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## COVID-19 vaccine prioritisation for type 1 and type 2 diabetes

With the availability of SARS-CoV-2/COVID-19 vaccines, a crucial challenge is the prioritisation of groups of individuals to receive vaccines that will be in limited supply for some time.<sup>1</sup> Several clinical reports have described greater morbidity and mortality from COVID-19 in people with diabetes, often accompanied by obesity. Most of this information is from individuals with type 2 diabetes, with less known about the risk in type 1 diabetes, a phenotypically distinct disorder. Experts have cautioned against extrapolating from studies of type 2 diabetes to individuals with type 1 diabetes.<sup>2</sup> In the USA, the

Centers for Disease Control and Prevention (CDC) currently categorise type 1 and type 2 diabetes differently in terms of risk for severe illness from COVID-19, with people with type 2 diabetes considered “at increased risk for severe illness” and those with type 1 diabetes categorised as “might be at increased risk”.<sup>3</sup>

Importantly, several recent studies<sup>4–6</sup> have shown that both people with type 2 diabetes and those with type 1 diabetes have an increased vulnerability to serious illness from SARS-CoV-2 compared with people without diabetes. In relative terms, patients with type 1 diabetes and those with type 2 diabetes had similar adjusted odds ratios (ORs) for hospitalisation (3.90 for type 1 diabetes vs 3.36 for type 2 diabetes),<sup>5</sup> severity of illness (3.35 vs 3.42),<sup>5</sup> and in-hospital mortality (3.51 vs 2.02).<sup>4</sup> In a population-based study in Scotland, the risk of fatal or critical care unit-treated COVID-19 was increased for both diabetes types (OR 2.4 with type 1 diabetes vs 1.4 with type 2 diabetes).<sup>6</sup>

Because risk classification and recommendations by the CDC and other health policy makers influence decisions by states and health systems related to vaccine prioritisation, these findings should prompt an immediate revision by the CDC and others of risk assessment, placing individuals with either form of diabetes in the same high-risk category. Such a change in risk categorisation will place the more than 1.6 million people in the USA with type 1 diabetes in the same prioritisation category as those with type 2 diabetes and other high-risk conditions. We call on public health officials and governors throughout the USA, as well as relevant policy makers in other countries, to carefully consider this new information as recommendations for vaccine prioritisation are developed.

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## Chronic hepatitis, osteoporosis, and men: under-recognised and underdiagnosed

In a recent Editorial,<sup>1</sup> *The Lancet Diabetes & Endocrinology* highlighted the public health concern of osteoporosis in men. Osteoporosis is particularly common in older adults (≥50 years) and is associated with increased morbidity and mortality. Osteoporosis is so common that close

to 50% of women and almost 25% of men aged 50 years and older will break a bone due to osteoporosis.<sup>2</sup> Studies from the past few decades of osteoporotic fractures have also reported that men have worse outcomes, including increased mortality, than women after an osteoporotic fracture.<sup>3</sup>

Reasons for these poorer outcomes among men remain elusive; however, older age and multimorbidity appear to be related to an increased risk of dying within the first year after a fracture.<sup>3</sup> As such, these reasons are important for those with chronic hepatitis B, a disease that affects more than 290 million people worldwide.<sup>4</sup> Hepatitis B is known to be associated with a higher risk of osteoporosis and disproportionately affects men, especially older men.<sup>5</sup> One study quantified this risk and found that the risk of an osteoporotic fracture was 9% higher in those with chronic hepatitis B than matched controls without the condition.<sup>6</sup> The investigators also noted an increasing trend for osteoporotic fractures among patients with chronic hepatitis B from 2007 to 2016.<sup>6</sup>

Furthermore, older viral suppression drugs for hepatitis B are known to be associated with an increased risk for osteopenia and osteoporosis.<sup>7</sup> In addition, other medical conditions such as cirrhosis, chronic cholestatic liver disease (eg, primary sclerosing cholangitis), and solid organ transplantation disproportionately affect men and predispose individuals who are affected to osteoporosis.<sup>8</sup> As there are no US or EU preventive task force guidelines to screen men for osteoporosis based on traditional risk factors for osteoporosis, men remain underdiagnosed in these regions.

We welcome the Editorial<sup>1</sup> in addressing the issue of underdiagnosis and undertreatment of osteoporosis in men, a highly relevant clinical issue and a timely public health concern. As we have noted, this health inequality

is also important in the hepatology field due to the increasing age and comorbidity burden among those with chronic hepatitis B and the rising incidence of cirrhosis. By working together with other specialties, hepatologists can help raise awareness of this clinical and public health issue to promote osteoporosis screening for men, especially among older men with a high comorbidity burden such as those with chronic hepatitis B, cirrhosis, and chronic cholestatic liver disease.

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