

## Measles eradication: a goal within reach, slipping away

Prior to the introduction of the measles, mumps and rubella vaccine (MMR) in 1963, an estimated 3 to 4 million people in the USA contracted measles annually. As of April 22, 626 children in the USA have become infected with the virus so far in 2019. This fact has led to urgent Congressional hearings, understandably alarmed national news coverage, and the introduction of legislation to address the outbreak. Measles was declared eliminated in the USA in 2000, but the resurgence of the disease and its continued prominence globally are causes for great concern.

In the past 5 years, 75% of measles cases in the USA have occurred within more closed, religious communities such as the Amish in the Midwest and Somali migrants in Minnesota. According to the US Centers for Disease Control and Prevention, 91% of US children between the ages of 19 and 35 months receive MMR vaccinations. But within New York's ultra-Orthodox Jewish community, for example, the rate is as low as 60%. These communities tend to be extremely close knit, have large families and young populations, and are fairly isolated from their surrounding communities. 90% of unvaccinated people exposed to measles will become infected, and, in communities such as these, even a small rate of vaccination hesitancy could potentially pose an enormous risk for a larger epidemic.

The current measles outbreak has become a major political issue in America. In New York City, Mayor Bill de Blasio controversially ordered mandatory vaccinations for specific areas of Williamsburg, Brooklyn—areas with heavily Orthodox Jewish populations—with a threat of a US\$1000 fine. So far, six states have introduced legislation that would limit or eliminate the ability to claim religious or personal exemptions from vaccination for children. In the USA, anti-vaccine views don't align neatly with political poles. But the fact that views seem to be hardening is an ominous echo of the political divisions that have prevented the near-unanimous scientific consensus on global climate change from being more broadly accepted in the USA. The science on vaccines is just as reliable, and the prospect of vaccination becoming another front in a political cold war could presage incalculable harm.

Global measles deaths have declined by over 80% since 2000—from 550 100 deaths to 89 780 deaths in 2016. But, according to WHO, there have been over 112 000 confirmed measles cases globally to date in 2019—nearly half of these in Africa, an increase of 700% over the same period in 2018. Europe has also seen a 300% increase in measles infection, with the German state of Brandenburg ordering mandatory vaccination at kindergartens. In 2018, 85% of children had received one dose of the two-dose MMR vaccine, while only 67% had received both. WHO reports that vaccine-hesitant parents often find misinformation online, and engagement, listening, and information provided by medical professionals are often the best ways to address concerns. While conflict and infrastructure are also major drivers of the current outbreak in Venezuela, Madagascar, and other nations, WHO called vaccine hesitancy one of its top ten threats to global health in 2019.

Removing vaccine exemptions for non-medical reasons has proven effective in the past. In 2015, California outlawed non-medical vaccination exemptions for school admissions and the vaccination rate rose to greater than 95%. And while we must carefully balance the needs of public health with religious rights, vaccine hesitancy isn't just a personal issue. With a condition as contagious as measles, the choice not to vaccinate leaves the immunocompromised and children too young to be vaccinated at risk of infection.

Measles continues to spread within the USA and internationally in isolated, under-resourced and conflict-riven areas. The USA spends around \$2 billion on vaccination programmes annually, but further government investment and community engagement are required, in America and globally: from efforts to communicate the effectiveness of vaccination and the dangers of diseases parents may have no first-hand knowledge of, to making vaccination as easy as possible by providing the option of community and home vaccination for large families, families with limited means, or vulnerable populations. Fifty-six years ago, millions faced measles every year. Today, only a bare handful do, and that success should spur us to make the effort to engage, inform, and ensure that measles is controlled globally once and for all. ■ *The Lancet*



Tek Image

For current statistics on **measles in the USA** see <https://www.cdc.gov/measles/cases-outbreaks.html>

For more on the **history of measles** see <https://www.cdc.gov/measles/about/history.html>

For current data on the **status of measles worldwide** see [https://www.who.int/immunization/monitoring\\_surveillance/burden/vpd/surveillance\\_type/active/measles\\_monthlydata/en/](https://www.who.int/immunization/monitoring_surveillance/burden/vpd/surveillance_type/active/measles_monthlydata/en/)

For **WHO's top ten global health threats in 2019** see <https://www.who.int/emergencies/ten-threats-to-global-health-in-2019>

For more on **vaccine hesitancy** see **Editorial** *Lancet Child Adolesc Health* 2019; 3: 281

For more on **California vaccine exemption law** see <https://pediatrics.aappublications.org/content/142/5/e20181051>