepatitis B is a manageable infection. With access to effective clinical management, mortality resulting from the infection can be minimised. While prescribing rights have broadened to include authorised GPs, increasing the numbers of people with hepatitis B being tested, regularly monitored and treated in primary care settings will require additional systems-strengthening activity.

The proportion of people with hepatitis B being managed within primary care settings has increased without the development of coordinated and resourced activity. Critical elements in increasing access and retaining people with hepatitis B in primary care settings include activity at a practice and provider level.

**Authors**

Jack Wallace PhD, Postdoctoral Research Fellow, Burnet Institute, Vic; Adjunct Research Fellow, Australian Research Centre in Sex, Health & Society,

**Table 2. Structural enablers to hepatitis B clinical management in primary care settings**

<b>Practice requirements</b>	Practice leadership supports effective hepatitis B service delivery
	The practice responds actively to the needs of people from culturally and linguistically diverse backgrounds, including presenting few financial barriers
	An organisational culture allows teamwork, regular professional development and continuing professional development
	Staff resourcing enables a multidisciplinary team response to people with hepatitis B
	Active support for the systematic testing of communities at risk
	Implementation of an effective recall system and capacity to regularly audit patient records
	Culturally relevant hepatitis B-related resources are available and visible within practice waiting rooms and surgeries
	Staff participate in community development interventions to raise the visibility and support the testing and continued clinical management of hepatitis B
	Willingness and capacity to provide for longer consultations
	<b>Provider requirements</b>
Capacity to work within cross-cultural multidisciplinary team environments	
Ability to provide patient-centred hepatitis B-related education and information	
Clear communication including language accessibility operating within a culturally appropriate and sensitive context	
Capacity to undertake continuing education	
Support for community development activities with the communities most affected by hepatitis B	

La Trobe University, Vic; Adjunct Lecturer, Centre for Social Research in Health, UNSW, NSW.  
jack.wallace@burnet.edu.au

Jacqueline Richmond PhD, MPH, RN, Program Manager, Workforce Development and Health Service Delivery, EC Australia, Burnet Institute, Vic; Adjunct Research Fellow, Australasian Research Centre in Sex, Health & Society, La Trobe University, Vic

Nicole Allard MBBS, MPH, PhD, Postdoctoral Fellow, WHO Collaborating Centre for Viral Hepatitis, The Doherty Institute, Vic; Honorary Lecturer, Faculty of Medicine, Dentistry, and Health Sciences, The University of Melbourne, Vic; General Practitioner, cohealth, Vic

Jess Howell MBBS (Hons), PhD (Medicine), FRACP, Gastroenterology, National Health and Medical Research Council (NHMRC) Postdoctoral Research Fellow, Burnet Institute, Vic; CR Roper Senior Research Fellow, Department of Medicine, The University of Melbourne, Vic; Hepatologist and Gastroenterologist, St Vincent's Hospital, Vic

Emily Adamson BSocSci, PGDip, Program Manager, Health Promotion, EC Australia, Burnet Institute, Vic  
Yinzong Xiao MBBS, MMed

Clare O'Reilly MA (Health), Manager, Primary Care Engagement, Cancer Council Victoria, Vic

Margaret Hellard FAFPHM, PhD, FRACP, MBBS, Deputy Director (Programs), Burnet Institute, Vic; Adjunct Professor, Department of Epidemiology and Preventative Medicine, Monash University, Vic; Adjunct Professor, Doherty Institute, School of Population and Global Health, The University of Melbourne, Vic

Competing interests: JH and MH report grants from Gilead Sciences, AbbVie, Merck/MSD and Bristol Myers Squibb that have no direct relevance to this project. JW, NA, JH and MH receive fellowship support from the NHMRC. YX is supported by the Melbourne Research Scholarship.

Funding: The project was funded by Burnet Institute research funding and Cancer Council Victoria.

Provenance and peer review: Not commissioned, externally peer reviewed.

## Acknowledgements

The authors acknowledge operational support through the Victorian Operational Infrastructure Support Program received by Burnet Institute.

## References

- Department of Health. Third National Hepatitis B Strategy 2018–2022. Canberra, ACT: DoH, 2018.
- Romero N, McCulloch K, Allard N, MacLachlan JH, Cowie BC. National Surveillance for Hepatitis B Indicators: Measuring the progress towards the targets of the National Hepatitis B Strategy – Annual Report 2018. Melbourne, Vic: WHO Collaborating Centre for Viral Hepatitis, The Doherty Institute, 2019.
- Communicable Diseases Network Australia. Hepatitis B CDNA national guidelines for public health units. Canberra, ACT: CDNA, 2018.
- Cocker F, Yee KC, Palmer AJ, de Graaff B. Increasing incidence and mortality related to liver cancer in Australia: Time to turn the tide. *Aust N Z J Public Health* 2019;43(3):267–73. doi: 10.1111/1753-6405.12889.
- MacLachlan J, Thomas L, Cowie B, Allard N. Hepatitis B mapping project: Estimates of geographic diversity in chronic hepatitis B prevalence, diagnosis, monitoring and treatment. National report 2016. Darlinghurst, NSW: Australasian Society for HIV, Viral Hepatitis and Sexual Health Medicine (ASHM), 2018.
- MacLachlan J. Geographic variation in CHB prevalence in Aboriginal and Torres Strait Islander People across Australia. 2nd Australasian Viral Hepatitis Elimination Conference 2019; 5–6 August 2019; Sydney, NSW: ASHM.
- Lok ASF, McMahon BJ. Chronic hepatitis B. *Hepatology* 2007;45(2):507–39. doi: 10.1002/hep.21513.
- MacLachlan J, Thomas L, Cowie B. Hepatitis B mapping project: Estimates of geographic diversity in chronic hepatitis B and C prevalence, management and treatment. National report 2017. Darlinghurst, NSW: Australasian Society for HIV, Viral Hepatitis and Sexual Health Medicine (ASHM), 2019.
- Guirgis M, Yan K, Bu YM, Zekry A. General practitioners' knowledge and management of viral hepatitis in the migrant population. *Intern Med J* 2012;42(5):497–504. doi: 10.1111/j.1445-5994.2011.02440.x.
- Wallace J, Hajarizadeh B, Richmond J, McNally S. Challenges in managing patients in Australia with chronic hepatitis B: The general practitioners' perspective. *Aust N Z J Public Health* 2013;37(5):405–10. doi: 10.1111/1753-6405.12127.
- Sam JJ, Heathcote EJ, Wong DK, Wooster DL, Shah H. Hepatitis B learning needs assessment of family medicine trainees in Canada: Results of a nationwide survey. *Can J Gastroenterol* 2011;25(3):127–34. doi: 10.1155/2011/957937.
- Chao J, Chang ET, So SKS. Hepatitis B and liver cancer knowledge and practices among healthcare and public health professionals in China: A cross-sectional study. *BMC Public Health* 2010;10:98. doi: 10.1186/1471-2458-10-98.
- Ferrante JM, Winston DG, Chen PH, de la Torre AN. Family physicians' knowledge and screening of chronic hepatitis and liver cancer. *Fam Med* 2008;40(5):345–51.
- Tan NC, Cheah SL. What barriers do primary care physicians face in the management of patients with chronic hepatitis B infection in primary care? *Singapore Med J* 2005;46(7):333–39.
- Dev A, Nguyen JH, Munafa L, Hardie E, Iacono L. Chronic hepatitis B: A clinical audit of GP management. *Aust Fam Physician* 2011;40(7):533–38.
- Upadhyaya N, Chang R, Davis C, Conti MC, Salinas-Garcia D, Tang H. Chronic hepatitis B: Perceptions in Asian American communities and diagnosis and management practices among primary care physicians. *Postgrad Med* 2010;122(5):165–75. doi: 10.3810/pgm.2010.09.2213.
- Spradling PR, Xing J, Rupp LB, et al. Infrequent clinical assessment of chronic hepatitis B patients in United States general healthcare settings. *Clin Infect Dis* 2016;63(9):i205–08. doi: 10.1093/cid/ciw516.
- van Gemert C, Howell J, Wang J, et al. Knowledge and practices of chronic hepatitis B virus testing by general practitioners in Victoria, Australia, 2014–15. *Aust Fam Physician* 2017;46(9):683–89.
- Richmond J, Smith E, Wallace J, Duncan D, Lucke J. Hepatitis B testing and diagnosis experiences of patients and primary care professionals in Australia. *Aust Fam Physician* 2017;46(7):513–19.
- Allard NL, MacLachlan JH, Cowie BC. The cascade of care for Australians living with chronic hepatitis B: Measuring access to diagnosis, management and treatment. *Aust N Z J Public Health* 2015;39(3):255–59. doi: 10.1111/1753-6405.12345.
- Wallace J, Hajarizadeh B, Richmond J, McNally S. Investigating general practice and hepatitis B. Melbourne, Vic: Australian Research Centre in Sex, Health and Society, La Trobe University, 2012.
- Mostert MC, Richardus JH, de Man RA. Referral of chronic hepatitis B patients from primary to specialist care: Making a simple guideline work. *J Hepatol* 2004;41(6):1026–30. doi: 10.1016/j.jhep.2004.08.012.
- Hwang JP, Roundtree AK, Engebretson JC, Suarez-Almazor M. Medical care of hepatitis B among Asian American populations: Perspectives from three provider groups. *J Gen Intern Med* 2010;25(3):220–27. doi: 10.1007/s11606-009-1204-5.
- Robotin MC, George J, Supramaniam R, Sitas F, Penman AG. Preventing primary liver cancer: How well are we faring towards a national hepatitis B strategy? *Med J Aust* 2008;188(6):363–65. doi: 10.5694/j.1326-5377.2008.tb01656.x.
- Bowyer T. A nurse-led community hepatitis B clinic. *Nurs Times* 2014;110(7):18–19.
- Wallace J, Hajarizadeh B, Richmond J, McNally S, Pitts M. Managing chronic hepatitis B: The role of the GP. *Aust Fam Physician* 2012;41(11):893–98.
- Allard N, Matthews G, Robotin M, editors. B positive – All you wanted to know about hepatitis B: A guide for primary care providers. 2nd edn. Darlinghurst, NSW: Australasian Society for HIV Medicine (ASHM), 2014.
- Tremper S, Enright C. Chronic hepatitis B: Are GPs ready for shared care? Proceedings of the 7th Australian Conference in Viral Hepatitis; 6–8 September 2010; Melbourne, Vic.
- Tipper S, Penman A. NSW HBV and liver cancer pilot program: An update on the 'B Positive' Project. *Cancer Forum* 2009;33(2).
- Braun V, Clarke V. Using thematic analysis in psychology. *Qual Res Psychol* 2006;3(2):77–101. doi: 10.1191/1478088706qp0630a.

correspondence [ajgp@racgp.org.au](mailto:ajgp@racgp.org.au)