

## About surveillance data

Oregon law specifies diseases of public health importance that must be reported to local public health authorities by diagnostic laboratories and health care professionals.<sup>1</sup> In general, for reported communicable diseases there follows an investigation by local public health officials to characterize the illness and collect demographic information about the case, to identify possible sources of the infection, and to take steps to prevent further transmission. Basic information about each case is forwarded to the Oregon Public Health Division. In some cases (e.g., *Salmonella* infection), laboratories are required to forward bacterial isolates to the Oregon State Public Health Laboratory for subtyping. Together, these epidemiologic and laboratory data constitute our communicable disease “surveillance system”; data from 2006 and trends from recent years are summarized in this report.

But caveat lector! Disease surveillance data have many limitations.

First, for most diseases, reported cases represent but a fraction of the true number. The most important reason for this is that many patients — especially those with mild disease — do not present themselves for medical care. Even if they do, the health care professional may not order a test to identify the causative microorganism. The reader may be scandalized to learn that not every reportable disease gets reported as the law requires. Cases are “lost” to surveillance along each step of the path from patient to physician to laboratory to public health department; in the case of salmonellosis, for example, reported cases are estimated to account for only about 3 percent of the true number.<sup>2</sup>

Second, cases that do get reported are a skewed sample of the total. More severe illnesses (e.g., meningococcal disease) are more likely to be reported than milder illnesses. Infection with hepatitis A virus is more likely to cause symptoms (and those symptoms are more likely to be severe) in adults than in children. Testing is not random; clinicians are more likely to test stool from children with bloody diarrhea for *E. coli* O157 than they are to test stool from adults with bloody diarrhea. Health care professionals may be more inclined to report contagious diseases like tuberculosis — where the public health importance of doing so is obvious — than they are to report non-contagious diseases like Lyme disease.

- 1 Oregon Administrative Rules, chapter 333, division 18. Available at <http://oregon.gov/DHS/ph/acd/oars/div18.shtml#018-0015>.
- 2 Chalker RB, Blaser MJ. A review of human salmonellosis: III. Magnitude of *Salmonella* infection in the United States. *Rev Infect Dis* 1988; 10:111-24.

Outbreaks of disease or media coverage about a particular disease can greatly increase testing and reporting rates.

In 2006, population estimates for rate calculations were obtained from the Center for Population Research at Portland State University ([www.pdx.edu/prc](http://www.pdx.edu/prc)). Using rates instead of case counts allows for comparisons between populations of different sizes — e.g., U.S. versus Oregon. Rates are usually reported as cases per 100,000 persons per year. However, if the population in which the rate is calculated is very small (e.g., in “frontier” counties in Oregon), a case or two might mean the difference between a rate of zero and a very high rate. To compensate for this, some of our maps showing rates by county give an average over five years of data or report case counts per county. Even with this aggregation, for some conditions, the number of cases remains small. In addition, the rates presented are not adjusted for age due to the small number of cases in each age group.

Also keep in mind that cases are assigned to the county of residence at the time of the report — not to the county in which the case received medical care.

Even with these limitations, surveillance data are valuable in a variety of ways. They help to identify demographic groups at higher risk of illness. They allow analysis of disease trends and identify outbreaks of disease.

With this in mind, we present this communicable disease summary. For most of the diseases, we include figures showing case counts by year for the past 10 years; aggregate case counts by month to demonstrate any seasonal trends; incidence by age and sex; incidence in Oregon as compared to national incidence over the past 10 years; and incidence by county. Where appropriate, subtyping data are included. At the end of the booklet you will find a brief tally of disease outbreaks reported in the past year, disease totals by county, and a summary table of statewide case counts over the past 20 years.

We hope that, with all their limitations, you will find these data useful. If you have additional questions, please call our epidemiology staff at 971-673-1111 or e-mail [ohd.acdp@state.or.us](mailto:ohd.acdp@state.or.us).



Paul R. Cieslak, M.D.

Manager, Acute and Communicable Disease Prevention