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Low anti-rubella antibody levels in public facilities staff in Tokyo

As of Oct 22, 2018, the US Centers for Disease Control and Prevention warned pregnant women to refrain from travelling to Japan, especially to the Kantō region, if not fully protected from rubella, raising its alert level to 2 ("practice enhanced precautions").¹ According to the National Institute of Infectious Diseases (Tokyo, Japan), 2586 cases of rubella were diagnosed between Jan 1 and Dec 12, 2018.² The greater Tokyo metropolitan area in Japan is facing a huge outbreak of rubella this year, for which the Ministry of Health, Labour, and Welfare issued an alert³ on Aug 14, 2018.

Congenital rubella syndrome can be prevented by keeping the anti-rubella antibody at a high concentration by vaccination. Among various methods of screening for immunity against rubella, the haemagglutination inhibition assay is a commonly chosen method by the municipal government to investigate the seroprotective status of the population in Japan. An

antibody titre of 1/16 or less measured by this assay is considered by Japanese authorities to be an inadequate level of protection. At the Eijudo Clinic in east-central Tokyo, we conducted rubella screening during the previous rubella outbreak⁴ in Japan in 2013. Seven (41%) of 17 staff members at the clinic had antibody titres of 1/16 or less based on the haemagglutination-inhibition assay. In the same year, 14 344 cases of confirmed rubella and 32 cases of congenital rubella syndrome were reported in Japan.⁵ Since then, the local medical association has been successful in promoting rubella titre screening for faculty members at all public schools within the ward, but, so far, has been unable to convince the population naive to rubella exposure to be vaccinated. In 2018, before the outbreak became apparent, we carried out the same screening on 39 faculty members of an elementary school close to Eijudo Clinic in Tokyo, and found that 15 participants (39%) had antibody titres of 1/16 or less.

Despite the 5 years that have passed since the last outbreak, the alerts issued, and the strong continuous recommendations from the government to complete rubella vaccination, the proportion of seroprotected individuals in the population remains low, allowing unvaccinated and under-vaccinated individuals to be infected. The settings for the aforementioned screenings, a clinic and an elementary school, are similar in that they are both potential public sources of rubella exposure for pregnant women. We speculate that the low antibody titres seen among these probe populations in the Tokyo area might reflect the situation throughout Japan, based on common and average Japanese attitudes towards vaccines, outbreak response, and public health interest. We are concerned about this risk for pregnant women in or travelling to the greater Tokyo metropolitan area, and to the surrounding Kantō region. As well as alerting people in these populations,

we strongly suggest screening and (where necessary) vaccination of staff members in settings where pregnant women are likely to visit.

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Dengue pre-vaccination screening and positive predictive values

Although Sanofi Pasteur's dengue vaccine CYD-TV (Dengvaxia) is already licensed in 20 countries, WHO only recommends its use in individuals from endemic settings with serological confirmation of past dengue virus infection. This pre-vaccination screening recommendation followed an announcement¹ in November, 2017, and a paper² published in 2018 that showed that, in the long-term follow-up of phase 3 clinical trials, vaccine recipients who had not been infected by dengue before vaccination (ie, seronegative individuals) had