# A survey of Sydney general practitioners' management of patients with chronic hepatitis B


## Abstract

**Objective:** To examine the chronic hepatitis B (CHB) assessment and management practices of general practitioners in the Sydney and South Western Sydney Local Health Districts, areas with a high prevalence of CHB, and to obtain their views on alternative models of care.

**Design, setting and participants:** We used a descriptive, cross-sectional study design to survey GPs who had seen at least one patient aged 18 years or over who had been notified as having CHB to the Public Health Unit between 1 June 2012 and 31 May 2013. There were 213 eligible GPs; the response rate was 57.7%.

**Main outcome measures:** The CHB assessment, management and referral practices of the GPs, and their opinions about different models of care.

**Results:** Most GPs (78.9%) were at least reasonably confident about managing CHB. GPs were generally most comfortable with a model of care that involved initial referral to a specialist; managing CHB without specialist input or with only review by a specialised nurse practitioner were less popular.

**Conclusion:** These results suggest that barriers, including dependence on specialist input, still hinder the appropriate assessment and management of CHB patients by GPs. Well designed and targeted support programs that include specialist support are needed if there is to be a successful shift to an increased role for GPs in the model of care for managing CHB.



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doi: 10.5694/mja15.00524

In Australia, the prevalence of chronic hepatitis B (CHB) infection has increased over the past decade, with an estimated 218 000 Australians living with the disease.[1] The annual number of deaths attributable to CHB is also expected to rise from 450 in 2008 to 1550 in 2017.[2] Cost-effective treatments to reduce morbidity and mortality are available;[2-4] however, up to 44% of infected Australians remain undiagnosed[1,5] and only 2%–13% of those infected are receiving adequate treatment.[2,6]

The highest prevalence of CHB in New South Wales is in the Sydney and South Western Sydney Local Health Districts (LHDs), with respective estimated prevalence rates of 1.67% and 1.61% (the NSW average is 1.11%).[7] In these LHDs, a large proportion of the population was born in countries with an intermediate or high prevalence of CHB.[8,9] To relieve the pressure on specialist liver services, the *National Hepatitis B Strategy 2014–2017*[5] recommends an increased role for general practitioners in the management of CHB. We therefore examined the CHB assessment and management practices of GPs in the two LHDs, and the confidence that these GPs have in different models of care.

## Methods

We used a descriptive cross-sectional study design to survey GPs about case management. A questionnaire (Appendix) was developed by a steering group that included hepatologists, nurses, public health physicians, an infectious diseases physician and a GP. The survey also included a separate section on contact management; this is not discussed in this article.

Eligible GPs were those practising in Sydney LHD (SLHD) or South Western Sydney LHD (SWSLHD) who had had at least one patient aged 18 years or over who had been notified as having CHB to the Public Health Unit under the NSW Public Health Act 2010 between 1 June 2012 and 31 May 2013. A survey was posted to each GP, and those who had not returned it within 4 weeks received a telephone call and another copy of the survey. GPs were excluded if they no longer practised at the same location.

Returned surveys were coded and the data entered into Excel 2010 (Microsoft) and analysed with Excel 2010 (Microsoft), SAS Enterprise Guide 6.1 (SAS Institute) and Stata 10.0 (StataCorp). Blank responses were coded as "unknown". Demographic information for all GPs in SLHD and SWSLHD was obtained from the Inner West Sydney and South Western Sydney Medicare Locals.

Human research ethics approval was granted by the SLHD Ethics Review Committee (RPAH Zone), protocol number X13-0035.

## Results

Completed questionnaires were returned by 123 of 213 eligible GPs (57.7% response rate), with no statistically significant difference in response rate between SLHD and SWSLHD GPs ($P = 0.41$).

There were significant differences in sex, age distribution, and type of practice between the study participants and those of all GPs in SLHD and SWSLHD (Box 1). The average number of patients with CHB notified by responding GPs during the study period was 1.88, compared with 1.96 for non-responders ($P = 0.73$). Most GPs (97 of 123, 78.9%) estimated that they cared for 50 or fewer patients with CHB. GPs from SWSLHD were more likely than SLHD GPs to have cared for more than 50 patients with CHB (odds ratio [OR], 3.24; 95% CI, 1.08–9.68).

1 Demographic characteristics of the study participants ($n = 123$) and of all general practitioners in the Sydney and South Western Sydney Local Health Districts ($n = 1135$)

| | Study participants | All GPs | $P$ ($\chi^2$ test) |
|---|---|---|---|
| **Sex** | | | < 0.001 |
| Female | 31.7% | 40.3% | |
| Male | 67.5% | 59.7% | |
| Not recorded | 0.8% | 0 | |
| **Age group** | | | < 0.001 |
| < 30 years | 0 | 0 | |
| 30–39 years | 10.6% | 6.2% | |
| 40–49 years | 26.0% | 16.6% | |
| 50–59 years | 32.5% | 18.2% | |
| ≥ 60 years | 30.1% | 22.2% | |
| Not recorded | 0.8% | 36.7% | |
| **Local Health District** | | | NA |
| Sydney | 48.0% | | |
| South Western Sydney | 52.0% | | |
| **Type of practice** | | | < 0.001 |
| Solo | 35.8% | 19.0% | |
| Group | 63.4% | 80.8% | |
| Not recorded | 0.8% | 0.3% | |

NA = not applicable. ◆

GPs were asked how confident they were about different aspects of CHB assessment and management (Box 2). GPs who reported that they were "not very" or "not at all" confident were more likely than GPs who were "very" or "reasonably confident" to have cared for 50 or fewer patients (OR, 1.26; 95% CI, 1.14–1.40).

Box 3 summarises responses by GPs who were asked how comfortable they would be managing a patient with CHB in a number of different scenarios. GPs who were at least reasonably confident without specialist or hepatitis nurse input were more likely than those who were not to have cared for more than 50 patients with CHB (OR, 4.68; 95% CI, 1.28–17.16).

## Discussion

This is the largest survey of Australian GPs to have examined their CHB assessment and management practices, and their views about specific models of care. Our results have important implications for service development. We found that GPs were generally confident about diagnosing and managing CHB, and were most comfortable with a model of care that included an initial specialist review. However, a significant number of GPs were not confident about managing CHB, particularly without the support of a specialist. If there is to be a successful shift toward a CHB model of care in which primary health care plays an increased role,[5] this problem will need to be addressed by policy makers and medical educators. A framework that provides GPs with the support and resources necessary for appropriate CHB management is needed.

Most GPs felt confident about CHB management, but it is notable that almost one-fifth were "not very" or "not at all" confident. These GPs were more likely to have had a lower CHB patient load, and may thus have had less experience in this area. Previous surveys of Australian GPs have identified knowledge gaps about different aspects of CHB management.[8,10,11] Our findings are consistent with these reports, but also indicate that a supportive CHB model that enables GPs to easily access appropriate resources and specialised advice is required.

The current Australian CHB model of care is focused on specialist hepatological care; however, these services are facing huge demands, and it has been suggested that increased involvement of GPs is needed to

2 Confidence of general practitioners ($n = 123$) about different aspects of the assessment and management of patients with chronic hepatitis B (CHB)

| | Very confident | Reasonably confident | Not very confident | Not at all confident | Unknown |
|---|---|---|---|---|---|
| Identifying patients at risk of CHB | 49.6% | 48.8% | 1.6% | 0 | 0 |
| Screening patients at risk of CHB | 52.0% | 45.5% | 1.6% | 0 | 0.8% |
| Ordering appropriate tests for diagnosing CHB | 57.7% | 39.0% | 2.4% | 0 | 0.8% |
| Interpreting hepatitis B serology and DNA results | 43.1% | 47.2% | 7.3% | 1.6% | 0.8% |
| Managing patients with CHB | 22.8% | 56.1% | 17.9% | 1.6% | 1.6% |
| Undertaking surveillance of liver cancer | 30.9% | 57.7% | 8.9% | 1.6% | 0.8% |
| Referring for fibroscan | 12.2% | 35.8% | 35.0% | 16.3% | 0.8% |

3 Confidence of general practitioners ($n = 123$) about managing patients with chronic hepatitis B in various models of care

| | Very | Reasonably | Not very | Not at all | Unknown |
|---|---|---|---|---|---|
| With no specialist input | 8.9% | 48.0% | 29.3% | 12.2% | 1.6% |
| Initial referral to a specialist for assessment, then managed by GP | 43.1% | 45.5% | 8.9% | 0.8% | 1.6% |
| Initial referral to a specialist for assessment, then managed by GP with support from a hepatitis clinical nurse consultant | 37.4% | 45.5% | 9.8% | 5.7% | 1.6% |
| Initial review by a hepatitis clinical nurse consultant, then managed by GP | 18.7% | 40.7% | 22.8% | 16.3% | 1.6% |

deal with the growing burden of CHB,[2,5,12] as well as integrated nursing models and an exploration of the role of nurse practitioners.[5] The majority of surveyed GPs were most comfortable with a care model that included initial review by a specialist and continuing GP management, with less support for a model in which there was no specialist input, and a reluctance to accept review by a hepatitis clinical nurse consultant alone. The stated preference of GPs in our study for specialist input in CHB management has implications for future health service planning. If nursing support for GPs is to be successful in an alternative CHB model of care, background specialist support needs to be clearly promoted to gain the confidence of GPs and to optimise the management of CHB.

Our study has limitations. While the response rate compares favourably with other recent written GP surveys about CHB,[11,13] the possibility of response bias cannot be excluded. The significant difference in sex, age distribution, and type of practice between study participants and all GPs in the surveyed LHDs affects the external validity of our findings. While the steering group provided GP input into questionnaire development to improve its face validity for GPs, we did not test the questionnaire on another group of GPs; the applicability of the instrument to other settings is therefore unclear. Closed-ended and multiple-choice questions were used to facilitate the comparability of responses; however, their use may have prevented GPs from expressing other views.

This study identified that some GPs working in areas where the prevalence of CHB is high lack confidence about managing CHB. GPs in areas where CHB is less prevalent may encounter these problems to a greater extent, but further research is necessary to confirm this assumption and to thereby inform educational programs and service planning. As the CHB burden in Australia rises and the capacity of specialist liver services is tested, a new model of care focusing on primary health care needs to be developed, but must be considered carefully, noting the clear preference of GPs for specialist support. Our results suggest that well designed and targeted support programs that include specialist support are needed as part of a model of care which ensures that GPs feel confident about managing CHB.

**Competing interests:** No relevant disclosures.

Received 30 Apr 2015, accepted 7 Oct 2015. ■

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