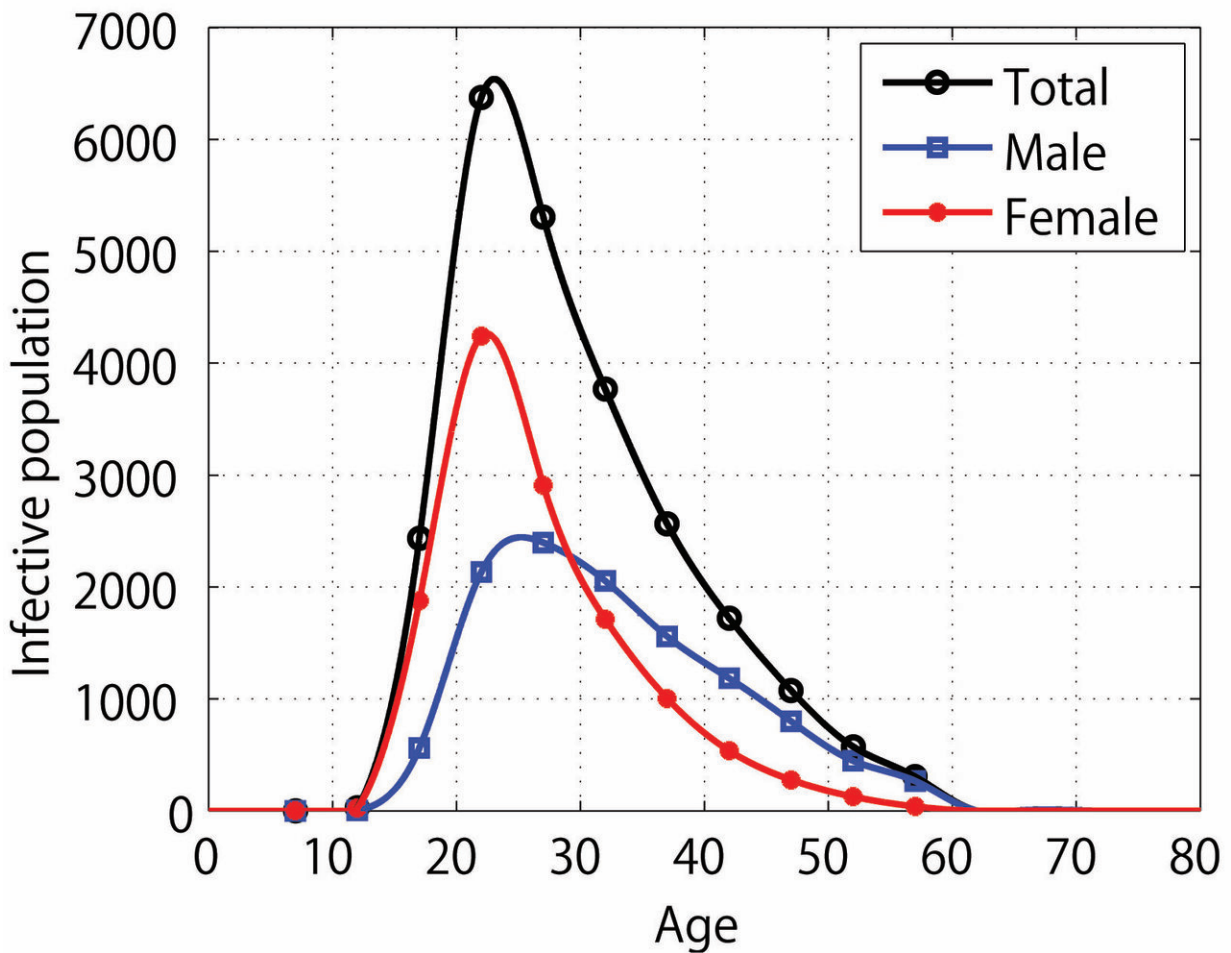


# Epidemiological model lends insight to chlamydia outbreak in Japan

February 19 2019



Interpolation of age-distributions of reported cases of chlamydia in Japan in 2015. Credit: Toshikazu Kuniya, *SIAM Journal on Applied Mathematics*.

Mathematical models that quantify the dynamics of infectious diseases are crucial predictive tools for the control of ongoing and future outbreaks. An infection's basic reproduction number ( $R_0$ ) is especially important to disease modeling and epidemiology, as it determines global behavior and measures a disease's transferability within a fully-susceptible population. In short,  $R_0$  helps public health officials discern an epidemic's intensity and the likelihood of its successful spread. If  $R_0 > 1$ , an outbreak occurs. If  $R_0 < 1$ , an outbreak does not occur.

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