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Reply to Jones

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To the Editor

We thank Jones for his comments and the opportunity to clarify a number of points from our work [1]. Our intent is transparency with regard to the US epidemiology of hepatitis A and clarity with regard to interpretation of data and results. We are concerned about potential misinterpretations.

First, we emphasize that we did not recommend, on the basis of our analyses [1], immunization of all adults, as we clarified in our previous correspondence to Nelson [2]. Rather, because hepatitis A vaccine is highly immunogenic, we suggested that investigators explore a 1-dose hepatitis A vaccine strategy among adults as a possible way to prevent complications of future outbreaks. Readers are likely aware of the World Health organization Strategic Advisory Group of Experts recommendation that advises exploration of a 1-dose hepatitis A vaccine regimen in countries where the current national immunization program uses a 2-dose regimen [3].

The importance of our work is highlighted by a number of large, multifocal outbreaks of hepatitis A, mostly affecting adults. In all of these outbreaks, the source of transmission was a food item that was imported from a country where hepatitis A is endemic. Concurrently, the US Department of Agriculture reported that, from 1999 to 2013, there were notable increases in the volume of fruits and vegetables imported into the United States [4]. Because the infected individuals are mostly or all adults, these outbreaks can result in severe infections that frequently require hospitalization. For example, in the 2013 multifocal outbreak, 72 of 165 cases (44%) identified in the outbreak were hospitalized [5]. Two individuals developed fulminant hepatitis, and 1 underwent liver transplantation [5]. More-recent data from the National Notifiable Diseases Surveillance System are consistent with earlier trends. An analysis of 2013 data indicated that the proportion of hospitalizations

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among hepatitis A cases continued to increase, from 24.5% in 2011 to 28.3% in 2013 (unpublished data).

The statement "[b]ecause of changes in hepatitis A epidemiology, adults are now at higher risk of HAV infection in the United States" [1, p. 182] was based on recent studies that showed that adults had a lower seroprevalence of HAV antibodies, compared with children [6], and that the seroprevalence of HAV antibodies among adults, especially those aged 50–59 years, decreased between 1988–1994 and 1999–2006 [7]. Figure 2 from our work described the shift in age groups among hepatitis A cases during 1999–2011 [1, 2]. The additional data presented in our reply to Nelson also confirm this statement [2]. In 2000, 56.2% of reported hepatitis A cases were among persons aged 20–59 years. In 2013, the proportion of cases in this age group increased to 65.3% [2]. The mean age of all reported cases of hepatitis A also increased from 29.7 years, in 2000, to 43.6 years, in 2013% [2]. Additionally, the overall number of newly reported cases of hepatitis A in the United States has increased, with 1398 cases in 2011, 1562 cases in 2012, and 1781 cases in 2013 [8]. These analyses document not only a continuing increase in the number of reported hepatitis A cases, but also an increase in the number of cases among older adults.

Our findings are consistent with a national estimate of complications associated with major infectious foodborne diseases [9]. This study used active surveillance in addition to other data sources to estimate hospitalization and mortality rates from US-acquired foodborne pathogens and found that the estimated hospitalization rate for hepatitis A in 2011 was 31.5%, compared with <1.7% for disease due to other viral foodborne pathogens. The estimated mortality rate for hepatitis A was 2.4%, compared with <0.1% for disease due to other viral foodborne pathogens.

In conclusion, our study indicated an overall decline in the incidence rate of hepatitis A cases from 1999–2011. Hepatitis A morbidity and mortality continue to occur, but most of these events are likely associated with the increasing age of susceptible individuals, because vaccination coverage among young persons is increasing. We hope that we have clarified any unintended misunderstandings. Our goal is to prevent hepatitis A virus infections and their potential complications.

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