Report to the Boards of Health

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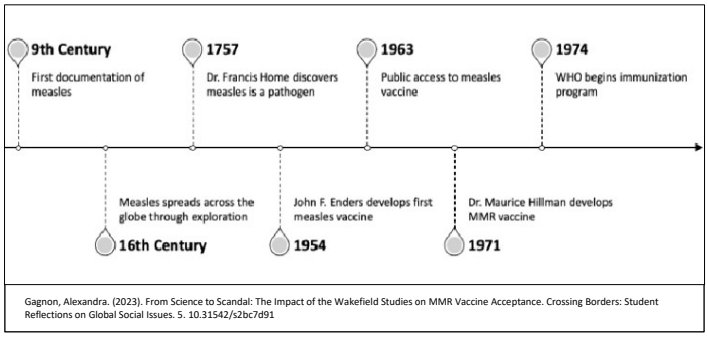
Central Michigan District Health Department, Wednesday, April 24, 2024
District Health Department 10, Friday, April 26, 2024

Measles

The first record of measles is over 1,000 years old. It is thought to have started in cattle herders after a similar virus crossed over to them from cattle. Measles is still one of the most infectious diseases known to man. Work on a vaccine began in Boston in the 1950s. The measles, mumps, and rubella combination vaccine (M-M-R) was licensed in 1971 and measles was declared eliminated from the United States in 2000, meaning no measles normally spreads in the county and new cases are only found if someone gets measles outside the country and then returns to the US.



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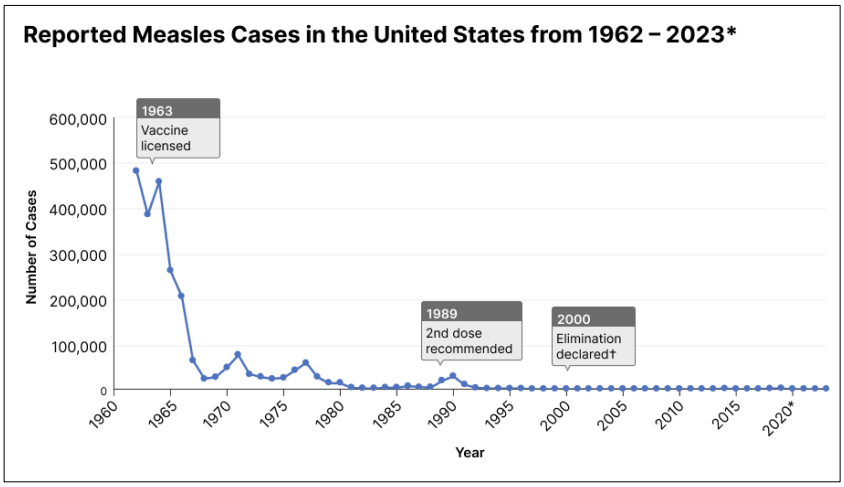


Red, watery eyes, runny nose, and rash of measles. Source: AAP

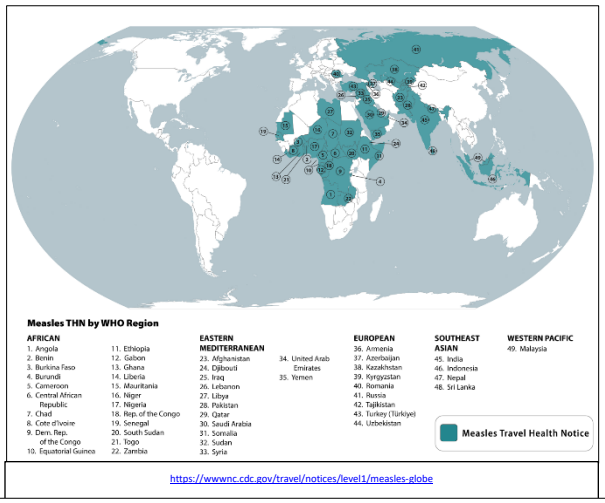
Measles is caused by a virus and spreads through the air by droplets from an infected person's talking, coughing, or sneezing. Measles usually begins with a fever, cough, runny nose, and red eyes for two to three days. After this, the fever spikes, often as high as 104-105°F, and a red blotchy rash appears. The rash usually starts on the head and face, and then spreads downward to the neck, trunk, arms, legs, and feet. The spots may join as they spread from the head to the body. It usually takes between 7-12 days after contact with an infected person for someone to develop measles, but in rare cases it can take up to 3 weeks. There is no specific treatment for measles. Most people are sick enough they will need to be home for at least a week and about 1 in 5 unvaccinated people will end up hospitalized. Around 1 in 20 people with measles develop pneumonia. Serious and even life-threatening problems can occur, such as encephalitis (swelling of the brain), seizures, and deafness. On average, 1 to 3 out of every 1,000 children with measles will die from complications.

In 2021, around 128,000 people died worldwide from measles, most under the age of 5. Since there are fewer cases of measles in the US, death isn't as common. Since 2000 there have been 12 deaths from acute measles in the US. The most recent was in 2019, a 37-year-old who died with meningitis. These deaths do not include those caused from subacute sclerosing panencephalitis (SSPE), a rare and often deadly complication from measles.

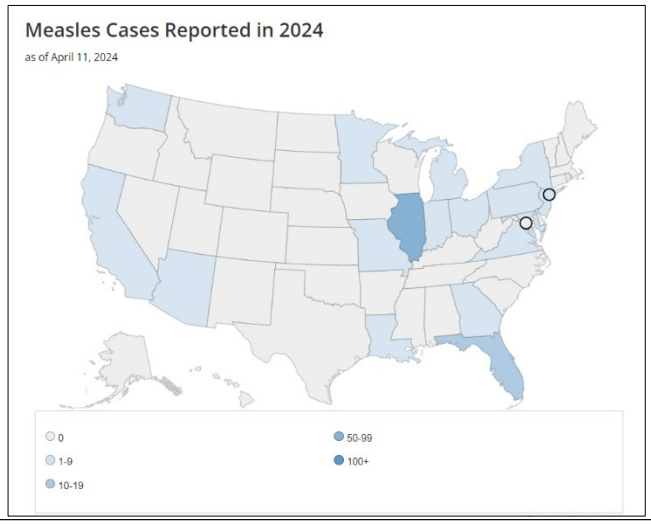
Between 2000 to 2019, there have been at least 35 deaths from SSPE in the US. SSPE is thought to be caused by the measles infection persisting in the brain. Most that get SSPE are under 20 years old and about half of those that get SSPE had measles when younger than 2 years old. SSPE usually starts 7 to 10 years after making a full recovery from measles. Those with SSPE develop memory loss, behavior changes, uncontrollable movements, and seizures. They may become blind, develop stiff muscles, become unable to walk, and eventually deteriorate to a persistent vegetative state or death.

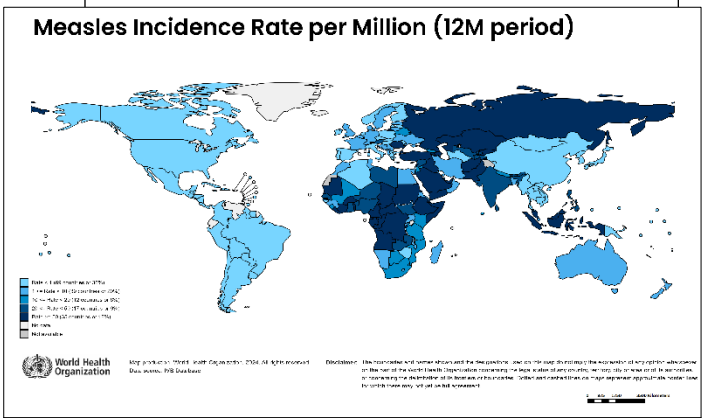
Infection with measles can be harmful to your immune system. It can suppress the immune memories that you have created from past infections and vaccinations, leaving you vulnerable to many other infections. This is referred to as “immune amnesia”. Measles appears to do this by destroying immune memory cells and replacing them with memory cells programed only for measles. It takes about 2 to 3 years for protective immune memory to come back. MMR vaccination does not cause immune amnesia to occur, while still protecting against measles infection.

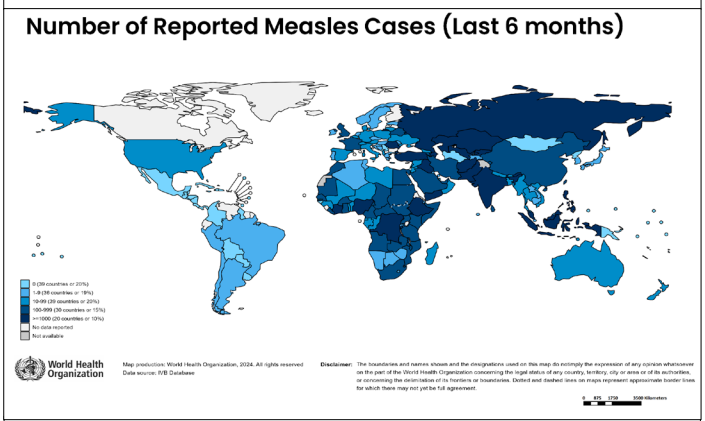
Global measles cases are on the rise, and as of March 22, CDC confirmed that 49 countries had ongoing measles outbreaks. The WHO European region saw a 30-fold rise in measles cases in 2023 compared to 2022. The US has also seen an increased number of cases. As of April 11, 2024, a total of 121 measles cases were reported by Arizona, California, Florida, Georgia, Illinois, Indiana, Louisiana, Maryland, Michigan, Minnesota, Missouri, New Jersey, New York City, New York State, Ohio, Pennsylvania, Virginia, and Washington. For comparison, there were 58 cases in all of 2023.

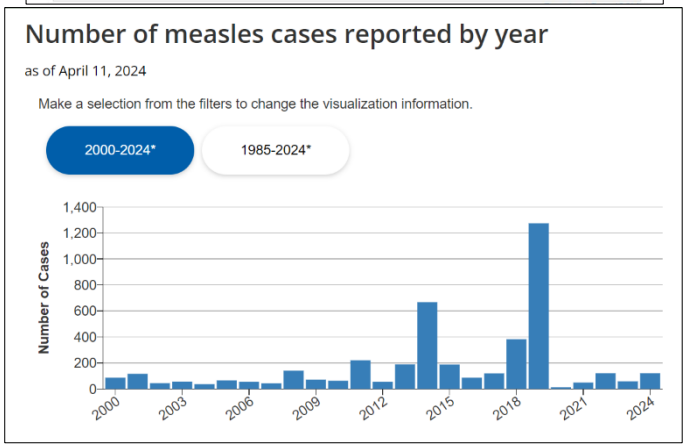


https://wwwnc.cdc.gov/travel/notices/level1/measles-globe









Surveillance data from 8/2023 to 1/2024 https://www.who.int/teams/immunization-vaccines-and-biologicals/immunization-analysis-and-insights/surveillance/monitoring/provisional-monthly-

The 121 cases of measles in 2024 have the following characteristics:

AGE	VACCINATION	HOSPTIALIZED
57 (47%) are under 5 years	82% are unvaccinated or have an unknown vaccination history	56% (68) of cases have been hospitalized, which is above average. Of those hospitalized:
27 (22%) are 5-19 years	13% have had one MMR dose	• 65% are under 5 years • 37% are 5-19 years • 57% are 20+ years
37 (31%) are 20+ years	5% (6 cases) have had two MMR doses	

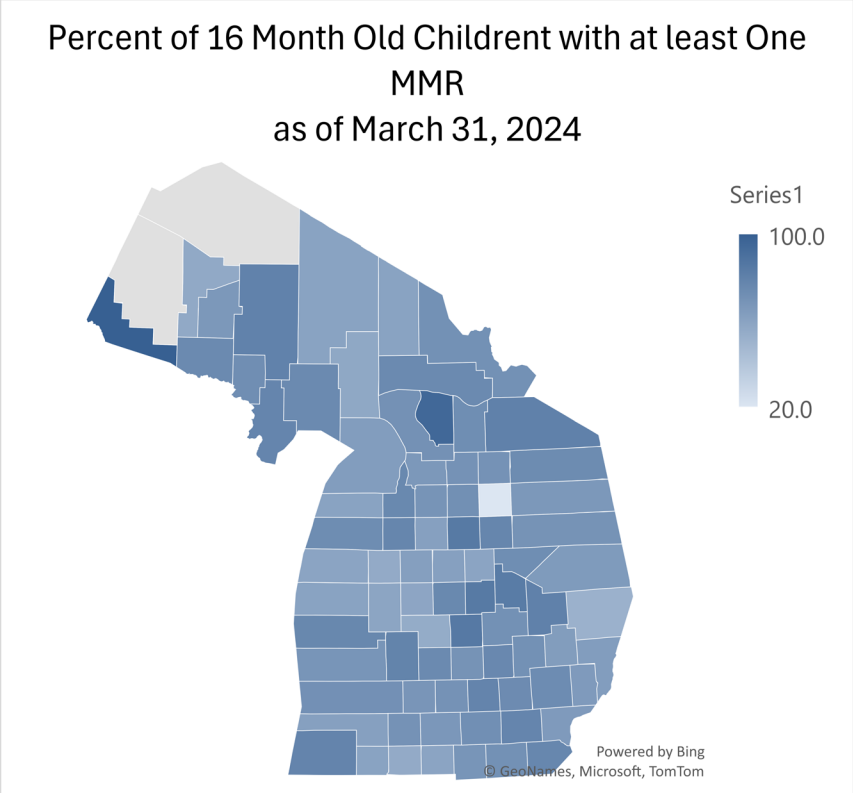
Illness, outbreaks, and death from measles mainly effects those that are not immune. Some countries still struggle with measles due to infrastructure issues like political instability, lack or collapse of a public health, and low supply of vaccines. Many countries also face distrust of vaccinations due to prior race-based missteps made by health officials and government leaders. Other areas have had outbreaks not due to lack of access to vaccines, but due to personal or religious objections to vaccination. Vaccine hesitancy and concerns date back as far as the first vaccine. Most concerns specific to the MMR vaccine started in the late 1990s.

In 1998, a British gastroenterologist, Andrew Wakefield and 12 co-authors published an article claiming that autism and gastrointestinal disorders were linked to the measles part of the MMR vaccine. Their study was based only on their observations of 12 patients. This article, published in the Lancet, was highly publicized. It was also highly criticized by other doctors and scientists as no one could duplicate his findings. After thorough investigation, Wakefield and the other authors were found guilty of deliberate fraud and falsifying their facts and the paper was retracted (pulled out of the journal). The investigation found that the patients in the study were recruited through an anti-MMR campaign, and the study was commissioned and funded to support planned legal actions.

Wakefield lost his medical license, yet he is still very active in the anti-vaccine community and his now-debunked research is still cited as evidence against the MMR vaccine. As an example of his continued impact, Wakefield gave talks to members of the Somali community in Minneapolis from 2010 to 2011, promoting the misunderstanding that autism was related to MMR vaccine. The vaccination rates in that community were 92% in 2009 and dropped to 42% by 2014. In 2017, Minneapolis had its biggest measles outbreak in 30 years, which was centered around the Somalian community. A total of 65 cases occurred, most were children under 2 years old, 85% were of Somali descent, 95% were unvaccinated, and 1 in 3 had to be hospitalized.

The link between autism and MMR vaccine has been evaluated in many studies and no evidence has been found to support it. Concerns were raised that thimerosal, a preservative used in vaccines, or the number of vaccines given at one time could be linked to autism. Again, evidence has not supported these claims. See https://autismsciencefoundation.org/autism-and-vaccines-read-the-science/ for further information.

Many celebrities support anti-vaccination beliefs, most notably Jenny McCarthy, Jim Carrey, Robert F. Kennedy, Jr., and Robert DeNiro. Social media has made it very simple to create incorrect information that appear reputable and spread it quickly to others. The antivaccine movement had become a major political power and multimillion dollar business. New and more complex vaccines continue to be created to the benefit of health, but also offer new opportunities for questions and concerns about safety and necessity. The American culture of questioning authority, including medicine and doctors, while rejecting the motives of big businesses like pharmaceutical companies, added to our natural skepticism makes it understandably challenging to promote vaccination and vaccine mandates.



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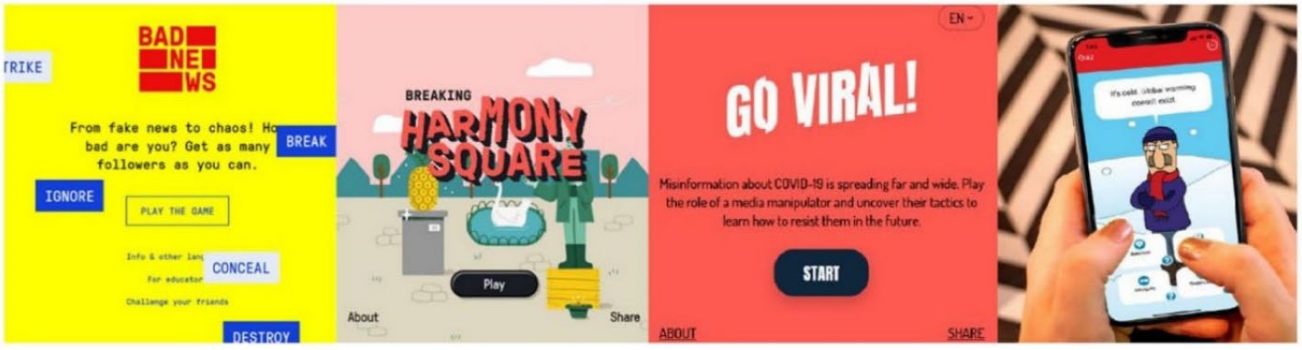
Statewide	68.7%
CMDHD	
Arenac	72.7%
Clare	61.5%
Gladwin	59.1%
Isabella	75.6%
Roscommon	84.6%
Osceola	62.1%
MMDHD	
Clinton	69.6%
Gratiot	85%
Montcalm	54.7%
DHD10	
Crawford	71.4%
Kalkaska	68.8%
Lake	55.6%
Manistee	73.3%
Mason	59.1%
Mecosta	58.5%
Missaukee	61.5%
Newaygo	58.9%
Oceana	60%
Wexford	77.4%

Recommendations:

1. Be sure you are immune to measles, especially if you are planning any international travel.
2. Consider being a pro-vaccination voice in your community. Toolkits are available at https://www.voicesforvaccines.org/toolkits/.
3. Consider protecting yourself from misinformation using the inoculation theory, or "prebunking" yourself. Some useful resources are:



Bad News (www.getbadnews.com), Harmony Square (www.harmonysquare.game), Go Viral! (www.goviralgame.com), Cranky Uncle (www.crankyuncle.com).

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