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COMMENT LETTERS

Seroprevalence of Chikungunya Virus, Jamaica, and New Tools for Surveillance

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To the Editor: We read with great interest the recent article by Anzinger et al. (1), who found a seroprevalence of 83.6% for chikungunya in pregnant women in the metropolitan region of Kingston, Jamaica. These data are similar to the seroprevalence found nationwide by the Jamaica Health and Lifestyle Survey III, 2016–2017 (Ministry of Health and Welfare, Jamaica), which was 82% among women, 78.5% among men, and 80.4% overall. These values enable estimating a total of 2,187,325 chikungunya infections in Jamaica during the 2014 epidemic. The government of Jamaica reported

1,420 cases of chikungunya to PAHO in 2014 and no deaths (2), even correcting for the proportion of unapparent infections, the proportion of cases captured by passive surveillance was <0.1%. Although there were no officially reported deaths in Jamaica, 2 cases of newborn deaths from chikungunya were reported (3), and 1 study found 2,499 excess deaths (2) during the epidemic period. The increase in mortality was greater for the extremes of age, but it occurred in several age groups (2).

Anzinger et al.'s results reinforce the findings of Sharp et al. (4), who showed the importance of active surveillance to assess chikungunya burden. Through active surveillance implemented in Puerto Rico, it was possible to verify that 8% of symptomatic cases of chikungunya identified were captured by passive surveillance. In addition, passive surveillance identified 7 deaths, whereas active surveillance was able to confirm 31 deaths from chikungunya. However, 1,310 excess deaths were reported during the Puerto Rico epidemic in 2014 (5).

The introduction of chikungunya in the Americas has brought greater complexity to surveillance in the region, which includes some low-resource countries. It is essential to establish active and viable surveillance tools and, perhaps, new case definitions in order to better assess the population burden of this disease and the complications of acute and chronic cases.

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In Response: I thank the authors for their favorable commentary (1) related to our recently published article (2). In their commentary the authors note that the low number of chikungunya cases captured through passive surveillance underrepresents the true burden of disease in Jamaica, particularly fatal infections during the 2014 chikungunya epidemic year (3).

Underreporting of chikungunya cases in Jamaica has been acknowledged and has multiple factors (4). Most chikungunya cases are not captured through a passive clinic-based surveillance (5), and in Jamaica most case-patients likely did not seek care at the advanced public health center passive surveillance sites. In addition, real-time PCR, the most sensitive diagnostic test type during acute infection, was highly limited in Jamaica during the 2014 chikungunya epidemic. For these reasons, identification of chikungunya cases through passive surveillance was expected to represent only a small fraction of the population.

It is possible that many excess deaths in Jamaica during 2014 were the result of chikungunya virus infections escaping surveillance. Chikungunya fatalities may be difficult to capture with limited surveillance capacity.

Furthermore, chikungunya virus infections, particularly in the elderly, may exacerbate existing comorbidities and lead to extended hospitalization that could result in nosocomial infections; either event may prove fatal and ultimately be considered the cause of death (6).

During the COVID-19 pandemic in Jamaica, surveillance systems have been bolstered; the Ministry of Health and Wellness introduced broad community-based testing, many diagnostic laboratories have introduced real-time PCR testing, and the University of the West Indies has introduced next-generation techniques sequencing techniques for whole-genome sequencing of viruses. Further enhancing responses to emerging viruses, the University of the West Indies recently became a member of the Abbott Pandemic Defense Coalition that aims to increase virus surveillance and discovery (7). This increased infrastructure will likely improve surveillance for future viral epidemics in Jamaica.

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