

## Measles diagnosis exposes Martha's Vineyard's vulnerability

*Island vaccination rates are so low that herd immunity is jeopardized, physicians said.*

By **Barry Stringfellow** - June 24, 2015



*Martha's Vineyard accounted for five opioid-related deaths in 2014 and five in 2015. - File photo by Michael Cummo*

Ever since an unvaccinated child from off-Island was diagnosed with measles at Martha's Vineyard Hospital last week, state and local health officials have been working double time to contain a possible outbreak.

State officials were well aware of the Vineyard's traditionally low vaccination rate once the diagnosis was confirmed Friday.

"Martha's Vineyard has been one of those areas where there has been a lot of [vaccination] exemptions for religious reasons," Dr. Larry Madoff, director of the Division of Epidemiology and Immunization at the Massachusetts Department of Public Health (DPH), told The Times on Monday. "We knew that exposures can happen here very rapidly."

Whether the highly contagious virus will spread on the Vineyard has yet to be seen, and that outcome will remain uncertain for at least another week.

However, according to Dr. Jeffrey Zack, director of the Martha's Vineyard Hospital emergency department, quick diagnosis and immediate isolation of the infected child have greatly diminished the possibility of an Island-wide outbreak. He credits Dr. Robert Partridge, who was on duty that night. "I can't say enough about Dr. Partridge and the job he did," Dr. Zack told The Times. "Doctors rarely if ever see measles these days. It could have easily been missed."

Dr. Partridge, an emergency services doctor based at Emerson Hospital in Concord, does a rotation at the Vineyard and Nantucket hospitals once a month. "I've been practicing 23 years, and never seen a case of measles," Dr. Partridge told The Times in a telephone call Tuesday. "Most doctors practicing today haven't. [The infected child] didn't have much fever. She had a little runny nose and a mild cough, but the rash was textbook measles."

Dr. Partridge's initial diagnosis was confirmed by a blood test, done in a DPH laboratory, on Friday night. Dr. Zack explained why MVH waited until Monday morning to announce it: "When we got the diagnosis, there were 30 doses of the vaccine at the hospital," he said. "We wanted to make sure we had a plan in place, and then once we released the information, that we were set up for the demand. We also had a lot of information gathering to do."

Hospital officials told The Times that since they announced the diagnosis Monday morning, they have been inundated with calls.

### **Plagued by success**

The success the medical community has had in eradicating measles is ironically playing a part in its resurgence. "A lot of people don't have any idea how devastating measles can be, because they weren't around for it," Dr. Zack said. "Before the vaccine, measles killed thousands and thousands of people. When a disease hasn't been around for 50 years, people forget how bad it is, and it's easier for some people to dismiss the importance of vaccinating."

"That's very much a factor," Dr. Madoff said. "Measles has become less and less familiar to doctors and patients. It can have some potentially devastating and permanent consequences. But some people are swayed by a perceived risk, when it's a very safe vaccine."

Drs. Zack, Madoff, and Partridge said that misinformation, and its contagion on the Internet, has also undercut vaccination rates. In particular, they cite a 1997 study that supposedly linked the MMR vaccine to autism. The study, done by British physician Andrew Wakefield, was later roundly discredited due to procedural errors, financial conflicts of interest, and ethics violations, and Mr. Wakefield's medical license was revoked in the U.K. His work, however, lives in perpetuity on the Internet.

### **Vineyard leads in exemptions**

According to Massachusetts state law, vaccinations can only be forgone for medical and religious exemptions.

A DPH Health Immunization Program survey, released in March of this year, exposed just how vulnerable Island children are to vaccine-preventable diseases. The study measured vaccination rates for kindergarten students statewide over the 2013-14 school year.

It showed the state average for religious exemptions at 1 percent, while the seven schools surveyed in Dukes County registered an 18 percent exemption rate, by far the highest in the state, and three times the 6 percent in Nantucket County, which placed a distant second.

The study only surveyed schools with 30 students or more, so the Chilmark, Charter, and Montessori schools were not included in the total.

"Vaccination rates need to be over 90 percent, or it compromises herd immunity, which is critical to the health of the overall community," Dr. Madoff said. Herd immunity refers to protecting a whole community by immunizing a critical mass of the population. "Herd immunity helps those who can't physically be vaccinated survive. People with immunosuppressive problems, some of the elderly, and infants can't get the vaccine," Dr. Madoff said.

The DPH survey showed that 95 percent of Massachusetts kindergarteners received the MMR vaccine, while only 84 percent of Dukes County kindergarteners had the MMR vaccine. Statewide, 91 percent had

the complete series of vaccinations required by Massachusetts public schools. Dukes County registered 73 percent, again the lowest in the state.

Edgartown School has the lowest exemption rate on the Island, 2.6 percent, and 100 percent of the kindergarten students have the MMR vaccine. Oak Bluffs School has an 8.2 percent exemption rate, with 92 percent of students MMR-vaccinated. Tisbury School has a 13.9 percent exemption rate, with 94 percent MMR-vaccinated students. West Tisbury School has a 26.2 percent exemption rate, with a 77 percent MMR vaccination rate.

The Island antivaccination trend was also evident in a DPH study of 7th graders for 2014–15. The five qualifying schools in Dukes County led the state in religious exemptions at 9 percent; Franklin County was the second highest at 3 percent.

### **Troubling trend spreading**

Nationwide, measles is making a comeback. There were a record number of measles cases in the United States in 2014 — 668 cases from 27 states, the greatest number of cases since measles was “eliminated” in the U.S. in 2000, according to the CDC.

The virulent virus has made several comeback tours in recent years.

There was a resurgence in the United States between 1989 and 1991, when 55,000 cases, 123 deaths, and 11,000 hospitalizations were reported. According to the CDC, the outbreak was due in large part to “low measles vaccine coverage among preschool-aged children.”

According to Pejman Talebian, chief of the immunization service at the DPH, “These pockets are not in lower-income city areas; they generally tend to be in middle- and upper-middle-class communities.”

Measles also recently showed its staying power in the U.K. In 2012 and 2013, an eight-month measles outbreak in and around Swansea, Wales, led to 1,219 diagnosed measles cases; one was fatal. Only 17 percent of school-age children had the MMR vaccination at the time of the outbreak, according to a report by the British Broadcasting Corporation (BBC).

“I think this episode underscores the fact that we are not an isolated community, especially these upcoming weeks when we have 100,000 people coming to our Island,” Dr. Zack said. “There’s a good opportunity here for education, and to remind people why we vaccinate. Not to point fingers, but the facts are the facts. I think people who don’t vaccinate need to reassess the risk, especially with children who can’t make these decisions themselves.”

If another case of measles is confirmed on the Island, the unvaccinated may have that decision made for them. State law states those who are susceptible to measles who do not receive a dose of vaccine within 72 hours after potential exposure must be excluded from public activities for 21 days. “All susceptibles, including those with medical or religious exemptions, are subject to vaccination,” the law states.

Read about the Vineyard’s measles diagnosis [here](#).