

## Gonorrhea

Gonorrhea is primarily a sexually transmitted bacterial infection affecting the genital tract, rectum, mouth or throat of men and women. Women are more likely to become infected after exposure to the causative bacterium *Neisseria gonorrhoeae*, but they are less likely than men to develop symptoms after infection. The proportion of infections that is symptomatic among women ranges from 20% to as high as 75%, but 95% of men with gonorrhea are symptomatic. Local symptoms of gonorrhea among women include painful urination, painful menses and pelvic pain, or discharge from the vagina and cervix or from the rectum. Men usually experience painful urination and discharge from the penis. Local complications among men include epididymitis and prostatitis. Both men and women who acquire gonorrhea through oral sex can experience sore throat and oral discharge. Gonorrhea can also be transmitted from mother to infant during childbirth, causing eye infections and sometimes disseminated infection.

Gonorrhea can cause serious complications, including pelvic inflammatory disease that sometimes leads to infertility or tubal pregnancy in women. Disseminated infections can cause arthritis and blisters on the skin in either sex, but such infections are rare. Untreated gonorrhea during pregnancy can cause premature delivery. Sometimes symptoms caused by gonorrhea can be difficult to differentiate from those caused by chlamydial infection. Simultaneous gonorrhea and chlamydia infections are not uncommon.

Oregon law requires health providers and laboratories to report cases of gonorrhea to the local health department. To the extent that resources allow, local public health personnel interview persons with gonorrhea to assure that they have received treatment and to assist with notification and treatment of sexual partners.

### Treatment

Usually, gonorrhea can be treated successfully with antibiotics, preventing transmission to partners and long-term health consequences. Unfortunately, resistance to antibiotics tends to appear rapidly among circulating strains of *Neisseria gonorrhoeae*. Since 2007, the only class of antibiotics that has reliably been effective against gonorrhea is the cephalosporins, and within the past year or two, microbiologists have begun to notice diminished susceptibility to cephalosporins in the laboratory. In Asia, but not yet in the United States, some cases have proved resistant to treatment with cephalosporins. Unfortunately, no clear alternative to cephalosporins exists for routine treatment of gonorrhea.

During 2013, 1,741 cases of gonorrhea were reported in Oregon residents (44/100,000 residents). Rates in men (60/100,000) exceeded rates among women (29/100,000). The rate was highest in Multnomah County (104/100,000 residents). Since 2002, Oregon rates have fluctuated in the range of 25 to 45 per 100,000 residents and remain well below those of the U.S. as a whole (99/100,000 residents during 2013.)

By age, the highest rates of reported gonorrhea occur among men 25–29 years old and women 20–24 years of age. Rates of gonorrhea remain higher in men starting at age 20 and above 70 cases per 100,000 residents through age 44 years. Many of these cases occur among those who acknowledge sex with other men; during 2013 at least 26% of cases occurred among men who acknowledged sex with other men. By race and ethnicity, African Americans were much more likely to have a reported case of gonorrhea (208/100,000 residents) than whites, Hispanics or people of other races (<50/100,000 residents).

A disproportionate number of gonorrhea cases occur in men who are infected with HIV. In Oregon, annual rates of gonorrhea among men with HIV have been more than 30 times higher than the rate among the general population; approximately 70 cases of gonorrhea each year occur in men with HIV.

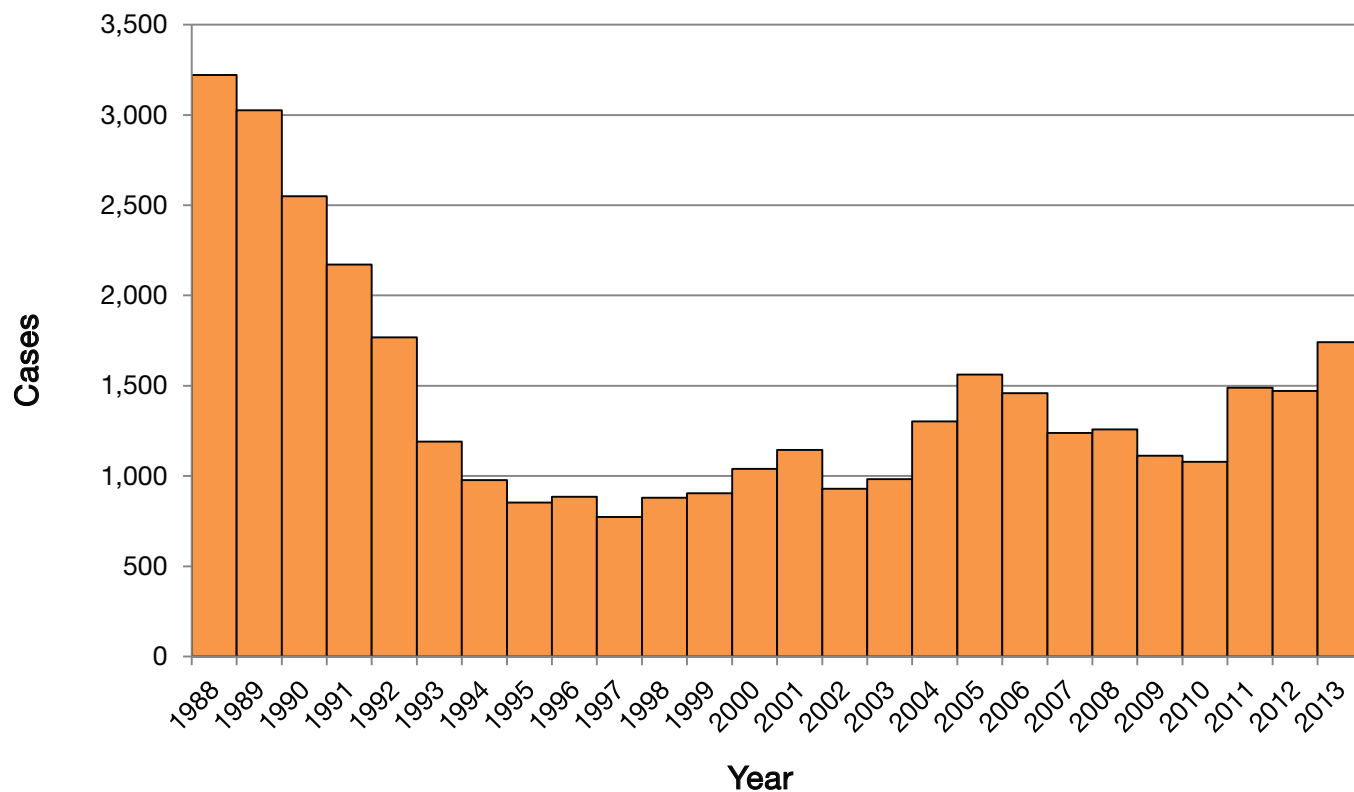
### Use of NAATs

In recent years, urine testing with nucleic acid amplification tests (NAATs) has made screening for gonorrhea much more convenient for clinicians and for patients. The use of NAATs, frequently

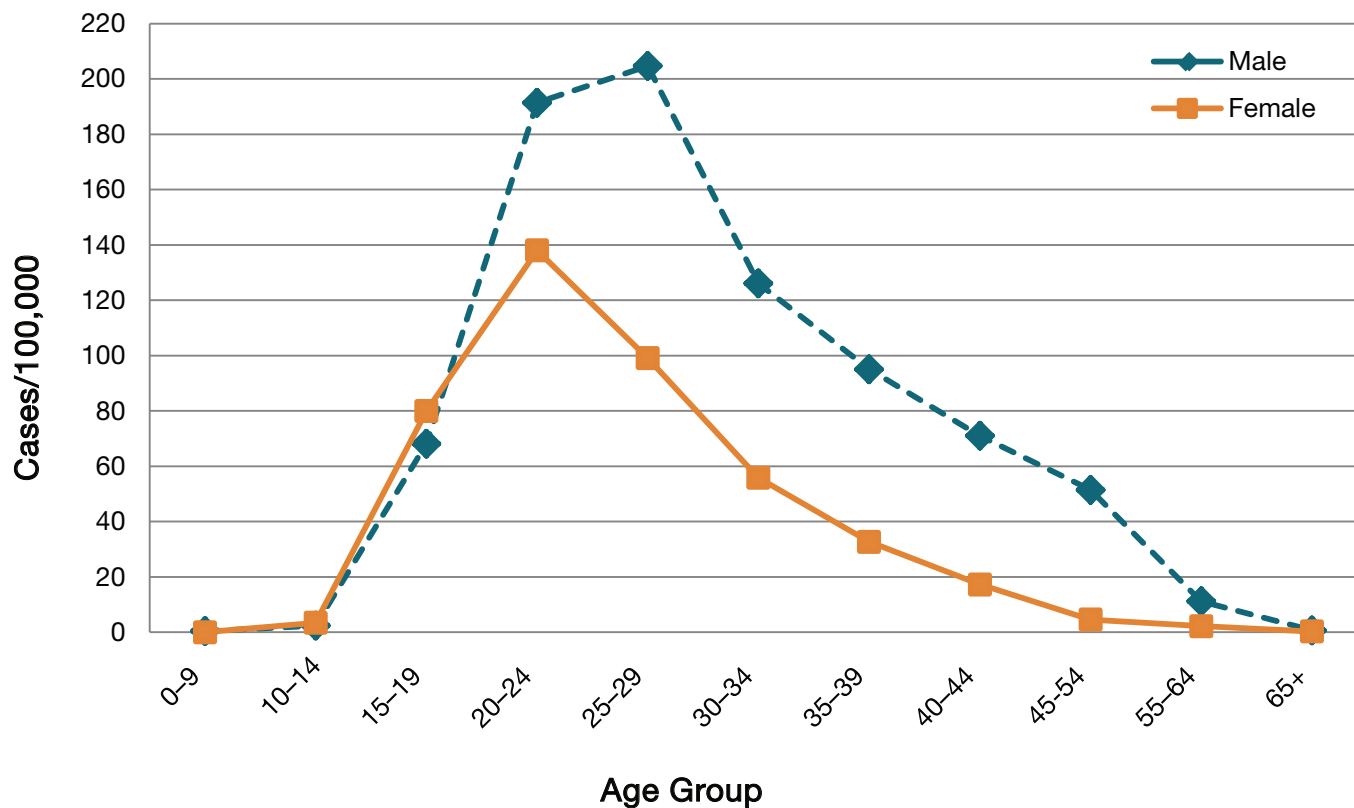
testing simultaneously for chlamydia and gonorrhea, has all but eclipsed culture for screening and diagnostic testing of gonorrhea. NAATs are very convenient and accurate. However, an unintended consequence may be the loss of laboratory capacity to culture *Neisseria gonorrhoeae* and test it for susceptibility to antibiotics. Such testing might become needed again if *N. gonorrhoeae* should become widely resistant to cephalosporins.

Guidance from the Centers for Disease Control and Prevention and the U.S. Preventive Services Task Force on screening for asymptomatic infections recommends that clinicians screen all sexually active women <25 years of age, including those who are pregnant, for gonorrhea if they have any of the following risk factors: a history of previous gonorrhea or other sexually transmitted infection, new or multiple sexual partners, inconsistent condom use, sex work, or drug use. Broader screening is recommended for groups with a higher incidence of infection than the general population. These groups include Multnomah County residents, African Americans and other blacks, and men who have sex with men.

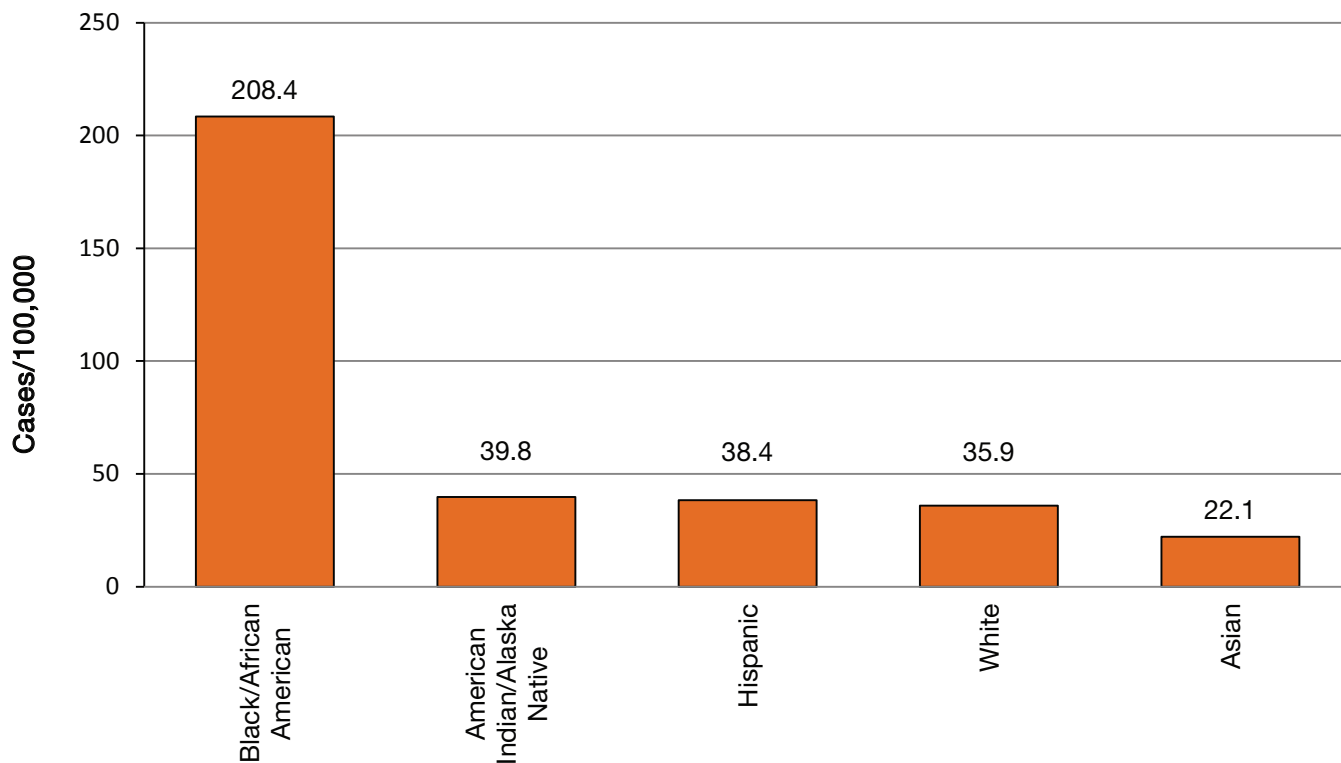
### Gonorrhea by year: Oregon 1988–2013



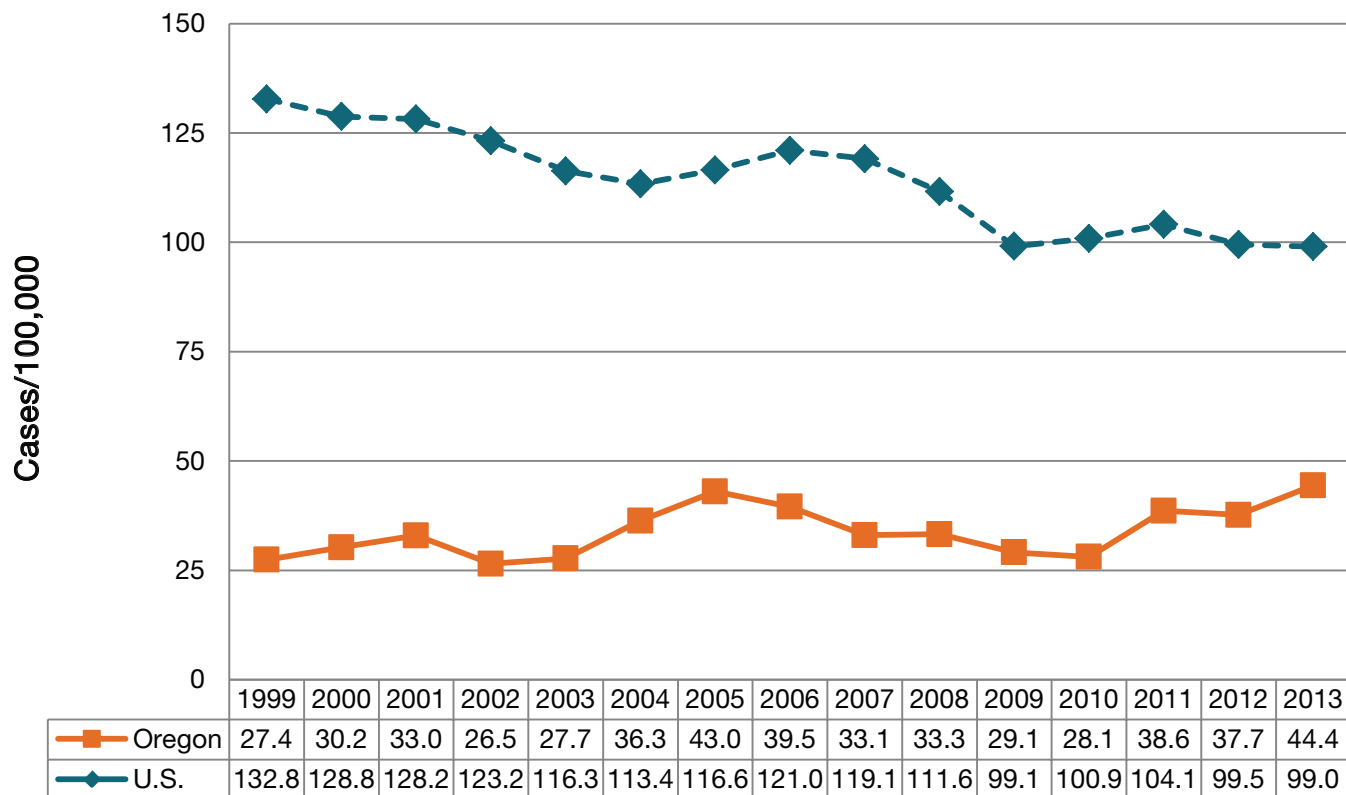
### Incidence of gonorrhea by age and sex: Oregon, 2013



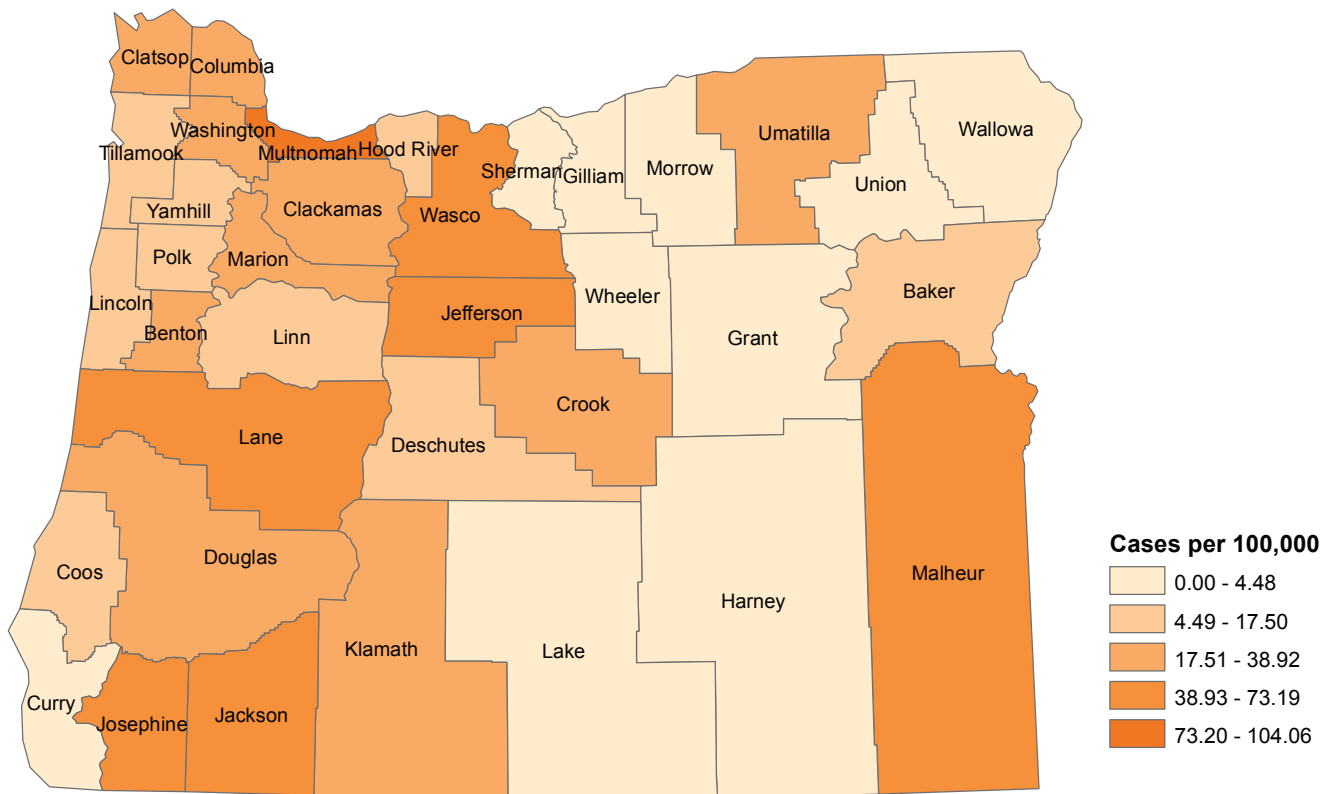
### Incidence of gonorrhea by race and ethnicity, Oregon, 2013



### Incidence of gonorrhea by year: Oregon vs. nationwide, 1999–2013



## Incidence of reported gonorrhea by county of residence, Oregon, 2013



## Prevention

Primary prevention strategies aim to prevent a person from becoming infected in the first place by:

- Delaying age at onset of sexual activity;
- Decreasing the number of sex partners;
- Using condoms properly from start to finish when having sex.
- Rapid identification and treatment of new cases can also be considered primary prevention when it results in averting transmission to a sex partner.

Secondary prevention strategies aim to eradicate existing infections by:

- Treating asymptomatic gonorrhea cases;
- Treating sex partners of people with gonorrhea;
- Periodic screening among high-risk populations, including women aged  $\leq 25$  years with new or multiple sex partners and inconsistent condom use, recent history of commercial sex work, and membership in demographic groups or residence in communities with high prevalence of gonorrhea.