

BURDEN OF HEPATITIS B AND C VIRUS INFECTIONS IN ARMENIA: METHODOLOGICAL CHALLENGES

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Background

Hepatitis B and C viruses (HBV and HCV) cause acute and chronic infections, with the latter having hepatic and extrahepatic manifestations and leading to cirrhosis and hepatocellular carcinoma (HCC). Up to 80% of HCC and two-thirds of cirrhosis cases are linked to these infections. Quantifying the health impact of HBV and HCV is important for any country for efficient allocation of resources to reduce the burden of these viruses.

Objectives

- To calculate age and sex specific burden of HBV and HCV infections in Armenia using DALYs.
- To include in the calculations the burden of chronic HBV and HCV infections.
- To inform policymakers to achieve effective reduction of HBV and HCV burden in Armenia.
- To come up with a model for estimation of HBV & HCV burden applicable in other countries.

Methods

A countrywide seroprevalence study among general adult population of Armenia, conducted in 2021, provided data on the prevalence of chronic HBV and HCV infections. Incident data on acute HBV and HCV infections, cirrhosis and HCC during 2021 were taken from official data holders like national e-health system "ARMED" and National Institute of Health of Armenia. All data were disaggregated by age and sex. The GBD study procedure was applied with some modifications to calculate the burden of HBV and HCV in Armenia.

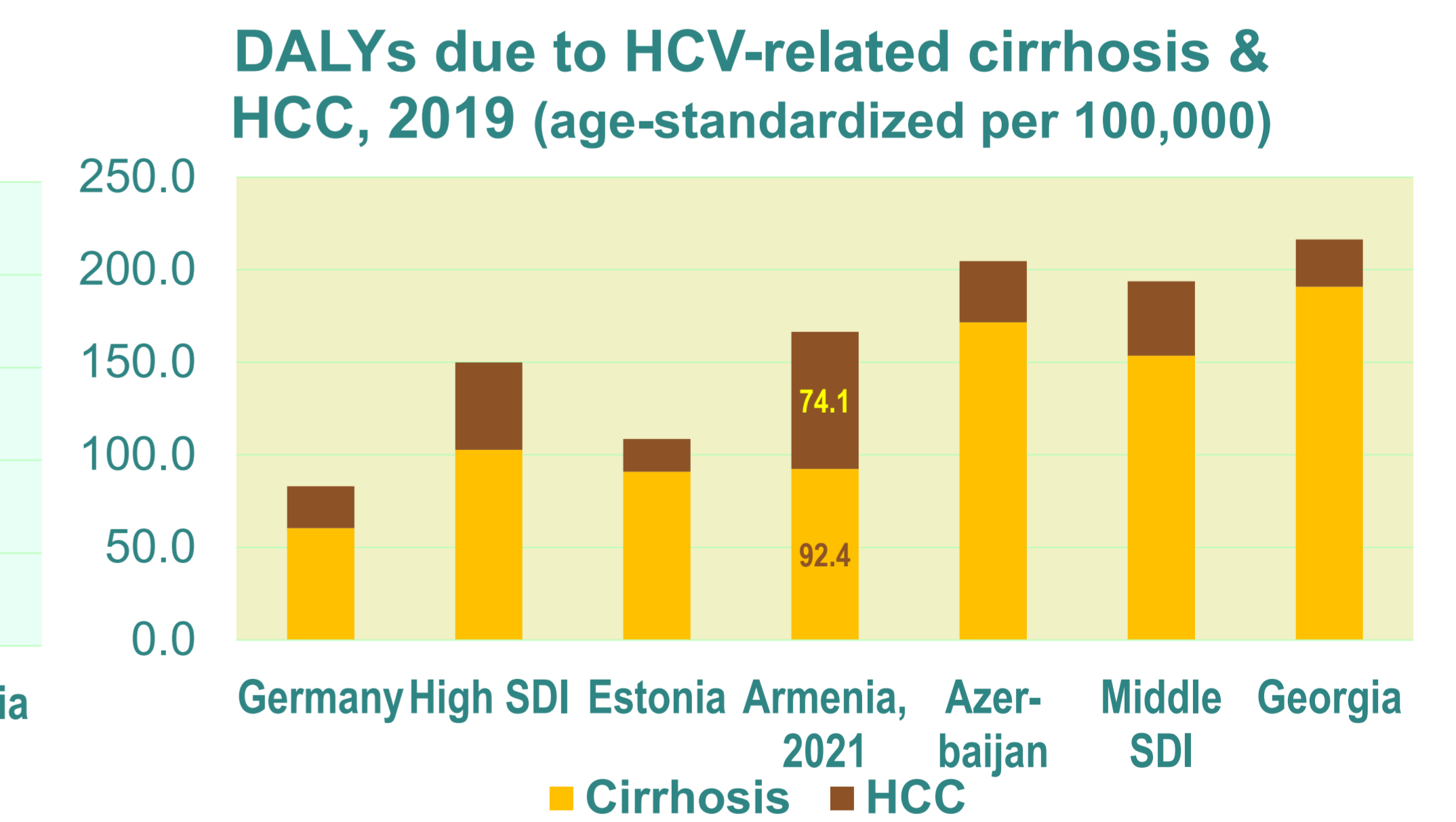
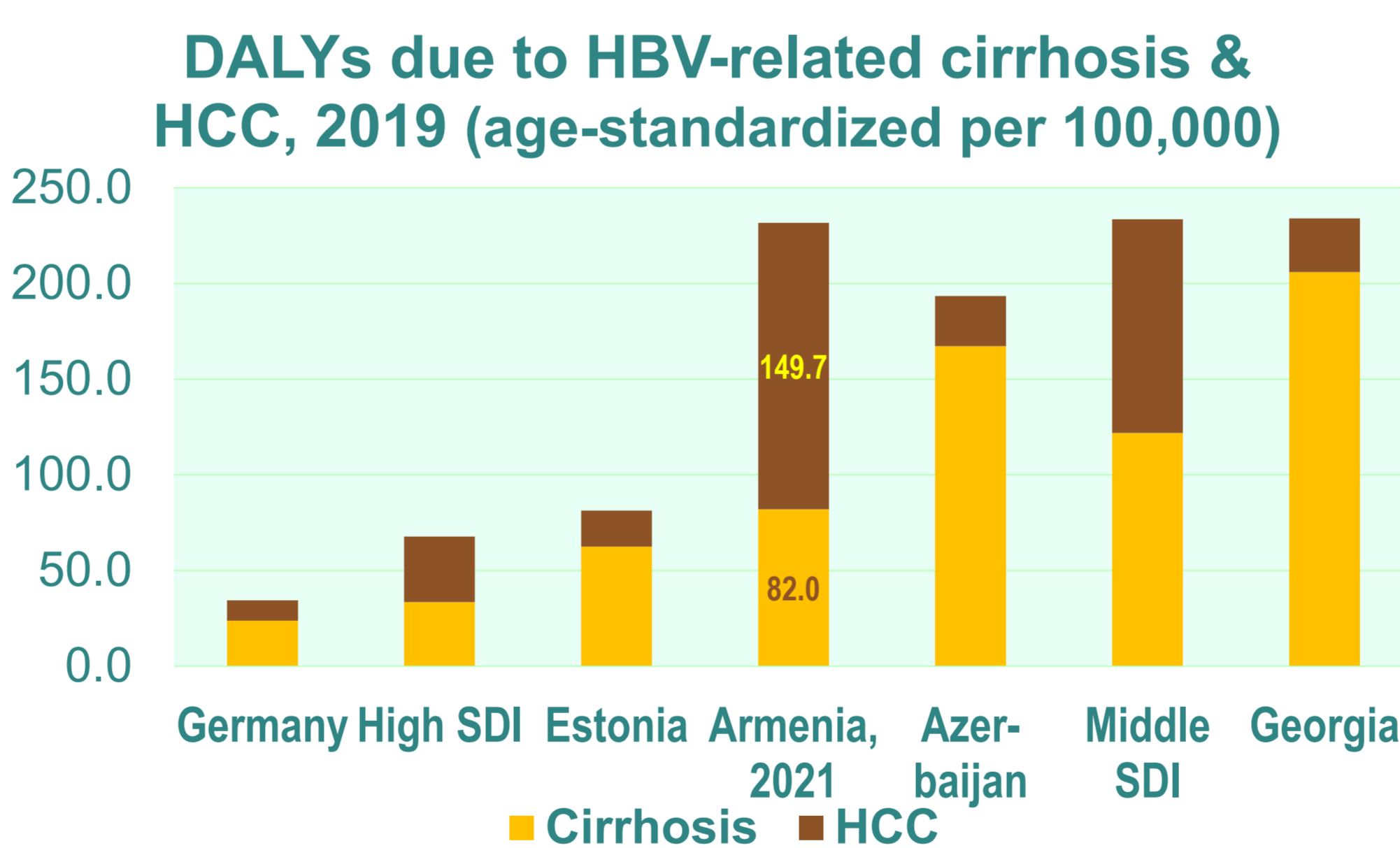
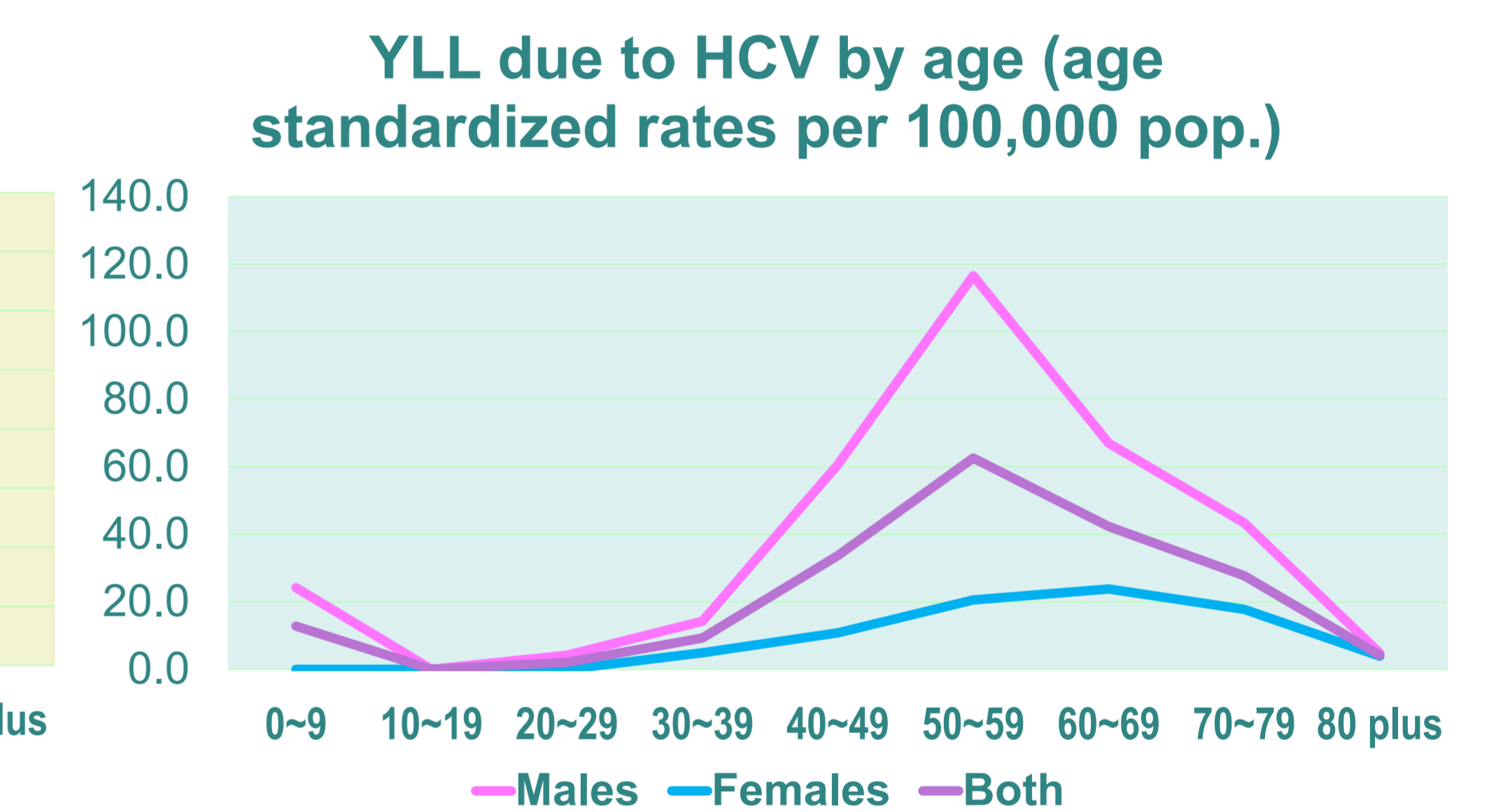
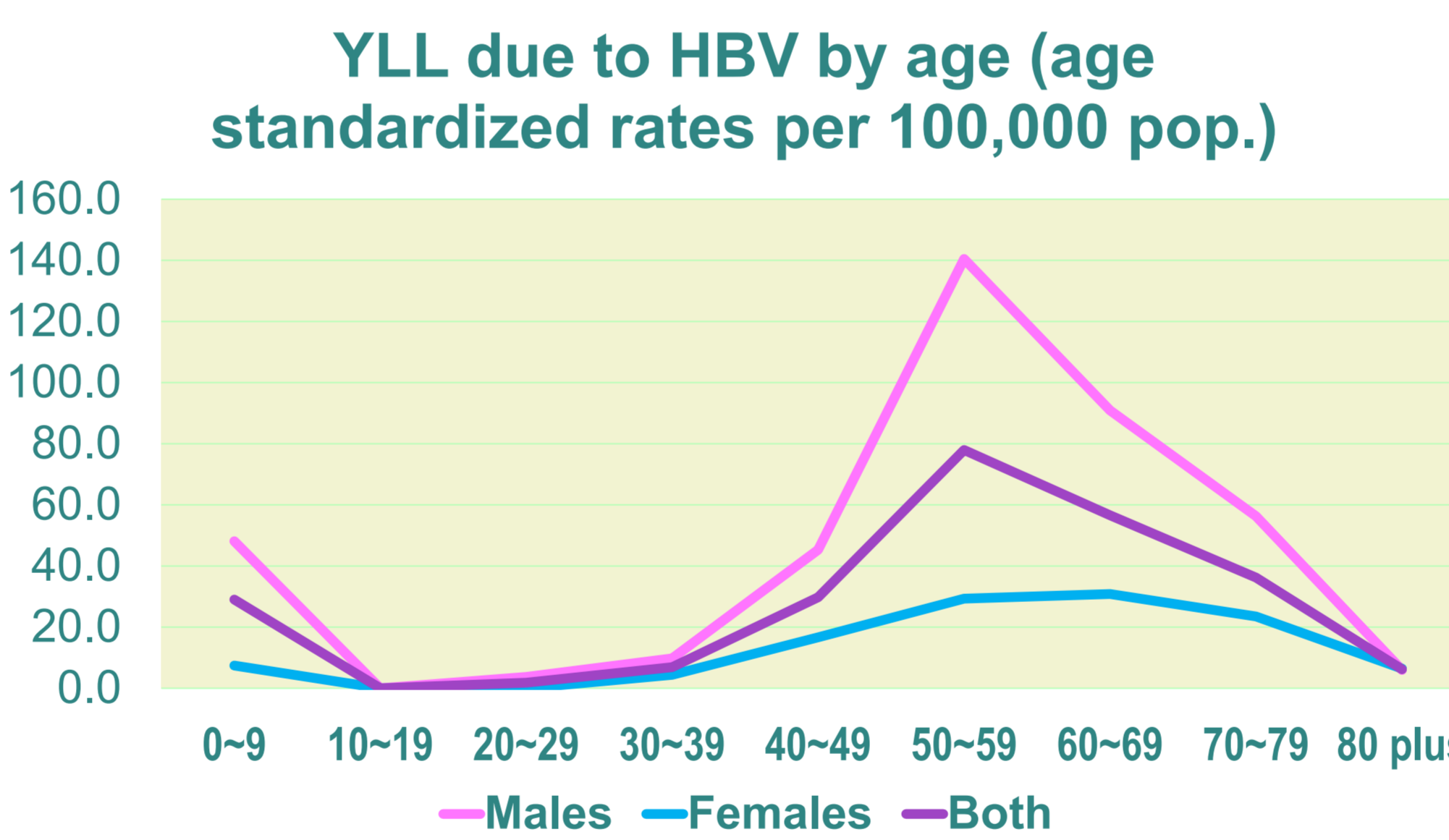
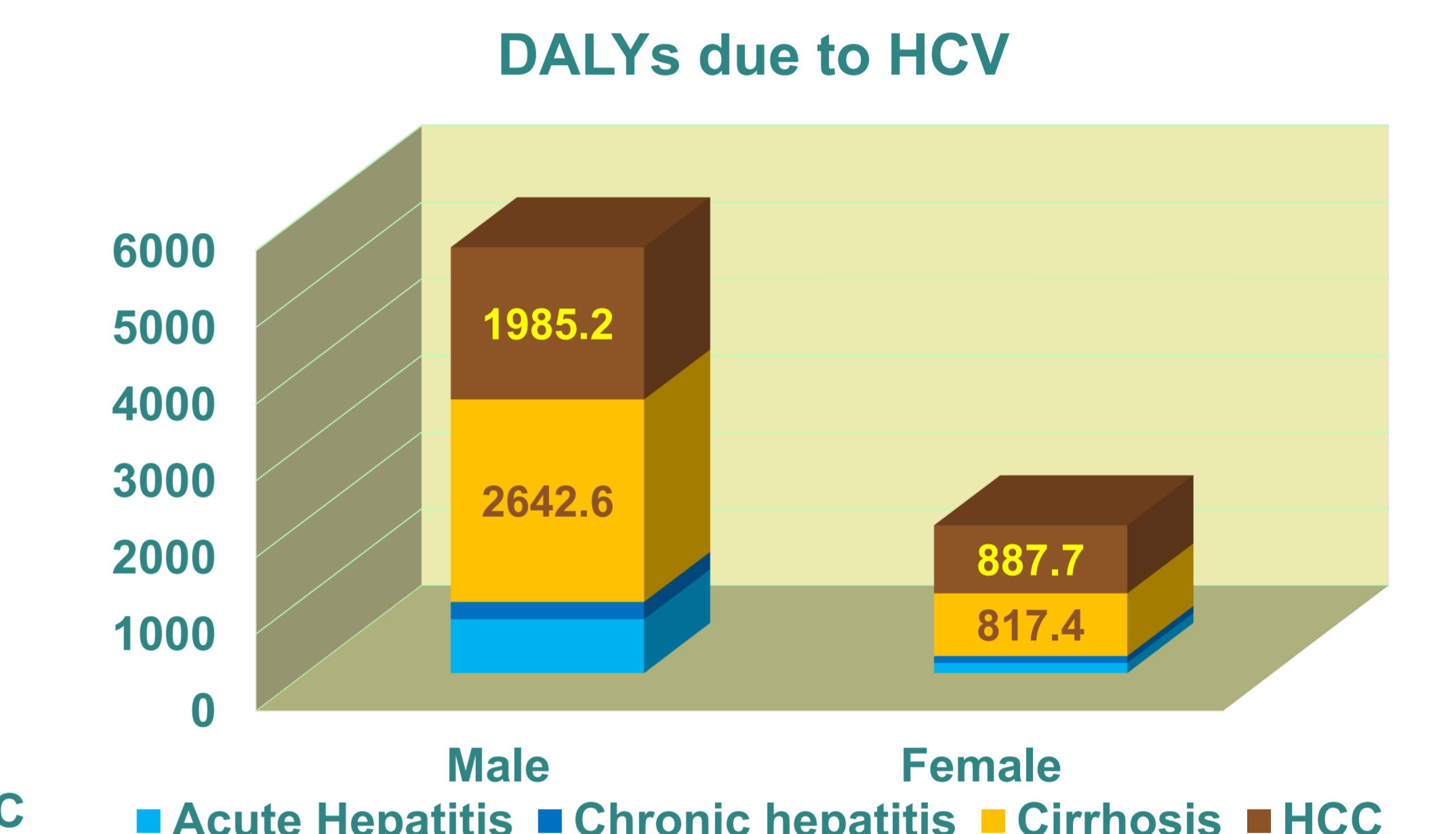
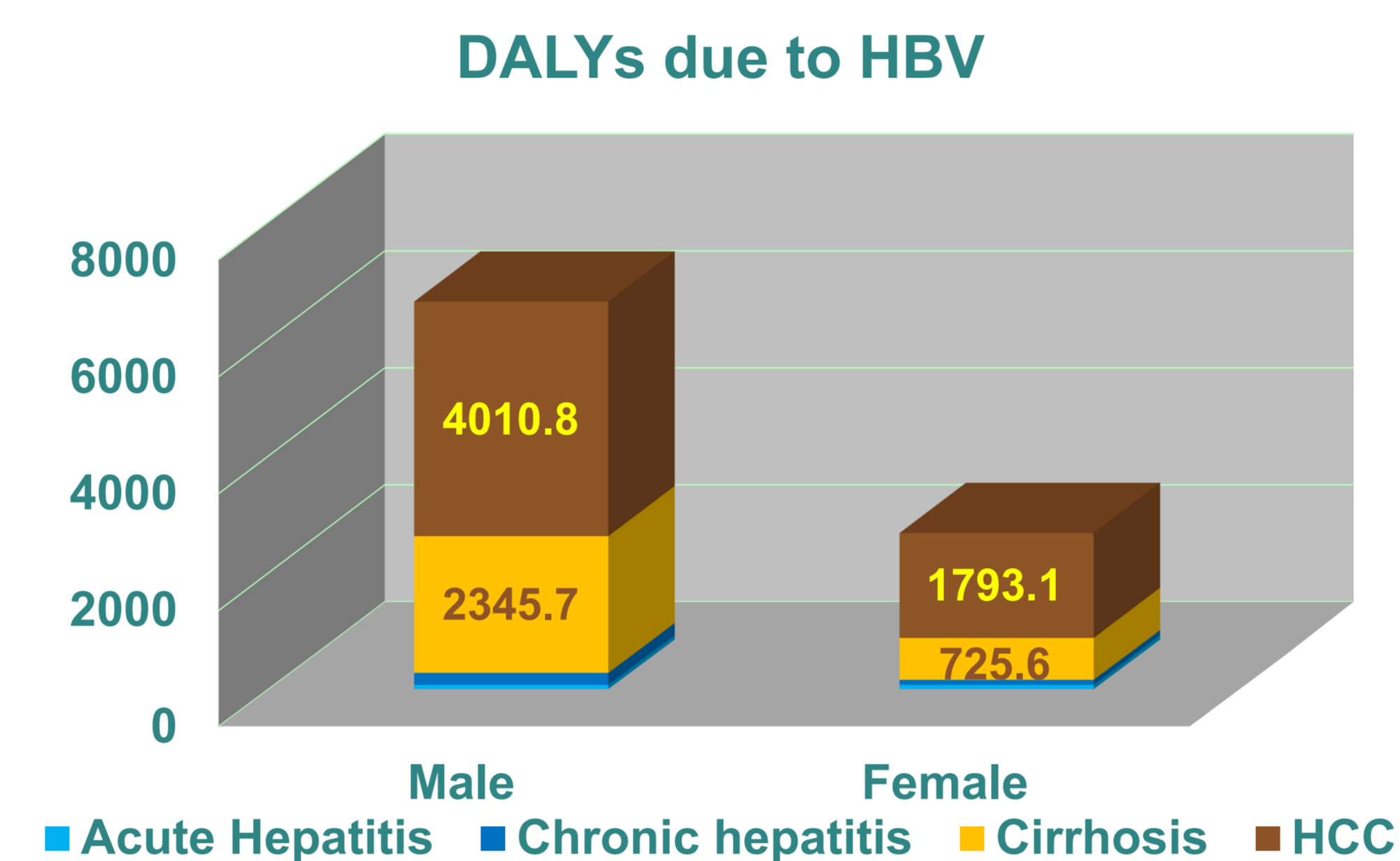
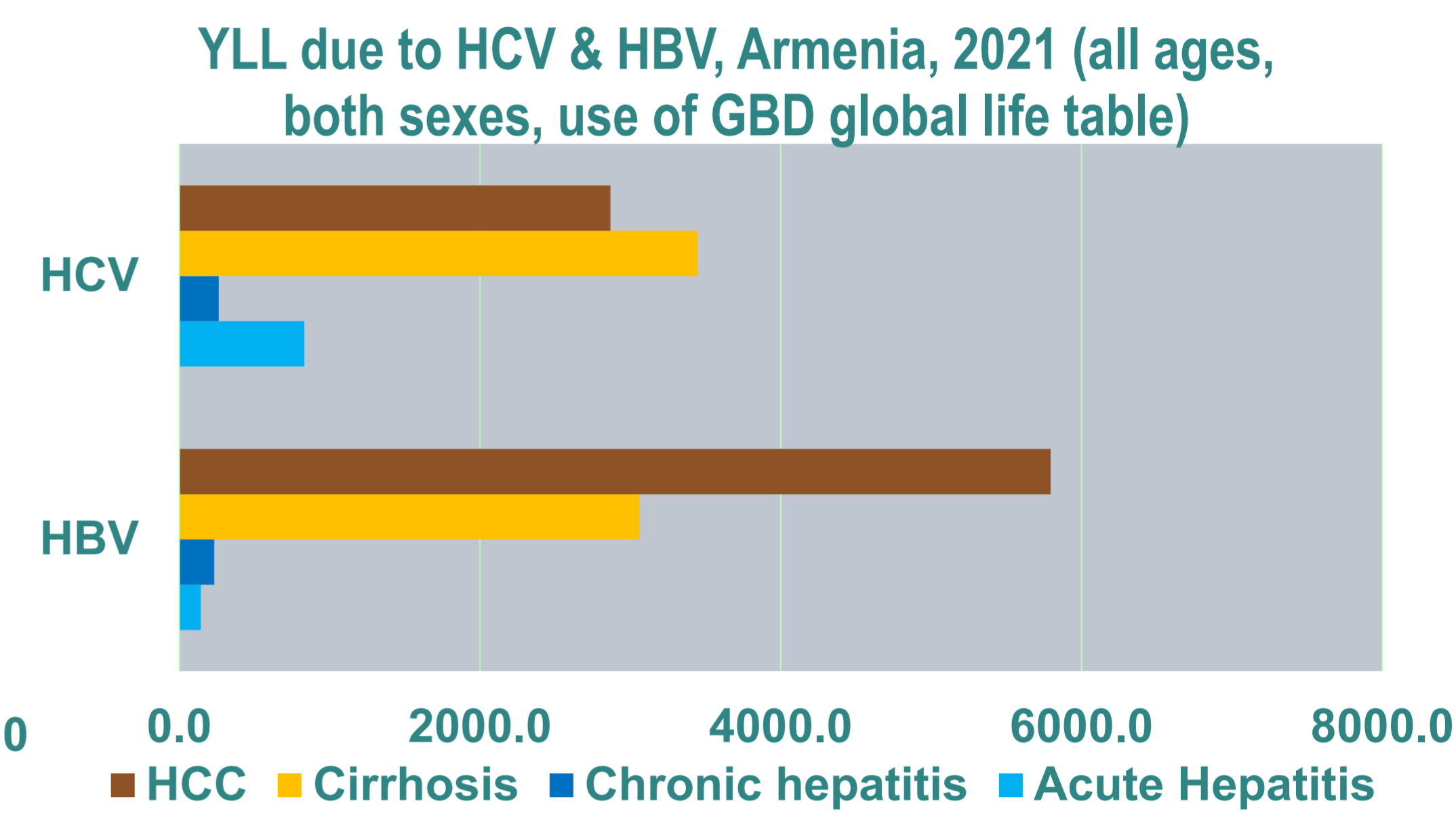
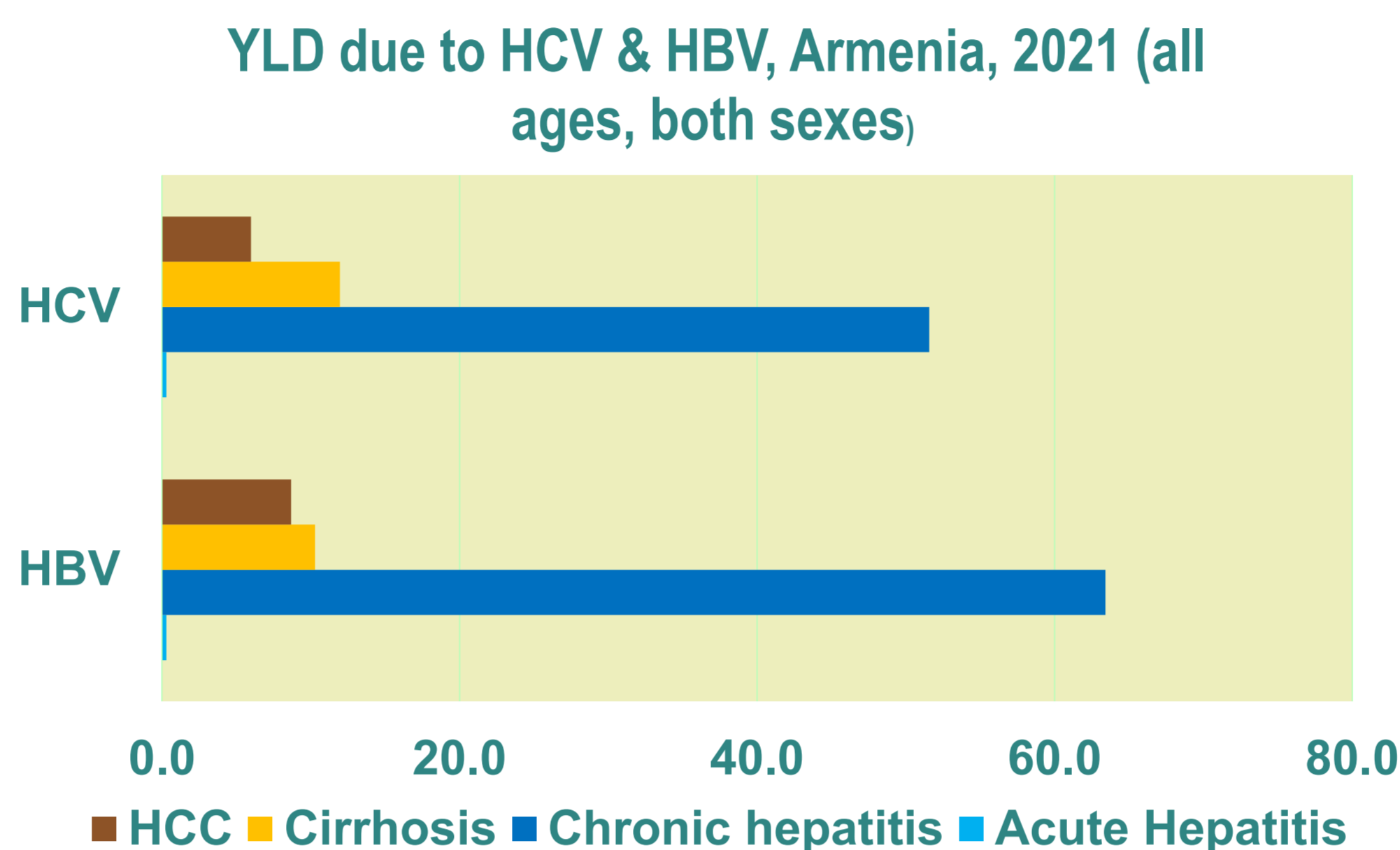
Main Challenges

- Including chronic hepatitis (omitted from the GBD model) in the calculations,
- Lack of Armenia-specific attributable fractions of cirrhosis and HCC due to HBV and HCV,
- Lack of suitable severity and stage distribution for the registered cases of cirrhosis and HCC,
- Dealing with underregistration of cases by the official sources because of possible incomplete coverage, and
- Potential underrepresentation of high risk groups in the seroprevalence study sample.

Conclusions

- Calculating disease burden with country specific data poses many methodological challenges.
- This work could yield a model of disease burden estimation for calculating HBV and HCV burden in other countries.

Results



- Years of Life Lost (YLL) caused by HBV and HCV vastly exceed Years Lived with Disability (YLD), constituting the main portion of Disability-Adjusted Life Years (DALYs) in Armenia.
- The main portion of DALYs is attributable to cirrhosis and HCC for both HBV and HCV.
- The burden of HCV and HBV among males exceeds that among females over two times.
- For both viruses, the burden is the highest among those aged 50-69 years.
- Compared to other Middle SDI countries, the burden of HBV or HCV-related cirrhosis is lower in Armenia, but the burden of HCC is higher.
- Compared to this study estimates, the GBD-2019 rates for Armenia are higher for HBV or HCV-related cirrhosis (107.9 and 129.7, respectively) and much lower for HBV or HCV-related HCC (38.3 and 53.0).

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