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Title: Hepatitis B screening—Universal or simplified semi-targeted but not the status quo

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Letter to the Editor:

We thank Dr. Cohen and colleagues for their interest in our manuscript, and for highlighting important issues surrounding hepatitis B virus (HBV) screening and advocating for universal screening (1). Our manuscript was motivated by a desire to improve the status quo regarding HBV screening. Existing recommendations endorsed by the Centers for Disease Control are cumbersome and include stigmatizing information including illicit drug use history, human immunodeficiency virus status, and country of birth. We agree that the failures of risk-based screening are clear and may contribute to HBV infection underdiagnosis (2).

While universal screening for HBV is easily understandable and may identify infection in those without apparent risk factors, the cost-effectiveness of universal screening remains controversial. This is largely due to limited literature as most cost-effectiveness studies focused on higher HBV seroprevalence groups (3). The well-conducted study by Toy et al, which found that universal HBV screening is cost-effective, was not published when we wrote our manuscript (4). As with all cost-effectiveness studies, it makes assumptions including excellent linkage to care and adherence to recommended HBV monitoring and treatment, whereas in real-world studies both linkage and adherence are suboptimal (2, 5).

Cohen et al had several specific comments on our study. First, they note that place of birth may be sensitive information. Our model only asks whether someone is born in the USA, not specific country of birth, which is still less stigmatizing than existing screening guidelines. Second, they raised questions about implementing a machine learning model. One could create a web-based calculator or a phone app in which one inputs the required data and is given an estimated risk of HBV infection and recommendation for whether screening is warranted. These are frequently used to compute other scores within hepatology such as Fibrosis-4. It may even be possible to program a calculator into the electronic medical record directly.

In summary, we share the concerns of Cohen et al. about the existing state of HBV screening and hope that our models may improve screening practices.

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