

Melinda Gates has the perfect response to the anti-vaccine movement

Updated by [German Lopez](#) at VOX on January 26, 2015

As [the Disneyland measles outbreak](#) continues, Melinda Gates of the Bill and Melinda Gates Foundation took aim at the [vaccine naysayers](#) who make these types of disease outbreaks more likely.

"We take vaccines so for granted in the United States," Gates told [the Huffington Post](#) in a prerecorded interview published on Thursday. "Women in the developing world know the power of [vaccines]. They will walk 10 kilometers in the heat with their child and line up to get a vaccine, because they have seen death. [Americans have] forgotten what measles deaths look like."

She added, "I'd say to the people of the United States: we're incredibly lucky to have that technology and we ought to take full advantage of it."

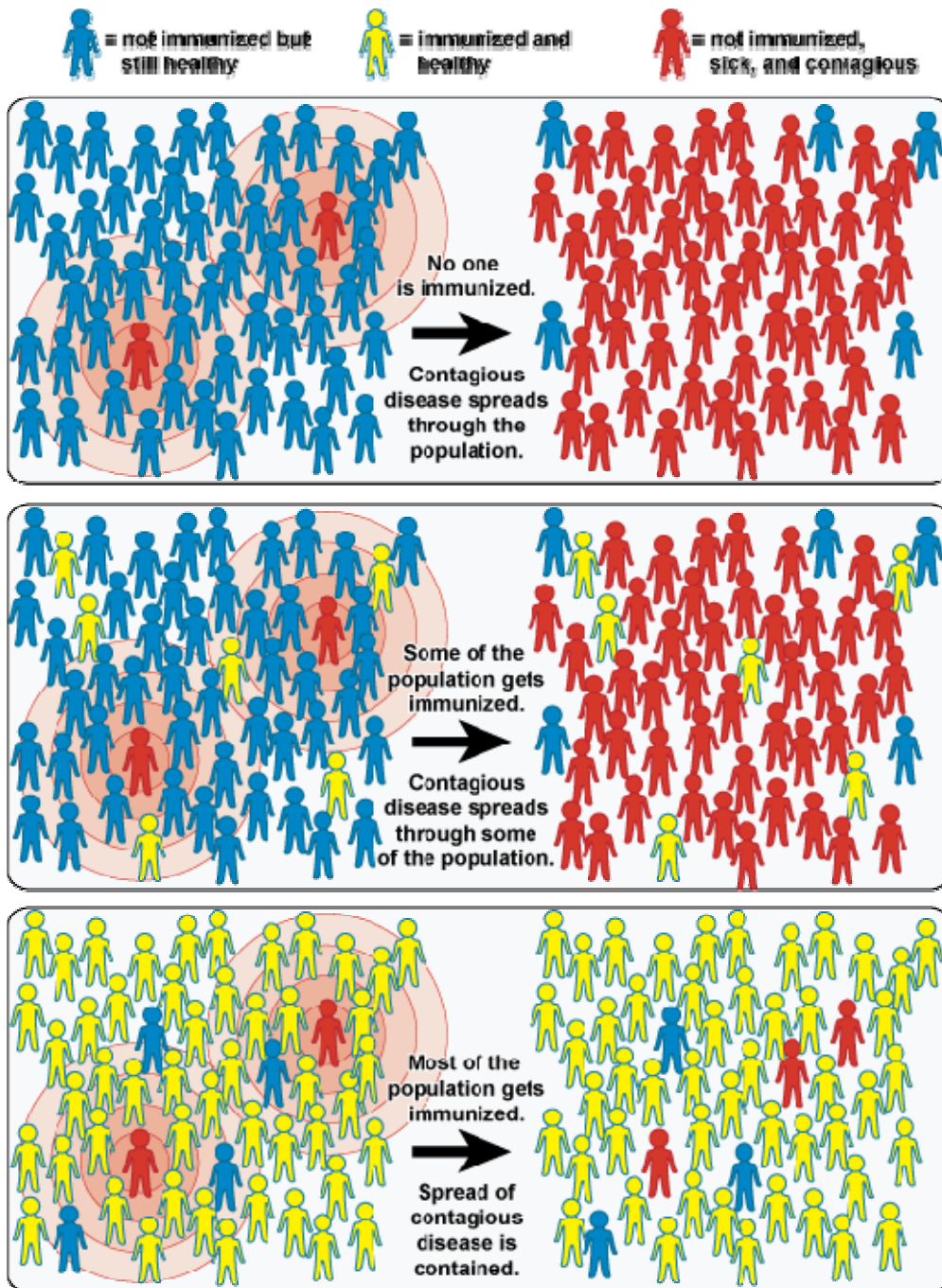
In response to the Disneyland outbreak, pediatric infectious disease specialist James Cherry told [the New York Times](#) the outbreak was "100 percent connected" to the anti-vaccine movement. "It wouldn't have happened otherwise — it wouldn't have gone anywhere," he said.

The key is what the scientific community calls [herd or community immunity](#). If every American of age was vaccinated, measles wouldn't spread much further even if foreign travelers came into the country with the disease — as [appears to be the case](#) with measles. Vaccinated people essentially act as barriers to measles outbreaks, since the disease can't pass through them and infect other people. The awful truth of the anti-vaccine movement is that it puts the most vulnerable populations at risk: [infants under 12 months of age](#), who can't get vaccinated and are more susceptible to infection, and the elderly, who have a higher risk of death if they contract these illnesses.

Even a small number of unvaccinated people can make it much easier for a disease to spread.

To explain this phenomenon, scientists often refer to herd or community immunity, a coverage threshold that effectively prevents an illness from spreading.

If no one is immunized, a disease can easily bounce from person to person until it reaches everyone. If some people are immunized, the immunized people act like buffers that prevent a disease from spreading through them. If enough people are immunized, the buffers essentially become impenetrable and a disease can't realistically spread at all.



The threshold for community immunity depends on the disease and how it's transmitted. In an analysis of several vaccine-treatable illnesses, the CDC set the lowest threshold of vaccine coverage at 75 percent — for mumps — and the highest at 94 percent — for measles and rubella. Even the low-end threshold requires at least three in four people — and often children in particular — to get vaccinated.