

Some schools have large vaccine voids

Kindergarten classes at one-third of the elementary schools in Clark County began the school year vulnerable to infectious diseases such as mumps and measles because more than 10 percent of their students were behind on required vaccinations.

In Yellow Springs, one in three kindergartners was unvaccinated because their parents have a conscientious opposition to vaccines, a trend that concerns public health officials.

An I-Team investigation of statewide immunization data shows that the majority of Ohio schoolchildren have their required shots, but there are enclaves where vaccine exemptions have dropped immunization rates to potentially dangerous levels.

The investigation also revealed that many schools allow large numbers of students to attend school without required vaccines — sometimes more than half the class — despite state law requiring students show proof of immunization to start school. And local health officials are unaware of these numbers.

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“Obviously you have a dangerous situation there,” said Dr. David Morens, senior advisor to the director of the National Institute of Allergy and Infectious Diseases.

“The forest is dry. What are the chances someone’s going to drop a lit match in the forest? Because I guarantee if someone drops that lit match, you’re going to have an epidemic.”

This is because in order for vaccines to be most effective, a large percentage of the population must have them, creating what public health experts call “herd immunity.” Immunity against measles — one of the most contagious vaccine-preventable diseases — requires about 94 percent of the population to have their shots.

At 190 schools across Ohio, more than 5 percent of this year’s kindergarten class had an exemption against getting the measles vaccine, mostly citing moral or philosophical grounds. This includes 24 schools in southwest Ohio.

At 122 schools statewide, 30 percent or more of kindergartners started the school year without showing complete vaccination records. At some schools in Cincinnati and Cleveland, as many as 89 percent of students could not show proof of vaccinations as of Oct. 15, the state reporting deadline.

Local schools that reported low vaccination rates in October said they've worked with parents to get all but a handful of students up-to-date with their shots.

At Lincoln Elementary, for example, 38 percent of this year's kindergartners were listed as incomplete in the fall, the highest rate in the county. But as of this month, the school's nurses reported that about 8 percent remained in process.

Opting out

Every kindergartner in Ohio is required to have the following shots before entering school: four or five doses of DTaP, DTP or DT in any combination; three or more doses of the OPV or IPV polio vaccine; two doses each of measles, mumps and rubella vaccine, usually given in combination as the MMR shot; three doses of the Hepatitis B vaccine; and two doses of the Varicella vaccine, which prevents chicken pox.

To enter seventh grade, another set of MMR, Hep B and Tdap shots are required.

Ohio is one of 17 states where parents can choose not to vaccinate their kids, and area parents have increasingly chosen that option in recent years. In Clark and Champaign counties, 1.2 percent and 1.4 percent of parents, respectively, opted out of vaccines on ideological grounds this school year. That is up from 0.49 percent and 1 percent in the 2012-2013 school year.

The statewide percentage also is low: 2,424 kindergartners have such an exemption this year, or 1.8 percent of the total.

But at some schools numbers are much higher. And those with the highest numbers tend to be grouped ideologically.

At Mills Lawn Elementary School in Yellow Springs, 16 of 41 kindergartners were not fully vaccinated at the beginning of the school year, 12 because their parents objected on religious or philosophical grounds.

The school's 29 percent exemption rate for kindergartners is the highest of any district in the state. If each incoming class continues the trend, 30 to 40 percent of the school district will be unprotected against infectious diseases.

Greene County health officials said they work in conjunction with the schools to educate the public, especially since they are aware of pockets in the community where vaccination rates are lower.

“What we see is about a 93-to-94 percent vaccination rate that is needed to prevent sustained outbreaks

for most vaccine preventable diseases,” said Dr. Don Brannen, an epidemiologist with the health department. “Higher is better because the segments of the population that do not vaccinate in part do so as a subgroup.”

Those subgroups are at risk even if the overall county population maintains high immunization rates, he said.

“Yellow Springs is a conscientious and deeply thoughtful community,” Yellow Springs superintendent Mario Basora said. “The law permits parents to choose the number and timeline of vaccinations they want their children to have. While we strongly encourage parents to vaccinate their children, we also appreciate the nuances around this important decision.”

The high rate of exemptions heightens the school’s awareness of the potential for disease to spread, Basora said. “Our plan moving forward will be to engage in further and more formal dialogue with our parents and community about vaccines.”

Parents said they’re not surprised that Yellow Springs had a high rate of exemptions because the village is home to many independent thinkers who like to question mainstream ideas.

“People do what they believe, so I’m not surprised,” said Susan Miller, whose granddaughter is a student at the high school. “A little disappointed. I’d like to see more vaccinations because I think it’s important.”

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Lindsay Burke’s son is 3 and got his shots on a delayed schedule because she wanted to do more research. But news of a mumps outbreak just down the road in Columbus last year motivated her to get him immunized.

“I think that there’s a really good reason that vaccines exist, and I definitely appreciate not having polio or measles be a problem,” she said. “But I also understand why people want to do research on it.”

Tony Siemer chose not to vaccinate one of his children because he was distrustful of vaccines.

“At the time I’d heard there were bad reactions,” he said, and he feels exemptions have not become prevalent enough to be of great concern.

The four other area schools where more than 10 percent of the students have exemptions are private religious schools. Two are Catholic.

Some Catholics oppose vaccines because some use cell lines derived from aborted fetuses more than 50 years ago, notes an article in this month's issue of the Catholic Telegraph, a publication of the Archdiocese of Cincinnati.

It also says Catholics do not need to refuse these vaccines in situations where no alternative exists.

Not all students with conscience exemptions opted out of all the required shots. Of this year's kindergartners who had exemptions, 98 percent did not get the Varicella shot, 90 percent were exempt from MMR, 85 percent opted out of the polio vaccine and 83 percent the DTaP.

The least-common exemption is for the Hepatitis B vaccine, with 73 percent of those with conscience objections skipping those doses.

Statewide, the schools with the highest rates of unvaccinated children tend to be in the Amish community, especially in Holmes County.

Lessons learned

Holmes County received a wake-up call last year when measles tore through the Amish community after the disease was picked up by a missionary in the Philippines. The ensuing epidemic was historic, infecting 382 people.

Holmes County health director D.J. McFadden said the Amish turned out in droves for vaccines once they saw the viciousness of the disease that nearly killed a young girl, had three pregnant mothers in fear of losing their babies and afflicted hundreds with severe pain.

"Many people said, 'First I thought I would die. Then I wanted to die, then I got better,'" he said. "When they saw measles, measles was such a very serious disease they did this mental math and said measles are much worse than the vaccine could be, and measles is here. These diseases are only a plane ride away."

McFadden is not aware of any Amish doctrine opposed to vaccinations. Most of what he heard were concerns about autism, sterility and other concerns familiar to people in non-Amish communities. What was unique to the Amish, he said, was their quick resolve to get vaccinated.

The low vaccination rates in Holmes County allowed measles to spread to more people in Ohio last year than have been affected nationwide any year since 2001.

"I think people need to be aware that whenever there are concentrations of folks who aren't vaccinated,

everyone is at risk,” McFadden said.

This is because some people can't get vaccinated, such as very young children and people with immune disorders. They rely on an immunized public to create a buffer between them and sick people, health officials said.

“(The outbreak) runs into a brick wall,” Morens at the NIAID said. “The susceptible people just don't bump into each other often enough to keep the virus going.”

The percentage of the public that needs to be vaccinated or immune for this safety net to work varies based on the setting and disease. In general, health officials put it north of 90 percent.

But even vaccinated people are at some risk when herd immunity drops because the vaccines don't work on some people. The measles vaccine, for example, is 93 percent effective after one shot and 97 percent effective after two.

Team effort

State law says no child can remain in school after 14 days if they haven't shown written proof of their immunizations, but local schools said they do not exclude students from classes for incomplete records.

Instead they opt to work with parents to increase vaccination coverage.

“It's certainly concerning,” Northeastern superintendent Lou Kramer said of the low vaccination rates at some schools. “I think you have to look at the overall picture, though, and how are you going to help those students and those families protect their health in the future?”

Northridge Elementary had the second-worst immunization rate in the county in October with about 19 percent of kindergartners incomplete. Northeastern Local School District now is down to a half dozen kindergartners still in process across its three elementary schools.

Other schools in Springfield that reported low kindergarten immunization rates in October have managed to get most students complete throughout the school year.

Kenwood went from nearly 18 percent incomplete to less than 7 percent, Fulton from 17 percent to less than 2 percent, and Perrin Woods from nearly 15 percent to about 3 percent.

Excessive mobility in and out of districts and between schools in Clark County poses a unique challenge for nurses to keep up with vaccination records, Springfield City School District superintendent David

Estrop said.

Children with limited access to health care can easily get behind on a series of vaccinations, said Patty Free, nursing supervisor for the Clark County health district.

“Once a child is behind, it may be difficult to get them caught up. Parents also lose records or move and don’t take their records with them,” she said. “So often, when a child comes in for their booster or kindergarten series, we may find that they have only ever had one or two sets of vaccines.”

Using data

Although every school in the state is required to report vaccination data on kindergartners, seventh-graders and new students to the state every October, the data is not maintained in a format that is readily accessible to the public or even local health officials, the I-Team found.

In February, the News-Sun requested the reports submitted by local schools, but a Department of Health spokeswoman said they were not available. When pressed for the database, the state was able to produce only data from the current school year.

“We extract the information we need at the state level for our database and then that record is no longer kept,” ODH’s Melanie Amato said.

The data, however, is not forwarded to county health officials, who were surprised to learn some of the numbers. And the state has no enforcement capability even if schools report a high number of students not in compliance.

“If you’re not going to do anything with the data, then why collect it?” said Clark County health commissioner Charlie Patterson. “Why have the schools go through all of the time and trouble to do it?”

ODH is in the process of making school immunization data more readily available to local health departments beginning later this year, said spokeswoman Shannon Libby.

Local officials have agreed to monitor kindergarten immunization readiness as a quality indicator under new state health standards enacted last summer, she said.

“Whether we have the data or not from the state, we need to be drilling down into some of these target neighborhoods with some more specific assessments,” said Patterson, “and trying to see if we can change our programming in a place, at a time that is most efficient for our families.”

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Our reporters spent months pressing state officials for public health data they didn't want to release, then analyzed records for thousands of schools to bring you this exclusive report.