# Acceptability and preference of point-of-care finger-prick capillary whole-blood and venipuncture tests for hepatitis B viral load among people living with chronic hepatitis B

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UNSW Kirby Institute

UNSW SYDNEY

# Disclosure

For this study, a proportion of the GeneXpert diagnostic systems, servicing, training and Xpert® HBV Viral Load assays were provided in-kind by Cepheid.

# Objectives

To assess the performance and acceptability of HBV viral load point-of-care testing using fingerstick capillary blood, compared to standard-of-care venous blood testing.

# Methods

- Participants with chronic HBV were recruited from six hospital-based hepatitis clinics.
- Participants was offered both onsite finger-prick point-of-care testing (Xpert® HBV Viral Load assay), and venipuncture-based standard-of-care testing for HBV DNA quantification.
- Participants completed questionnaires assessing their acceptability and preference for each testing method, before (pre-test) and after (post-test) undergoing testing.

# Results

| Baseline characteristics | Total (n=259) |
|---|---|
| **Age, mean (SD)** | 48 (13.4) |
| **Female, n (%)** | 119 (46) |
| **Region of birth, n (%)** | |
| Australia | 20 (8) |
| East or South-East Asia | 178 (69) |
| South Asia or Middle-East | 27 (10) |
| Sub-Saharan Africa | 18 (7) |
| Other | 16 (6) |
| **HBV clinical management, n (%)** | |
| Initial assessment | 37 (14) |
| Monitoring only | 127 (49) |
| Treatment | 95 (37) |

**For HBV DNA ≥100 IU/mL:**
Sensitivity: 97.0% (95%CI: 94.9-99.1)
Specificity: 90.3% (86.6-94.0)

**For HBV DNA >2000 IU/mL:**
Sensitivity: 95.3% (92.7-98.0)
Specificity: 95.0% (92.4-97.8)

The Xpert® viral loads were a mean 0.12 log IU/mL higher than the gold-standard (95%CI: -0.43, 0.67).

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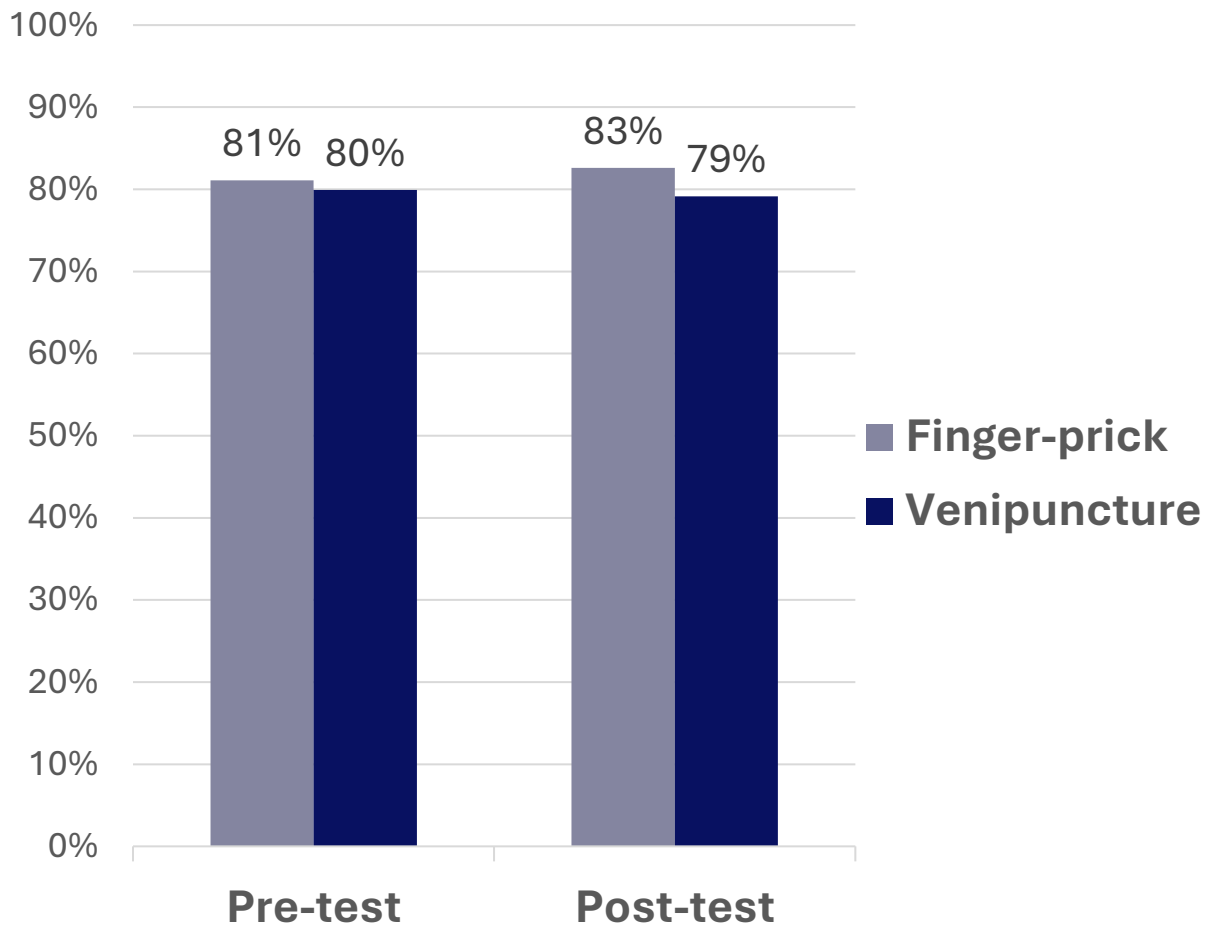
Proportion of participants who described each testing method “highly acceptable”, pre-test and post-test



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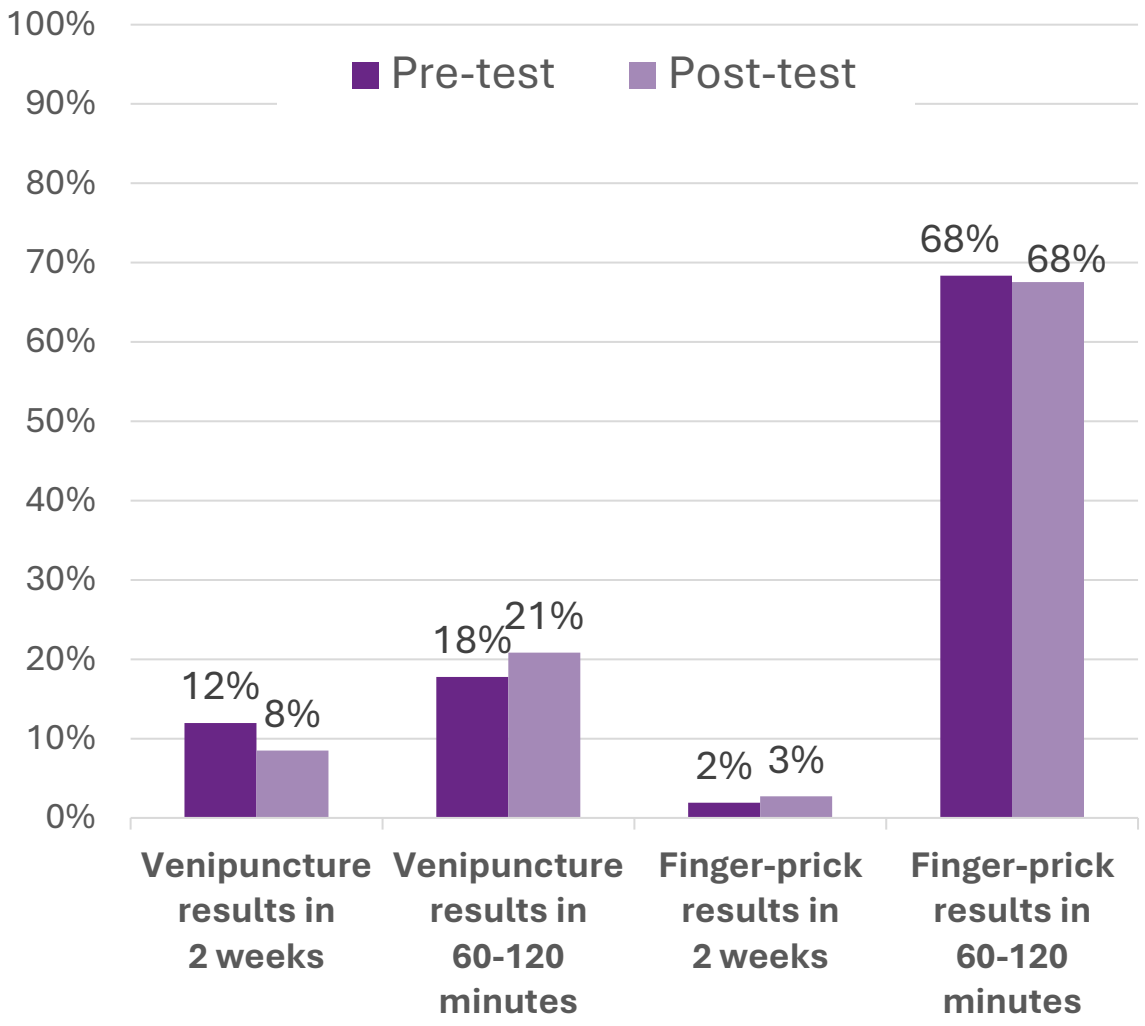
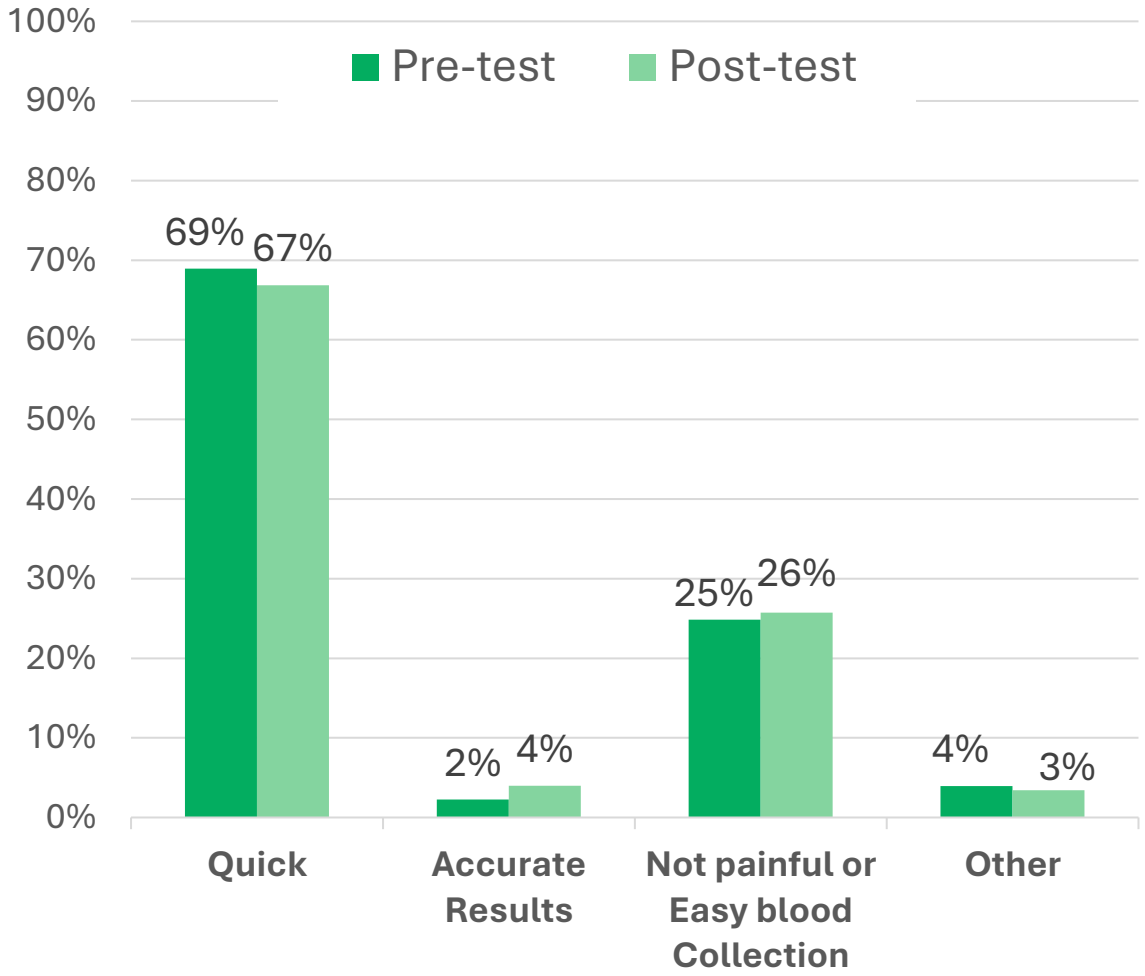

100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
Pre-test
Post-test
12%
8%
18%
21%
2%
3%
68%
68%
Venipuncture results in 2 weeks
Venipuncture results in 60-120 minutes
Finger-prick results in 2 weeks
Finger-prick results in 60-120 minutes


100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
Pre-test
Post-test
69%
67%
2%
4%
25%
26%
4%
3%
Quick
Accurate Results
Not painful or Easy blood Collection
Other

# Conclusion

- Although both methods were acceptable, participants preferred finger-prick point-of-care over venipuncture-based method for HBV DNA testing.
- Short time to get the results and easy and not painful procedure for blood collection were most frequently reported reasons
- Overall, the evidence provided by this project on both efficacy and acceptability, supports developing a dedicated Xpert® HBV DNA fingerstick assay for de-centralised clinical care, crucial for remote, resource-limited settings and hard-to-reach populations, including prenatal care for pregnant women with HBV.