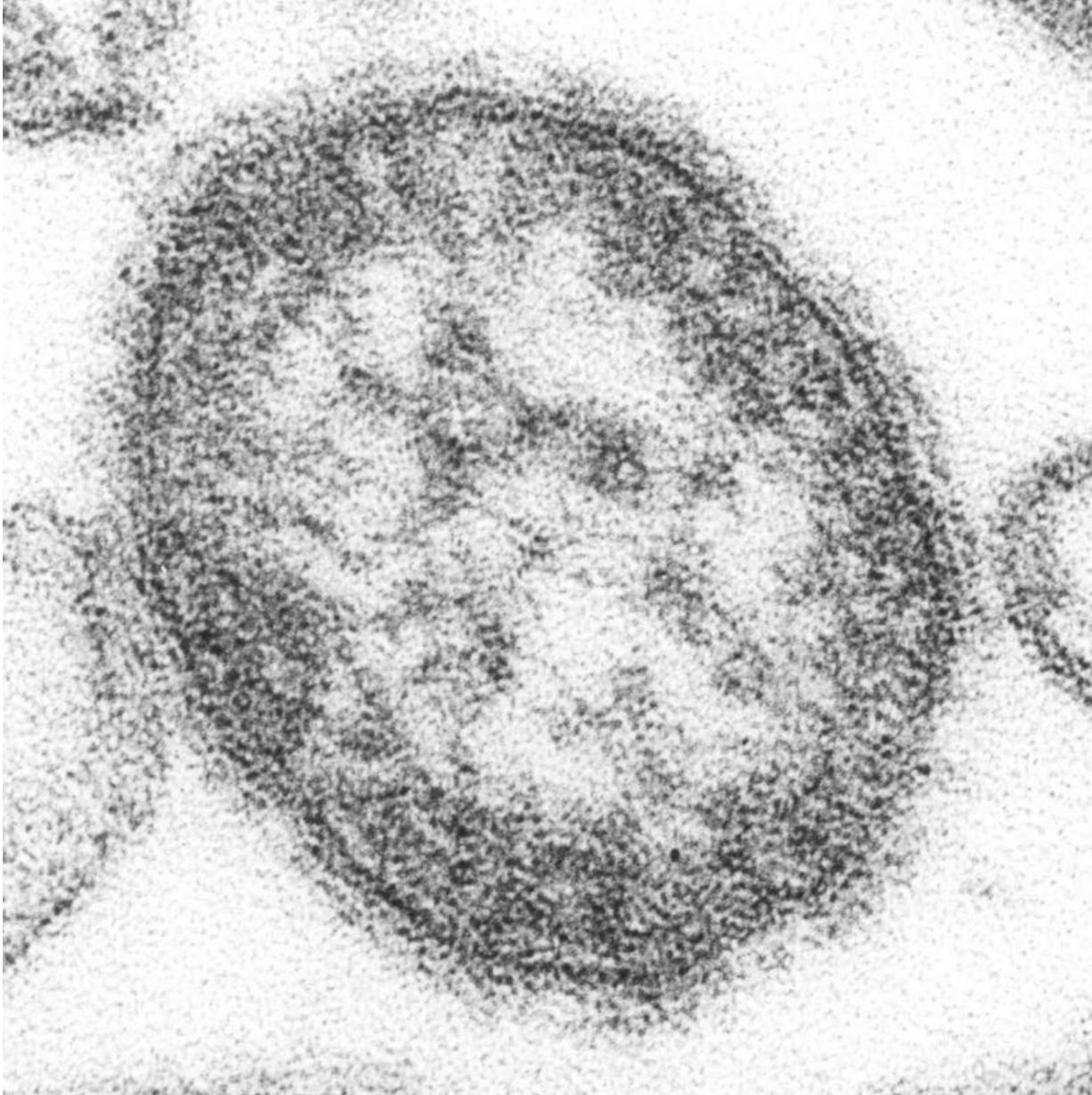


Incidence of measles in the United States

October 3 2017



An electron micrograph of the measles virus. Credit: CDC/ Courtesy of Cynthia

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From 2001 to 2015, the overall annual incidence of measles in the United States remained extremely low (less than 1 case/million population) compared with incidence worldwide (40 cases/million population); relative increases in measles rates were observed over the period, and the findings suggest that failure to vaccinate may be the main driver of measles transmission, according to a study published by *JAMA*.

Through nationwide use of vaccination, endemic measles (i.e., a transmission chain lasting 12 months or longer) was eliminated in the United States in 2000. Yet, importations of measles from endemic countries continue to occur, leading to outbreaks. Using data from the U.S. Centers for Disease Control and Prevention, Nakia S. Clemmons, M.P.H., of the CDC, Atlanta, and colleagues examined the incidence of measles among U.S. residents and trends after elimination.

From 2001 through 2015, 1,789 measles [cases](#) were reported among U.S. residents (median age, 15 years; female, 47 percent). Most were unvaccinated (69.5 percent) or had unknown vaccination status (17.7 percent); in those 30 years or older, 48.1 percent had unknown vaccination status. Measles incidence was 0.39 per million population.

Incidence per million population was highest in infants ages 6 to 11 months and toddlers ages 12 to 15 months. Measles rates declined with age beginning at 16 months. The annual number of measles cases varied between 24 and 658, and incidence per million population varied between 0.08 and 2.06. Higher incidence per million [population](#) was noted over time, from 0.28 in 2001 to 0.56 in 2015. The proportion of cases that were imported and vaccinated also varied by year but decreasing trends were observed. Vaccinated patients ranged between

5.5 percent and 29.6 percent of U.S. cases and decreased from 29.6 percent in 2001 to 20.2 percent in 2015.

Limitations of the study include lack of verifiable immunization on 48 percent of adults and the possibility of reporting changes, although sustained surveillance adequacy has been documented.

"The declining incidence with age, the high proportion of unvaccinated cases, and the decline in the proportion of vaccinated cases despite rate increases suggest that failure to vaccinate, rather than failure of vaccine performance, may be the main driver of [measles](#) transmission, emphasizing the importance of maintaining high vaccine coverage," the authors write.

More information: *JAMA* (2017). jamanetwork.com/journals/jama/.../1001/jama.2017.9984

Provided by The JAMA Network Journals

Citation: Incidence of measles in the United States (2017, October 3) retrieved 18 April 2024 from <https://medicalxpress.com/news/2017-10-incidence-measles-states.html>

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