

In 2000, the United States declared the measles eliminated, thanks to widespread use of vaccines. But the virulent disease is back, with more than 1,000 cases confirmed nationwide this year through June 3—the greatest number since 1992. For every thousand cases, 1 to 3 people with measles will die, even with the best of care, according to the U.S. Centers for Disease Control and Prevention. So public health departments are redirecting scarce resources to try to control the spread.

Using basic techniques in place for over 100 years, public health investigators work to control an outbreak before it balloons. Such investigations have evolved with new technologies but remain among the best defenses against infectious disease outbreaks—and among the great untold costs of an epidemic.

The New York City Department of Health and Mental Hygiene, which has confirmed 566 measles cases since September, has spent more than \$2.3 million on related investigations. The Los Angeles County Department of Public Health estimates spending as much as \$2,000 to track down each contact of a confirmed patient—and it has made hundreds of such efforts in recent months.

“Public health departments across the country have had their budgets tightened in a sustained fashion over the past 15 years,” said William Schaffner, an infectious-disease specialist at Vanderbilt University. “There are no public health departments that are like firemen playing pinocle and waiting for an outbreak. They have other things to do, and they have to put aside those tasks to deal with an outbreak.”

At Cal State LA, public health officials visited the library and tried to figure out exactly where the infected student had gone—the photocopy area, for example—to determine who might have been exposed. They worked with the school to identify which library employees were present. They scoured library records to find anyone who had checked out books or logged onto a library computer during the specified time period.

But they realized they were missing others who may have come in to browse, work or eat at a library cafe. So school

officials sent out emails and posted on Facebook, Twitter and Instagram to ask anyone who may have been at the library to come forward.

Working together, Cal State and county health officials came up with a list of 1,094 people who were exposed; all were required to present proof they had been vaccinated or had immunity.

At one point during the investigation, 887 people were under a blanket quarantine order from the Los Angeles County Department of Public Health until they could establish their immunity status.

Public health departments regularly employ this sort of shoe-leather detective work to track and control outbreaks of sexually transmitted diseases

and foodborne illnesses like salmonella. But there is a palpable sense of frustration that sets the measles apart: It is easily preventable.

“We shouldn’t have to be using these ancient techniques. We should have everybody immunized,” said Alan Melnick, director of public health in Clark County, Wash., which logged 71 measles cases during a two-month outbreak that ended in February. “That’s what keeps me up at night. If we stop vaccinating, we can turn the clock back to the Middle Ages.”

Costly and distracting

In the course of Clark County’s outbreak, 237 people spent 19,071 hours doing outreach, investigation and monitoring the health of people exposed, at a cost of more than \$864,000. They investigated 53 exposure sites, including 15 schools and the arena where the Portland Trail Blazers play just across the state line in Oregon.

All this work meant delays in other programs, including restaurant health inspections and a home-visit program for high-risk pregnant women and infants.

“Just because the measles outbreak is going on, it doesn’t mean other communicable diseases are taking a holiday,” Melnick said.

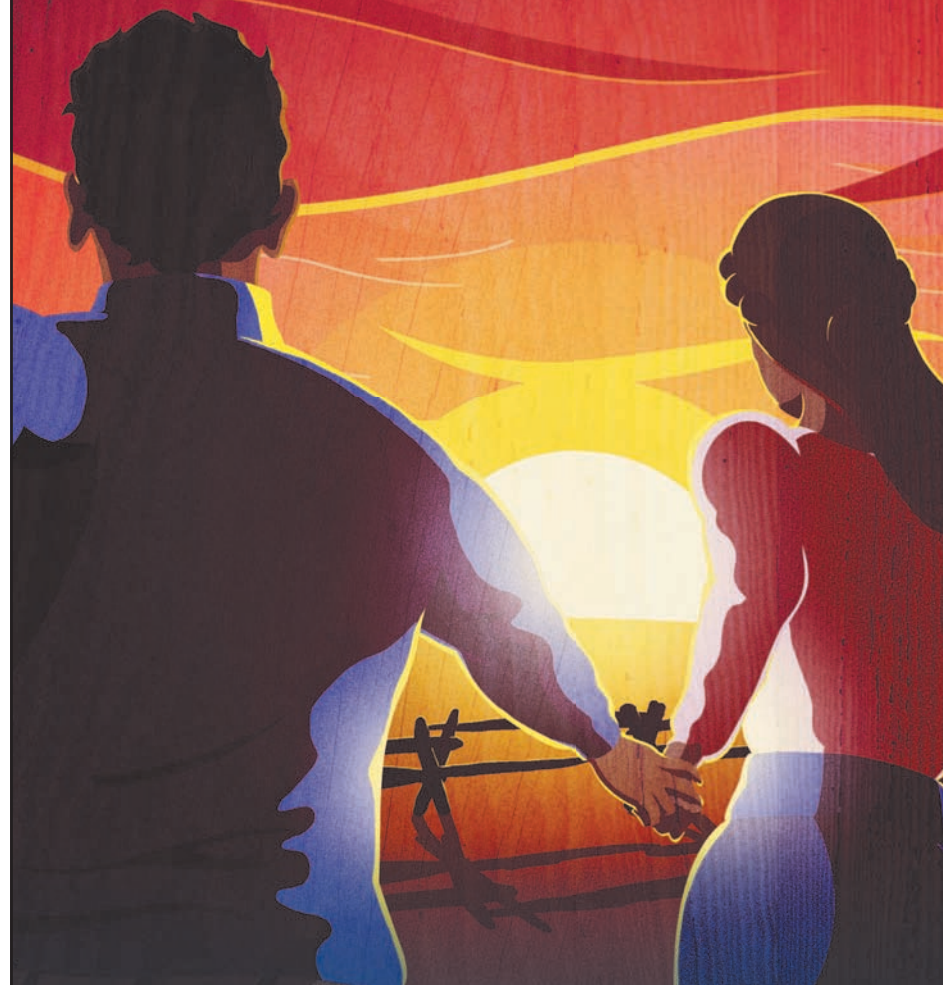
There was a time public health officials wouldn’t have bothered. Before the late 19th century, officials “were busy trying to control diseases like typhoid,

“THE MEASLES DETECTIVES”

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