Hepatitis C Seroprevalence, Viraemia, and Risk Factors for Positivity in Uganda

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BACKGROUND

The Hepatitis C virus (HCV) poses a significant public health challenge globally, with an estimated 170 million people chronically infected. Uganda is in the early stages of implementing the HCV test-and-treat program. However, there has been no national-level data to guide the efforts. To address this gap, we conducted a secondary analysis of archived samples from the UPHIA 2020 study to determine the national HCV prevalence. This data aims to inform targeted, phased HCV control interventions in Uganda.

METHODS

This was a cross-sectional study conducted between October 2024 and April 2025, utilizing 9,234 archived plasma samples.

- HCV was tested using the Antibody HCV TZ check kits (Tongzhou biotech).
- All positive HCV antibody samples were tested with the Roche cobas real-time Polymerase Chain Reaction (PCR) assay to confirm active HCV viraemia.
- Data analysis was done using RStudio with Bivariate analyses identifying variables associated with HCV positivity.
- This study was approved by the Uganda National Council for Science and Technology.

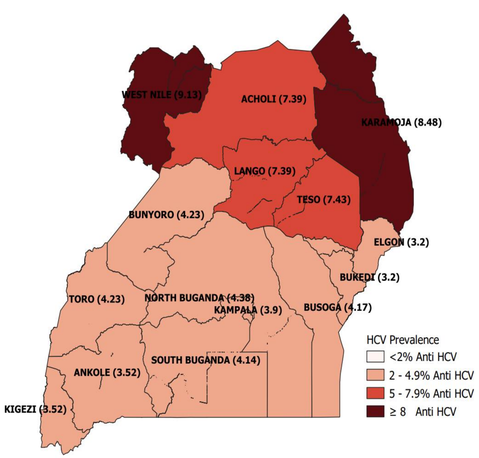
Uganda has a relatively high Anti-HCV Seroprevalence of 4.7%, but with very low HCV viremia of 0.03%.

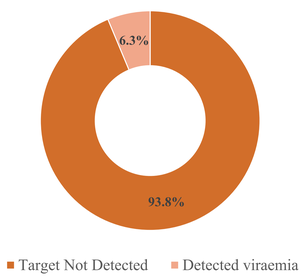
RESULTS

HCV Seroprevalence

- The overall National HCV seroprevalence was 4.7% (95% CI: 4.2–5.3) with regional variations. Individuals aged 15–22 years had significantly lower odds of Hepatitis C infection compared to those above 55 years (AOR = 0.59; 95% CI: 0.44–0.79; p = 0.0004).
- Compared to the Mid-Eastern region, individuals from the West Nile had significantly higher odds of Hepatitis C infection (AOR = 3.47; 95% CI: 2.21–5.43; p < 0.0001).
- Additionally, the socioeconomic status had an influence, with residence in rural areas being associated with a 31% increase in odds of HCV positivity compared to urban residence (AOR = 1.31; 95% CI: 1.02–1.67; p = 0.0339).

A map showing the national-level anti-HCV positivity rate of 4.72% (UPHIA 2020)





HCV Viraemia

- Only 3/9,234 (0.03%) samples had detectable RNA,
- Translating into 6.3% active disease within the 496 anti-HCV positive samples.
- According to the national guidelines, only these would qualify for treatment.

CONCLUSIONS

This study demonstrated the HCV sero prevalence and active viraemia for the first time in Uganda, and it proved a use case for the Secondary use of stored samples, underscoring the importance of leveraging well-funded surveys to address other public health needs.

These findings can be used to shape the future scale-up of the HCV testing and treatment program in Uganda.

ADDITIONAL KEY INFORMATION

Additional Resources: Access the primary UPHIA report online The PHIA Project: http://phia.icap.columbia.edu http://health.go.ug/

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CLINTON HEALTH ACCESS INITIATIVE

PLAIN LANGUAGE SUMMARY

- This study is the first to show how common hepatitis C infection is in Uganda and it proves that stored blood samples from national surveys can be reused to answer other important public health questions, saving time and resources.
- The findings will help guide Uganda as it plans to expand hepatitis C testing and treatment in the coming years.