



- Washoe County STD Update

## WASHOE COUNTY STD UPDATE

The Washoe County District Health Department's (WCDHD) Sexually Transmitted Disease (STD) Program and the Epi Center would like to provide the healthcare community with the following up-to-date information on common STDs in Washoe County.

### Background: Chlamydia and Gonorrhea

*Chlamydia* and gonorrhea are two of the most frequently reported communicable diseases in Washoe County. Prudent medical practice dictates the testing of any sexually active individual who is symptomatic with genitourinary pain or discomfort, and/or a discharge. However, as the vast majority of women (70-90%) have asymptomatic chlamydial infections, as well as a substantial proportion (at least 50%) of men, the importance of screening sexually active females and males may be indicated in order to capture asymptomatic infections. CDC recommendations include the screening of women 25 years old and younger for *Chlamydia* infection. Definitive recommendations regarding men of the same age range are not currently available, however healthcare providers may choose to screen male patients 24 years old and younger.

### Testing Methods: Chlamydia and Gonorrhea

Over the past several years, many new laboratory diagnostic products and procedures have been introduced for *Chlamydia trachomatis* (CT) and *Neisseria gonorrhoea* (GC) detection. Therefore, selection of the "best test" has become more of a challenge. Some factors to consider in choosing a diagnostic test are accuracy, cost, disease prevalence in the given population, specimen and test collection aspects, reported performance, purpose of testing and turn-around time.

Nucleic acid amplification tests (NAATs) have proven to be an excellent option in testing methodology. Urine, now accepted as a test specimen, offers greater ease in specimen collection, and is better received by patients, as it is not invasive. It also happens to have higher sensitivity and specificity, as noted below.

The most common test used for the detection of *Chlamydia* and gonorrhea is GenProbe's Pace II, which uses a swab for specimen collection. This method is 65-75% sensitive and 95-99% specific. For a test with higher sensitivity (95.8%-97.8%) and specificity (98.2%-98.9%), healthcare providers may opt for the less invasive, urine-based GenProbe Aptima test, which utilizes the aforementioned NAAT technology. Check with your laboratory provider to find out what tests their facility offers. More information is available from GenProbe at [http://www.gen-probe.com/prod\\_serv/std\\_aptima.asp](http://www.gen-probe.com/prod_serv/std_aptima.asp).

Polymerase Chain Reaction (PCR) testing technology, also NAAT technology, may be available through local private laboratories. For more information on PCR testing, contact the laboratory customer service representative for Roche Diagnostics at: [http://www.roche-diagnostics.com/ba\\_rmd/rmd\\_products\\_womens\\_health11.html](http://www.roche-diagnostics.com/ba_rmd/rmd_products_womens_health11.html).

### Epidemiology of Chlamydia and Gonorrhea

#### **Chlamydia (CT) Incidence:**

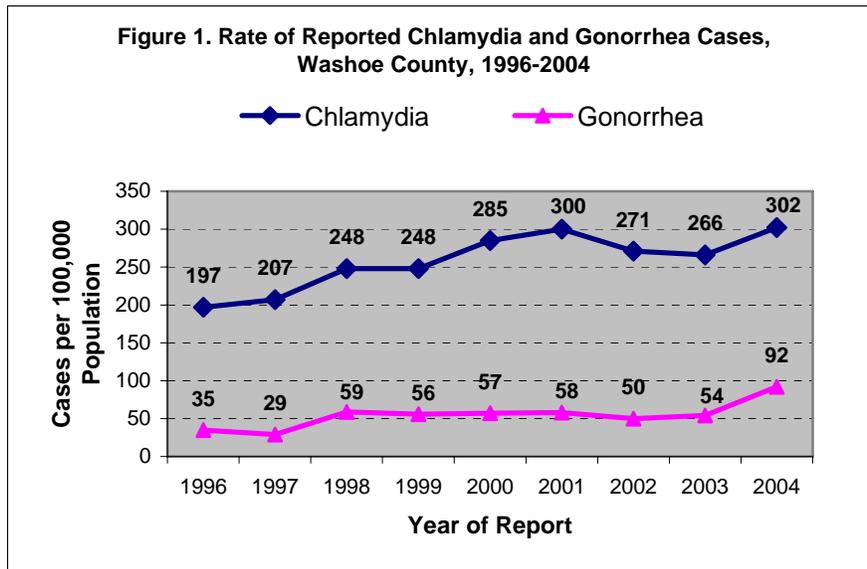
*Chlamydia* is the most frequently reported infectious disease in the United States as well as in Washoe County. In 2004, the incidence rate was 302 cases per 100,000 population (Figure 1) in Washoe County, the highest rate since 1996. This rate reflected a 14% increase compared to 266 cases per 100,000 population reported in 2003, and 9% higher than the statewide incidence rate of 277 cases per 100,000 population. This 14% increase was slightly higher than the 10% statewide increase from 2003 to 2004.

The 2003 national reported incidence rate was 304 cases per 100,000 population. In Washoe County, females aged 15-24 years presented the highest incidence rate at 2,044 cases per 100,000 population, almost seven times the incidence among the general population. In 2004, compared to the Healthy People 2010 national health objective of 3%, the proportion of females aged 15-24 testing positive for *Chlamydia* infection was 5.2% in WCDHD's Family Planning Clinic and Teen Health Mall and 27% in STD Clinic. Similarly, the proportion of males aged 15-24 years who tested positive for *Chlamydia* infection in the STD Clinic was 29.8% compared to the Healthy People 2010 national health objective of 3.0%.

#### **Gonorrhea (GC) Incidence:**

Gonorrhea was the third most frequently reported infectious disease in Washoe County in 2004. The reported incidence rate was 92 cases per 100,000 population (Figure 1) in 2004 in Washoe County, the highest rate since 1996. This rate reflected a 70% increase compared to 54 cases per 100,000 population reported in 2003, but is 28% lower than the statewide incidence rate of 127 cases per 100,000 population. This 70% increase was significantly higher than the 32% statewide increase from 2003 to 2004. The 2003 national reported incidence rate was 116 cases per 100,000 population. The Healthy People 2010 national health objective is 19 cases per 100,000 population. In Washoe County, African Americans have the highest incidence rate of 800 cases per 100,000 population, almost nine times the incidence of the general population.

**Please share this document with health care providers and infection control staff in your facility/office.**



Source of data: WCDHD Epi Center

### **Increased Gonorrhea Incidence Explained**

Many factors can account for morbidity increases. These factors include 1) increased use of more sensitive diagnostic tests; 2) increased screening activities; 3) improved reporting from health care providers and laboratories; 4) increased proportion of population engaging in risky sexual behavior leading to an actual increase of incidence; 5) case definition changes; and/or 6) outbreak occurrences.

Analysis of data from *Chlamydia* and gonorrhea screening conducted in WCDHD clinics between July 1, 2002, and the present reveals the major contributing factors to the significant increase of morbidity were the increased use of more sensitive diagnostic tests in the community and increased screening in WCDHD clinics. While the following statistics support the above conclusion, we are still seeking more community-wide data from private laboratories.

- ◆ Sixty-two percent of all confirmed CT and GC cases reported in Washoe County in 2004 were detected using NAAT-based methods compared to 41% in 2003.
- ◆ In 2004, 69% of confirmed GC cases tested by private lab #1 used NAAT-based methods compared to zero in 2003; 72% of confirmed GC cases tested by the Nevada State Public Health Laboratory (NSPHL) used NAAT-based methods in 2004 compared to 58% in 2003.
- ◆ The use of NAAT-based tests was expanded for screening among clients seen at WCDHD clinics (STD, Family Planning, Teen Health Mall, Wittenberg Juvenile Detention Center, and Adult Detention Facility). In 2004, 52% of screening tests for CT were NAAT-based compared to 43% in 2003; 66% of screening tests for GC were NAAT-based compared to 50% in 2003.
- ◆ In 2004, 3123 screening tests for GC were performed by WCDHD clinics compared to 2127 in 2003, reflecting a 47% increase in screening volume

for GC. In 2004, 144 GC cases were identified through this screening, compared to 70 in 2003 for the same setting (a 106% increase). Seventy-six percent of the GC cases identified through screening in WCDHD clinics, in 2004 were asymptomatic compared to 61% in 2003. Due to the significant increase in screening for GC in WCDHD clinics, in 2004 a large proportion of asymptomatic clients with infection were identified, and therefore reported. The major practice change between 2003 and 2004 is the change of tests offered at the NSPHL for WCDHD clients. Since late 2003, Aptima Combo 2 Assay replaced Abbot LCx at NSPHL. The two test kits utilize the same NAAT technology, but the former kit does not allow a clinician to order CT and GC separately as the latter does.

### **Sensitivity, Specificity, Disease Prevalence and Positive Predictive Values**

A question for public health consideration is, "If we are screening the population, what proportion of people who have the disease will be correctly identified?" To answer this question, we must analyze the validity of screening tests.

The validity of a test is defined as the ability of a test to distinguish between who has the disease and who does not. Validity has two components: sensitivity and specificity, both ranging from 1-100%. Sensitivity is defined as the ability of a test to identify correctly those who have the disease. Specificity is defined as the ability of a test to identify correctly those who do not have the disease. The sensitivity and specificity of one specific test can be obtained through a literature search or through lab professionals. Values of these two components are generated after multiple clinical trials and studies are conducted.

A question from the clinician's perspective may be, "if the test results are positive in this patient, what is the probability that this patient has the disease?" This can

be answered by looking at positive predictive value (PPV). PPV is defined as the proportion of patients who test positive who actually have the disease. Again, the range can be from 1-100%. As the PPV increases, the screening is considered more effective. PPV depends on three parameters: sensitivity, specificity and disease

prevalence (positivity rate). The following table illustrates how sensitivity, specificity and disease prevalence affect the PPV. Positivity rates are used as a proxy for prevalence. The impact of prevalence and specificity is greater than the impact of sensitivity.

**PPV for CT and GC, WCDHD Clinics, 2004\***

	Clinic	Positivity (%)	Sensitivity (%)**	Specificity (%)**	PPV (%)
<i>Chlamydia</i>	Family Planning Clinic	3.8	95.8	98.2	68
		3.8	71.6	98.2	61
		3.8	71.6	99.5	85
	STD Clinic	22.7	95.8	98.2	94
		22.7	71.6	98.2	92
		22.7	71.6	99.5	98
Gonorrhea	Family Planning Clinic	0.4	97.8	98.9	26
		0.4	71.6	98.9	21
		0.4	71.6	99.5	37
	STD Clinic	7.7	97.8	98.9	88
		7.7	71.6	98.9	84
		7.7	71.6	99.5	92

\* Source of data: WCDHD Epi Center & NSPHL

\*\* Higher sensitivity test = Aptima Combo 2 Assay; lower sensitivity = Gen Probe

### Recommendations for Clinicians

- ◆ A large proportion of people with STD infection do not show any symptoms, so it is imperative for clinicians to perform universal screening based on CDC's guidelines [Sexually Transmitted Diseases Treatment Guidelines -- 2002](http://www.cdc.gov/mmwr/preview/mmwrhtml/rr5106a1.ht) available on-line at: <http://www.cdc.gov/mmwr/preview/mmwrhtml/rr5106a1.ht>. Populations include:
  - ✓ Sexually active adolescent women -- at least annually.
  - ✓ Sexually active women aged 20-25 years -- annually.
  - ✓ Older women with risk factors, e.g., those with a new sex partner or multiple partners.
- ◆ Screening for CT and GC among asymptomatic high-risk populations is crucial to prevent the spread of disease. These populations include:
  - ✓ Females and males aged 15-25 years,
  - ✓ African Americans,
  - ✓ Men having sex with men,
  - ✓ Clients who have had multiple sex partners in the past 90 days and/or
  - ✓ Individuals who have had sex with someone with current or previous STD infection.
- ◆ Assure and maintain strict confidentiality with clients to promote disclosure of sexual practices.
- ◆ Be proactive in screening and counseling clients.

### Prevention & Education

Prevention, through education, is a fundamental component to decreasing the impact of STDs on our community. The WCDHD has integrated HIV and STD prevention education through the work of a Health Educator. Multiple approaches are used to influence behavior change through the practical application of

behavior change theory in the design and implementation of programming. Individual, group, and community level interventions are utilized, with an emphasis on implementing evidence-based interventions. The Health Educator provides presentations and extended educational sessions whenever requested. Ongoing education is provided in substance abuse treatment centers, potentially at-risk and disenfranchised youth, and detention facilities. Technical assistance is also provided to community-based organizations that implement prevention education.

Individual education and counseling is also provided through Public Health Nurses and Disease Intervention Specialists during contact with patients.

Provider training and education can be found at <http://stdhivtraining.org/>, through University of Nevada School of Medicine at (775) 784-1373, and through the WCDHD HIV/STD Health Educator at (775) 328-3647.

### Reporting Issues

The importance of testing for disease -- not just providing empirical treatment -- cannot be stressed enough. This ensures appropriate reporting and contact tracing to locate partners of people that are infected, thus reducing the burden of STDs in our community.

*Chlamydia*, gonorrhea, syphilis, hepatitis and HIV are reportable to the WCDHD per Nevada Revised Statutes Chapter 441A. Reports should be made within one working day. Evening or weekend reports are not required. Reports can be faxed to (775) 328-3764, or called to (775) 328-2447.