

Children falling behind on measles vaccinations, study shows

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

While the world witnessed impressive progress in immunizing children against measles between 2000 and 2010, the last 10 years have seen such efforts stalling in low- and middle-income nations, according to a new scientific study.

The pre-pandemic vulnerabilities identified by this analysis are likely to be exacerbated as efforts to immunize children have been further disrupted by the COVID-19 pandemic.

"As the world responds to the COVID pandemic, it's going to be vital to address these pre-existing gaps in coverage, while also making sure that children missed during the pandemic receive their necessary immunizations," said Alyssa Sbarra, the study's lead author and a researcher at the Institute for Health Metrics and Evaluation (IHME) at the University of Washington's School of Medicine. "If that doesn't happen, the pandemic will compound the existing weaknesses in immunization systems and put more children at risk for measles."

The study, published today in the journal *Nature*, examines [vaccine delivery](#) in 101 low- and middle-income nations in five-by-five kilometer increments through 2019. It is the first analysis to examine trends in measles [vaccine coverage](#) around the world at such a precise geographic level.

"These community-level analyses of where children are—and are not—being vaccinated help pinpoint the areas of greatest vulnerability before the start of the pandemic," Sbarra said.

The study found that in 2019, there was a higher percentage of vaccinated children in [urban areas](#) than in [rural communities](#); however, due to crowded conditions in cities, the majority of all unvaccinated children globally lived in cities.

"Policymakers need to target both urban and remote rural locations in order to equitably vaccinate all children," Sbarra said.

The study examines vaccination rates between 2000 and 2019. In 2000, the three communities with the lowest coverage were in Ethiopia and Nigeria. Nineteen years later, the three communities with the lowest coverage were all in Afghanistan.

"This valuable local level mapping of measles vaccination coverage, provides crucial insights to guide decision-makers." said Prof. Heidi Larson, an author on the study; a professor at the London School of Hygiene & Tropical Medicine; and author of "Stuck: How Vaccine Rumors Start and Why they Don't Go Away." "National coverage rates alone mask important geographic variations. India, Chad, and Ethiopia, for instance, all showed increasing overall measles vaccination coverage. But behind those similarities, India's geographic inequalities decreased, while inequalities in Chad and Ethiopia increased. These inequities can expose pockets of vaccine hesitancy as well as access issues. Hesitancy in the context of COVID fears or anxieties around a new COVID vaccine should not inhibit any parent from ensuring their children are vaccinated against measles."

Even before the current pandemic, few low- and middle-income countries had reached the global target of 80% [coverage](#) in every community or district. In 2017, there were nearly 18 million measles cases; more than 83,000 children died from the disease. The study notes that the "safe, highly effective measles vaccine," which was developed in the 1960s, has been recommended globally for children since 1974.

"It is unconscionable that, even though more than 50 years have passed since the measles vaccine was developed, we still are seeing so many children dying from [measles](#)" said Dr. Jonathan Mosser, an assistant professor at IHME and a senior author on the study. "Health leaders need to recognize the magnitude of this problem. We need new strategies to identify communities that are falling behind and enable them to reach all unimmunized [children](#) with this safe and effective [vaccine](#)."

More information: Mapping routine measles vaccination in low- and middle-income countries, *Nature* (2020). [DOI: 10.1038/s41586-020-03043-4](#) , www.nature.com/articles/s41586-020-03043-4

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