

## More than measles: The threat to America's 'herd immunity'



Jodi Krawitt holds her son Rhett, 6, in their home in Corte Madera, California, Jan. 28, 2015. Rhett is recovering from leukemia and his father is concerned his child could succumb to an outbreak of measles at his Northern California school. REUTERS/Elijah Nouvelage

When reviewing the recent and entirely preventable measles epidemic that began in, of all places, Disneyland, I was reminded of many things.

The first was the Centers for Disease Control and Prevention's ranking of the Ten Great Public Health Achievements in the 20th Century, a list based entirely on reproducible scientific data. The No. 1 achievement, without doubt, was the development of effective immunizations against a battery of infectious scourges such as measles, polio, whooping cough and diphtheria.

Yet as physicians treating measles in poorer nations already know and, most recently, those in California are learning, this disease is no weakling in the pantheon of infectious diseases. Measles makes one terribly ill with high fever, intolerance to light, aching muscles, cold-like symptoms and peeling skin.

The children who experience *only* these symptoms are the lucky ones. In the years before antibiotics, many children went on to develop bacterial pneumonia, and 40 percent to 70 percent of them died of it. Even today, one of every 10,000 cases of measles results in an inflammation of the brain called subacute sclerosing panencephalitis, which often leads to serious brain damage or death. Overall, the risk of death from measles is about 0.2 percent, but in impoverished areas where malnutrition is common, the rate can soar to 10 percent. The majority of these deaths are children under the age of 5.

## Reuters/Ipsos poll: vaccines

*Do you agree or disagree with each of the following statements?*

Parents should be allowed to sue if an un-vaccinated child gets their child sick.

DISAGREE 44% AGREE 38%



Parents should be allowed to choose whether or not to vaccinate their children.

DISAGREE 50% AGREE 42%



All children should be vaccinated (except those for whom vaccination poses a direct health risk).

DISAGREE 13% AGREE 78%



Credibility interval

NOTES: For the first question, 2,124 American adults were interviewed online from February 12-20, 2015 with a credibility interval of  $\pm 2.4$  percentage points. For the other two questions, 2,382 American adults were interviewed online from February 12-20, 2015 with a credibility interval of  $\pm 2.3$  percentage points  
Source: Reuters/Ipsos

S. Culp, 23/02/2015

REUTERS

The current and needless contagion crisis should also jog our memories that before measles immunization became widely available, there were between 3 million and 4 million cases a year. Thanks to the measles vaccine, the World Health Organization estimates that 15.6 million deaths were prevented worldwide from 2000 to 2013, making the measles vaccine one of the best bargains in public health today. That said, measles continues to stalk the planet; in 2013, there were 145,700 deaths globally linked to the disease, or about 400 deaths a day, or 16 deaths every hour.

All these demonstrable facts makes reviewing the February 2015 Reuters American Insights poll on vaccines simultaneously reassuring, disturbing and potentially dangerous to the public's health.

The most disturbing poll finding centered on the importance people place on politicians' views on the subject. Politicians have been coming out of the woodwork to comment on the measles outbreak, and in several notable cases they have expressed dangerous points of view. But when respondents were asked if a politician's position on vaccination would have a major impact on their vote, ambivalence resulted: A lackluster 41 percent said it would, while 36 percent said it would have no effect.

Let me offer some medico-political advice. Anybody who does not accept the assessment of the world's best public health and medical experts that vaccines have prevented hundreds of millions of deaths from horrific and deadly illnesses is too intellectually or ethically challenged to hold public office with responsibilities of any kind over the public's health.

The 2015 measles epidemic in the United States is a direct function of the public-health risks created by vaccination opponents and the resultant loss of "herd immunity," which refers to the epidemiological rule that 95 percent or more of a given population needs to be immunized or immune against a particular infectious agent to prevent an epidemic from occurring.

According to some accounts, several schools in Orange County, where Disneyland is located, reported that 50 percent to 60 percent of their kindergartners were not fully vaccinated, and 20 percent to 40 percent of parents have sought a personal exemption to vaccination requirements for their children.

While such numbers are well above what the vast majority of people surveyed in the Reuters poll would find acceptable, it is perhaps a predictable outcome given the fact that so many people believe the decision to vaccinate children should be left up to parents. Nearly 42 percent in the national poll believed the choice should be left up to parents.

This erosion to herd immunity reveals the public health nightmare that has arisen in recent years when vaccinations become politicized and then codified in the form of state-mandated, and rather loose, exemption laws.

In the poll, 66 percent of people believe public schools should be allowed to refuse enrollment to children unvaccinated by parental choice. Only 22 percent disagreed.

That any child living in the 21<sup>st</sup> century contracts measles is both astounding and unacceptable. Measles has been completely preventable with an inexpensive, safe and effective vaccine that has been available for more than 50 years. All that's necessary is that you be inoculated with the vaccine, typically at 12 months of age and then again between 4 and 6 years of age.

If you have a child in that age range, or one who is not fully immunized against measles, do the best by him or her by getting them immunized.