

Distance and diversity: Understanding the challenges to hepatitis B care in the Barwon South-West region of Victoria

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BACKGROUND

- The Barwon South-West (BSW) region has an estimated 1,541 people living with hepatitis B virus (HBV): 20% are engaged in care and 48% of those who need treatment are accessing it.¹
- Engagement and treatment rates fall short of the national elimination goals.
- Data-driven, micro-elimination strategies are key to getting on track to eliminate HBV as a public health threat
- By understanding the distribution of populations that need HBV testing and care, we can develop targeted interventions and improved care pathways
- The aim of this study is to map the distribution of people living with and at risk of HBV in BSW, and the distribution of current HBV care services.

METHODS

- Study region: BSW spans from Greater Geelong to the South Australian border.² The population is ~465,000 people.³
- This was a descriptive, geospatial analysis. Study period: 2015 – 2022.
- Data were collected as outlined in Table 1.
 - Clustered postal areas (sub-regions) were determined using local government areas (LGAs) and significant and non-significant urban area classification.
 - Greater Geelong postal areas were divided into northern, central and Bellarine and coastal –Borough of Queenscliffe is included in the latter
 - Hepatitis B surface antigen (HBsAg) excluded pregnancy. This outcome is an estimated rate due to limitations in pathology service coverage in the region
 - Outcome 5 was determined using the quartiles of outcomes 1 and 3 to generate a composite map.
 - Data analysed using StataSE18
 - Maps were generated using ArcGIS Pro

Table 1: Outcomes and data sources

Outcome	Data source	Area type
1. Populations in need of a test -born in a country with an HBV prevalence $\geq 2\%$ -identifying as Aboriginal and/or Torres Strait Islander	2021 ABS Census ³	Clustered postal area
2. Estimated rates of initial HBsAg testing	Pathology services	Clustered postal area
3. HBV notification rates	Department of Health Victoria ⁴	LGA
4. HBV care services	ASHM HBV prescriber map ⁵ and local knowledge	Longitude and latitude
5. HBV testing need	Composite map of outcomes 1 and 3	Clustered postal area

RESULTS

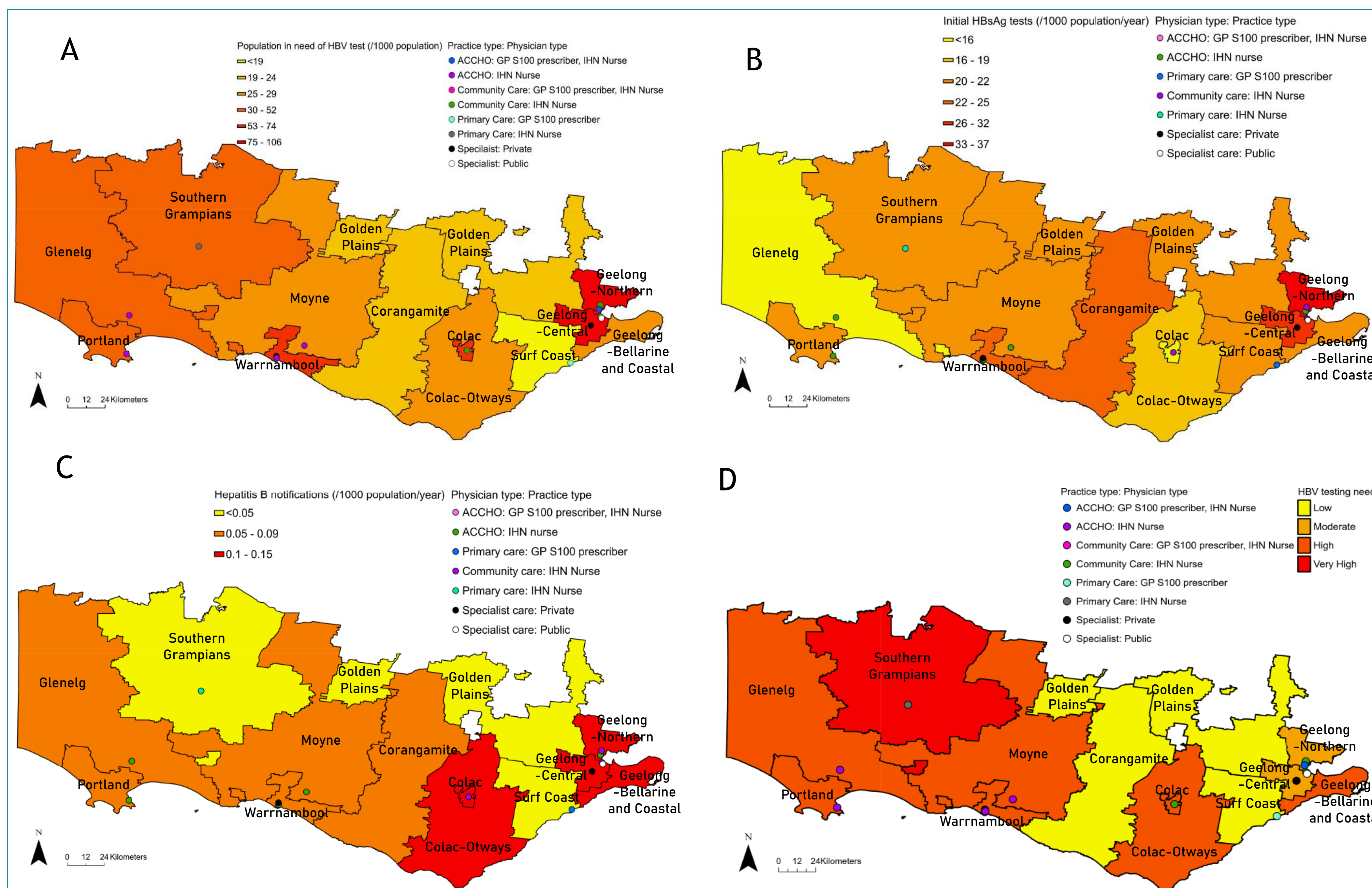


Figure 1: A) Population in need of a test (outcome 1); B) Estimated rates of HBsAg testing (outcome 2); C) HBV notification rates (outcome 3); D) HBV testing need (outcome 5). Very high and high regions have the lowest quartile for notifications (quartile 1) and the highest and second highest (quartiles 3 and 4) respectively for population in need of a test. Moderate indicates the notifications are moderate to high (quartiles 2-4) and the population in need of a test is moderate (quartiles 2-4) and low indicates the population in need of a test is in the lowest quartile (quartile 1). HBV health services shown on all maps (outcome 4).

- Across BSW 57/1000 people needed a test; overseas-born 43/1000 population migrating from 24 countries, and Aboriginal people 13/1000 populations
- The average area each HBV health service covers is ~3067 km²
- Geelong –Northern had the highest proportion of people born overseas (85/1000 population) and Glenelg had the highest Aboriginal population (28/1000 population) (Fig. 1A)
- Geelong –Northern had the highest rate of individuals receiving an initial HBsAg test (37/1000 population/year) (Fig. 1B)
- The LGAs of Greater Geelong and Colac-Otway had the highest rates of HBV notifications (0.14/1000 population/year and 0.13/1000 population/year respectively). Southern Grampians had the lowest (<0.01/1000 population/year) (Fig 1C)
- Of the two LGAs with the highest notifications, Greater Geelong has five health services providing HBV care while Colac-Otway has one.
- Fig. 1D indicates that there is a need to increase testing rates in the following sub-regions: Southern Grampians, Colac, Colac-Otway, Glenelg, Portland, Geelong –Bellarine and Coastal, Moyne and Warrnambool, and maintain current testing rates in Geelong –Northern and Geelong –Central.

DISCUSSION AND CONCLUSION

- Mapping data informs priority areas for interventions to increase testing of eligible populations.
- People requiring HBV care in BSW have diverse cultural and linguistic needs.
- Interventions should be tailored for each sub-region to help inform a micro elimination strategy that meets the specific needs of the HBV population and the capacity of the local services.
- In this low prevalence region, innovative solutions are required to link people living with HBV into the limited HBV health services available.

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