COUNTY OF LOS ANGELES
Public Health
Sexually Transmitted Disease Program

Sexually Tramsmitted Disease Testing in Los Angeles County
Clinical Laboratory Survey Report, 2004

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August 21, 2006

Dear Laboratory Director,

We are pleased to release our report, "STD Testing in Los Angeles County: Clinical Laboratory Survey Report, 2004", which will provide you with the results of our annual laboratory survey, for your reference. Your responses provide valuable information on STD testing in the County. We especially thank you for participating in this important project.

Among the major findings in this report clinical laboratories in Los Angeles County performed 5.4 million diagnostic tests for syphilis, chlamydia, and gonorrhea in 2004. Testing for these reportable diseases comprised 65% of diagnostic testing for all sexually transmitted diseases. The volume of diagnostic tests for both reportable and nonreportable STDs (excludes Pap smears) increased slightly (1%) between 2003 and 2004 after having decreased 9% between 2002 and 2003. As seen in 2003, the volume of Nucleic Acid Amplification Tests (NAATs) for chlamydia and gonorrhea far exceeded the number of tests using conventional methods, including culture and non-amplified DNA probe in 2004.

The electronic version of this report may be accessed at the STD Program web site, http://lapublichealth.org/std under "Reports." The Sexually Transmitted Disease Program produces several surveillance and special reports. To receive these reports, we invite you to visit http://ladhs.org/listserv. You may also call (213) 744-3070 and provide the attendant with your email address.

We welcome your comments. If you have any suggestions for improving the survey, please call Chandra Higgins, MPH, at (213) 744-3089 or Clarice Gillis at (213) 744-5979.

Sincerely,

Peter R. Kerndt, MD, MPH
Director, Sexually Transmitted Disease Program

Chandra Higgins, MPH
Laboratory Surveillance Coordinator

Sexually Transmitted Disease Testing in Los Angeles County, 2004

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The Clinical Laboratory Report is published annually by the Sexually Transmitted Disease Program of the Los Angeles County, Department of Health Services. This report is also available in PDF format, online at www.lapublichealth.org/std.

If you would like to receive surveillance reports and other information from the STD Program, you may register at http://ladhs.org/listserv or call (213) 740-3070 and provide the attendant with your e-mail address.

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INTRODUCTION

In 1987, the Los Angeles County Department of Health Services (DHS) Sexually Transmitted Disease (STD) Program initiated an annual survey of all clinical laboratories that test for syphilis, chlamydia, or gonorrhea in Los Angeles County (LAC). The aim of conducting surveys of this kind, which ask respondents to provide the same information at set intervals, is to detect and monitor trends and shifts in testing over time. The STD Program developed the Clinical Laboratory Survey to assist disease control efforts through laboratory surveillance activities. Each year the Los Angeles County STD program mails the laboratory survey to all labs that may have done STD testing during the previous calendar year. Laboratories that conduct any STD testing are asked to report the exact number of tests done for a series of STD's. The survey is reviewed and revised in conjunction with the state laboratory survey each year.

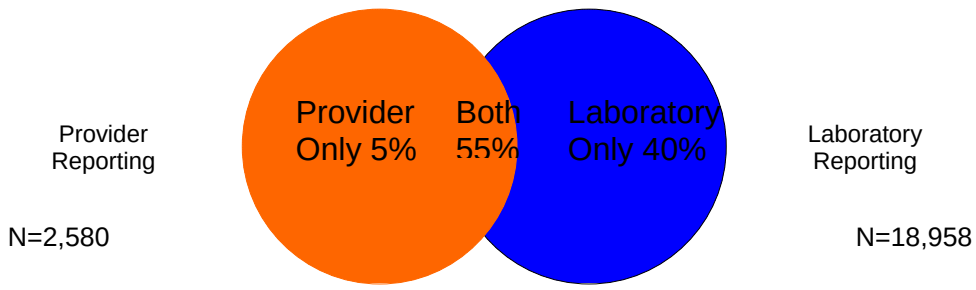
The STD lab survey reports on the level of testing by type of testing laboratory, disease, and test methodology. It tracks the implementation of recommended tests and confirmatory procedures. It aids in the monitoring of laboratory compliance with reporting regulations. Finally, the Annual Laboratory Survey Report provides a yearly update on laboratory reporting issues and the state of STD testing in Los Angeles County.

The 2004 Annual Clinical Laboratory Survey was mailed to 171 laboratories in March 2005. Of these, seven laboratories had discontinued testing for sexually transmitted diseases and one closed during the previous year, leaving a final sample size of 163. The overall response rate was 100% (163/163).

OVERVIEW

Under California law (*California Code of regulations, Title 17, Section 2500*), health care providers and laboratories must report sexually transmitted diseases to the provider's local health department. In practice, clinical laboratories are often the most reliable source of STD morbidity data. During 2004, laboratories sent reports on 94% of all reported gonorrhea, 95% of chlamydia, and 100% of all early syphilis cases. In comparison, providers submitted Confidential Morbidity Reports (CMRs) on 62% of all gonorrhea, 60% of chlamydia, and 52% of all early syphilis cases. In 2004, the number of cases being reported by both laboratories and providers was 55% of all chlamydia and gonorrhea cases. Five percent of chlamydia/gonorrhea cases were reported by providers only, 40% were reported by laboratories only (Figure 1).

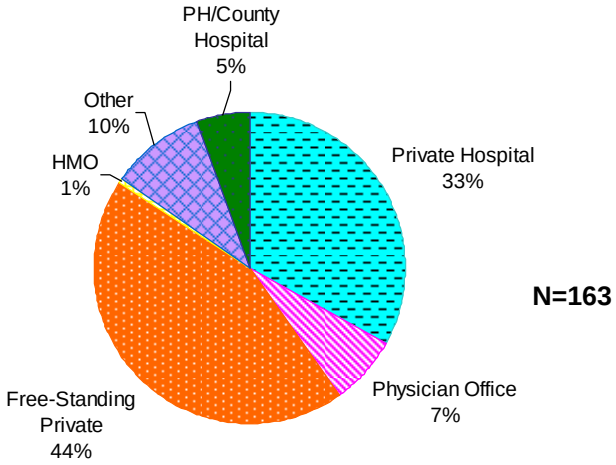
Figure 1. Percent of Cases Reported by Provider vs. Laboratory, Gonorrhea and Chlamydia, 2004



Source: Los Angeles County DHS STD Program

One hundred sixty three laboratories performed testing for sexually transmitted diseases in 2004. This represents a 9% decrease in laboratories since 2003, and a 48% reduction since 1990 when 314 laboratories reported testing. Several factors may explain this decline. One is the growth of managed care, which increased competition and reduced laboratory revenues. Higher operating expenses associated with the Clinical Laboratory Improvement Act of 1988 (CLIA 1988) added another financial pressure. In past years, these financial pressures forced several start-up laboratories that had planned to perform STD testing in LAC to withdraw applications for California clinical laboratory licenses.

Figure 2. Type of Lab Conducting STD Testing, 2004

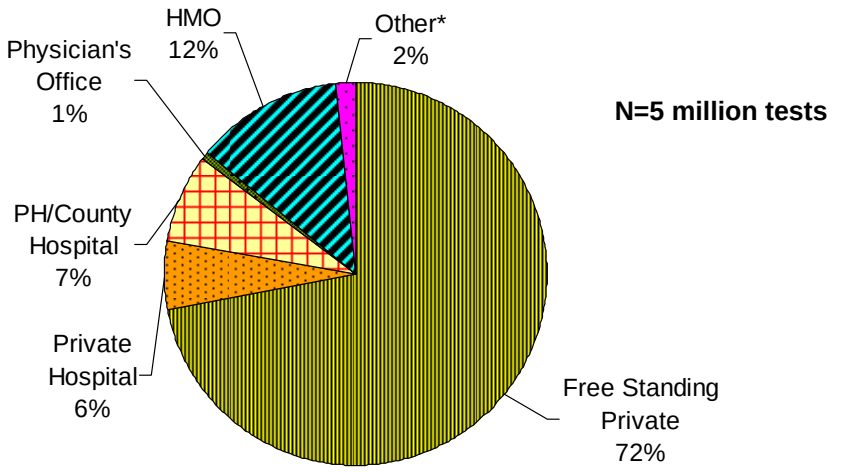


Most laboratories that performed STD testing in 2004 were either free-standing private laboratories or private hospital laboratories (Figure 2). Free-standing private laboratories, which included several large reference facilities, performed 72% of syphilis, chlamydia, and gonorrhea tests for the year. Laboratories in physician's offices, student health clinics, military hospitals, and custody facilities performed the least amount of testing, less than 3% combined (Figure 3).

Laboratories based in Los Angeles County performed little work for out-of-county providers, in fact 74% of labs processed specimens solely from county-based providers. Only 7% of laboratories received up to 5% of their STD workload from out-of-county providers. For 1% of laboratories, testing for providers outside of Los Angeles County comprised up to 90% of their workloads.

Reference laboratories, laboratories that provide confirmatory testing for another lab, comprised about 19% of laboratories performing STD tests in Los Angeles. Seventy-seven percent of laboratories sent positive tests out for confirmatory testing, which is equal to that of 2003. The proportion of laboratories that sent confirmatory tests to facilities outside of the County increased, from 30% to 35%.

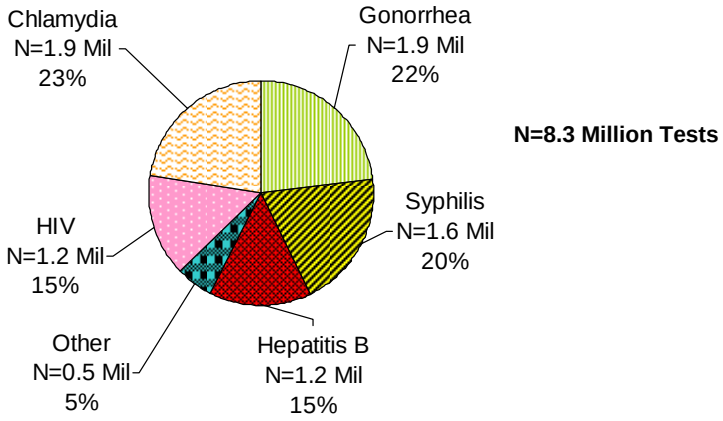
Figure 3. Test Volume by Type of Lab Facility, Syphilis, Chlamydia, Gonorrhea, 2004



*Includes student health clinics, military hospitals, and custody facilities

There were approximately 8.3 million diagnostic STD tests performed in Los Angeles County in 2004. Chlamydia and gonorrhea accounted for approximately 45% of the total testing with about 1.9 million tests each. There were 1.6 million syphilis and 1.2 million HIV tests performed in 2004. Hepatitis B tests were also common with about 1.2 million tests performed, or 15% of all diagnostic STD testing (Figure 4).

Figure 4. Diagnostic STD Testing by Disease, 2004

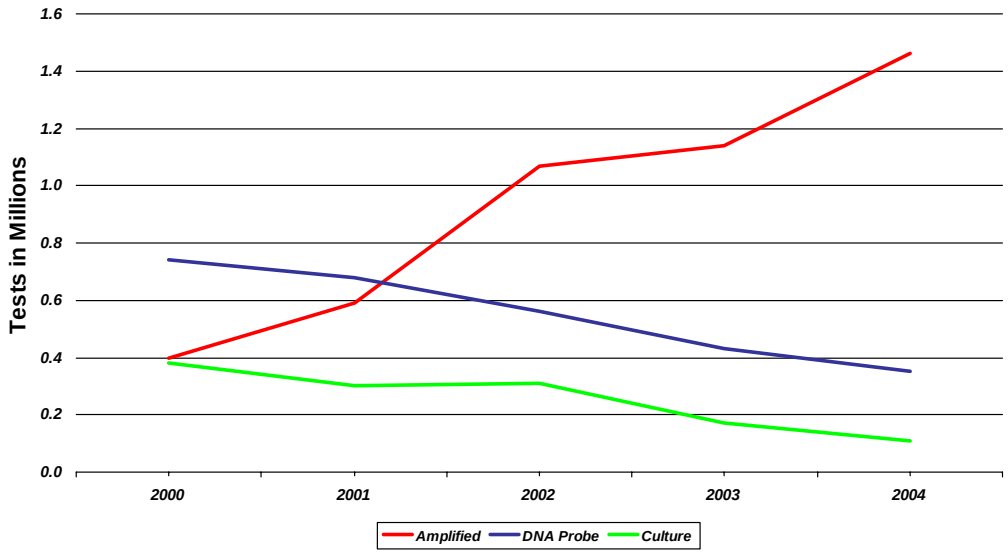


GONORRHEA

Laboratories performed 1,924,248 tests for *N. gonorrhoeae* in 2004, representing a 9.3% increase in test volume over 2003 (Table 1). Positive results were obtained in 1% of tests.

Since 2000, the use of Nucleic Acid Amplification Tests (NAATs) for gonorrhea has risen dramatically (Figure 5). NAATs, which offer superior sensitivity and specificity over conventional methods, include Polymerase Chain Reaction (PCR), Ligase Chain Reaction (LCR), Strand Displacement Amplification (SDA), and Transcription Mediated Amplification (TMA).

Figure 5. Growth in Amplified Testing, Gonorrhea, 2000 - 2004



NAATs testing for gonorrhea accounted for 26% of all gonorrhea tests in 2000. The amount of NAATs testing for gonorrhea more than doubled by 2002 representing 55% of gonorrhea tests performed. By 2004, NAATs assays comprised 76% of all gonorrhea tests. TMA tests, for example, totalled 20% (385,061) of gonorrhea tests in 2004. By comparison, laboratories reported only 757 TMA tests (<1%) in 2001, the first time the test appeared in the laboratory survey. Fifty facilities performed 1,461,036 nucleic acid amplification tests, yielding 12,976 (0.9%) positive results. Sixty-seven percent of laboratories confirmed all NAATs positives, 4% confirmed weak positives only, and 27% did not confirm positive results.

The proportion of non-amplified DNA probe testing has been declining steadily over the past five years. Used for 49% of all gonorrhea tests in 2000, its use dropped to only 29% of tests by 2002. In 2004 non-amplified DNA probe testing continued its trend, accounting for only 18.2% of all gonorrhea tests.

Despite the popularity of nonculture tests for gonorrhea, isolation of *N. gonorrhoeae* in culture remains the diagnostic gold standard. Ninety-eight laboratories performed 112,325 gonorrhea culture tests in 2004, 6% of all gonorrhea tests. More than 1% (1,468) of cultures were positive, or 9% of all positive tests. Twenty percent of laboratories that process cultures performed antibiotic susceptibility testing on positive urethral and cervical cultures, and 52% performed

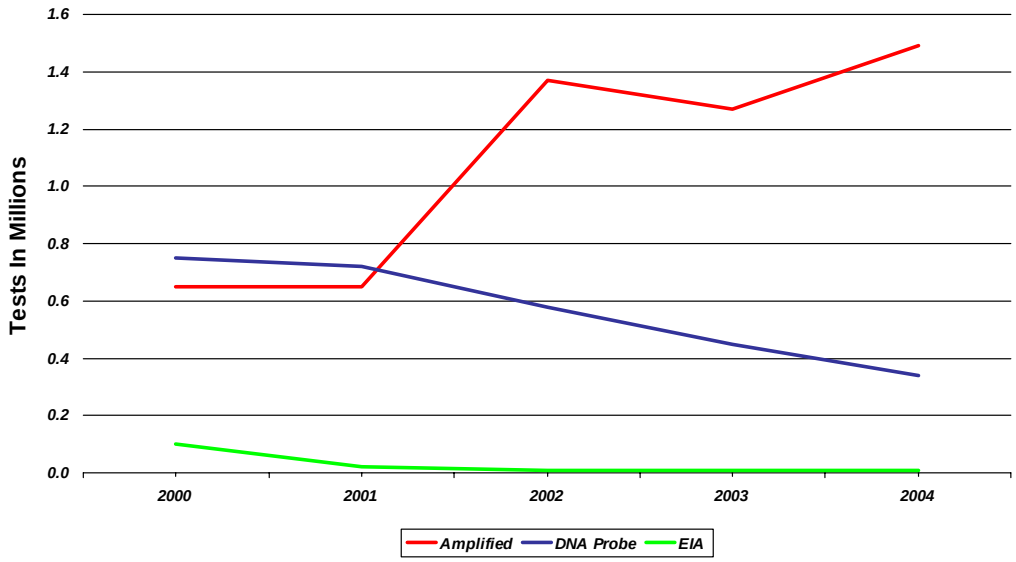
beta-lactamase testing on gonococcal isolates. In 2004, 61 laboratories reported 7,058 urethral Gram stains; 2.4% were positive.

CHLAMYDIA

Laboratories performed 1,878,977 *C. trachomatis* tests in 2004 (Table 2). Positive findings were obtained in 4% of these tests.

Much like gonorrhea the majority of chlamydia tests in 2004 were with DNA amplified techniques such as NAATs or amplified probe. NAATs testing, more than doubled between 2001 and 2002, and continued to increase in 2004 (Figure 6). Forty-six laboratories chose PCR, LCR, SDA, TMA and Hybrid Capture to evaluate 80% of all chlamydia tests in 2004 (Figure 7). Culture and direct fluorescent antibody (DFA) tests were among the least preferred methods for 2004, used in only 1.5% of tests. Because of recommendations to use NAATs testing, the use of these tests has been declining since 1992. Laboratories performed 1,494,907 assays, obtaining positive results for 57,850 tests (3.9%). Sixty-one percent of laboratories confirmed all positive results, 9% confirmed weak positives only, and 26% did not confirm positives.

Figure 6. Growth In Amplified Testing, Chlamydia, 2000 - 2004

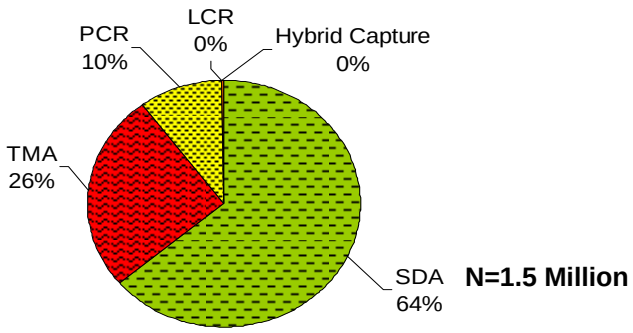


The use of enzyme immunoassay (EIA), once one of the most commonly performed chlamydia tests, has been declining over the past five years while the use of NAAT has grown. In 2000, 6.3% of chlamydia tests were performed using EIA; that percentage dropped to under 1% in 2004. Positive EIA results should be verified with a blocking assay because tests for chlamydia lipopolysaccharide (LPS) are non-specific for *C. trachomatis* and cross-react with some bacteria. Nevertheless, only 10% of laboratories reported verifying presumptively positive EIA tests with a different type of chlamydia assay during 2004.

The non-amplified DNA probe assay had dominated chlamydia testing in Los Angeles County between 2000 and 2001. Twenty-four laboratories used the assay for 18% of chlamydia tests in 2004, down from 50% in 2001. Eighty-six percent of laboratories repeated DNA probe findings

in the "gray zone." Only 32% also checked presumptively positive results with a different type of assay. Laboratories did not report the use of rapid chlamydia tests in 2004.

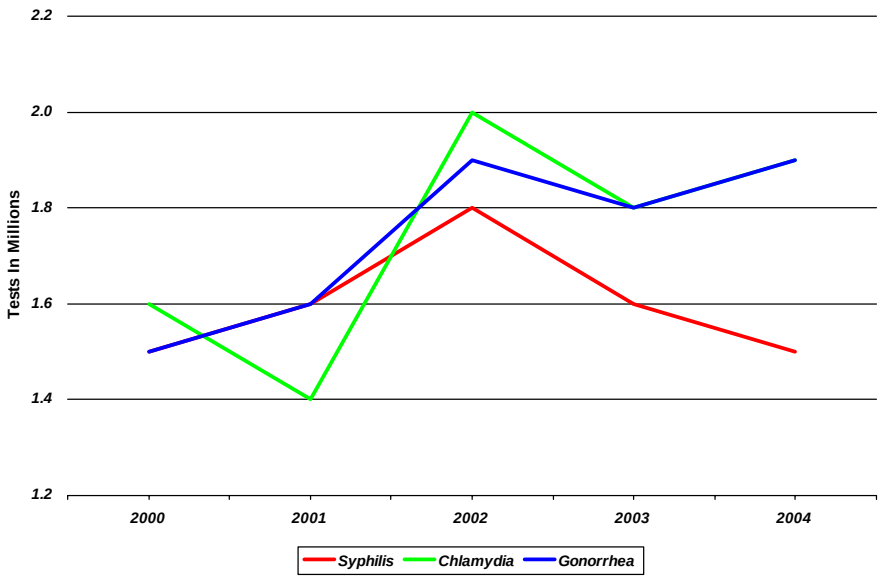
Figure 7. Amplified Methods, Chlamydia Tests, 2004



SYPHILIS

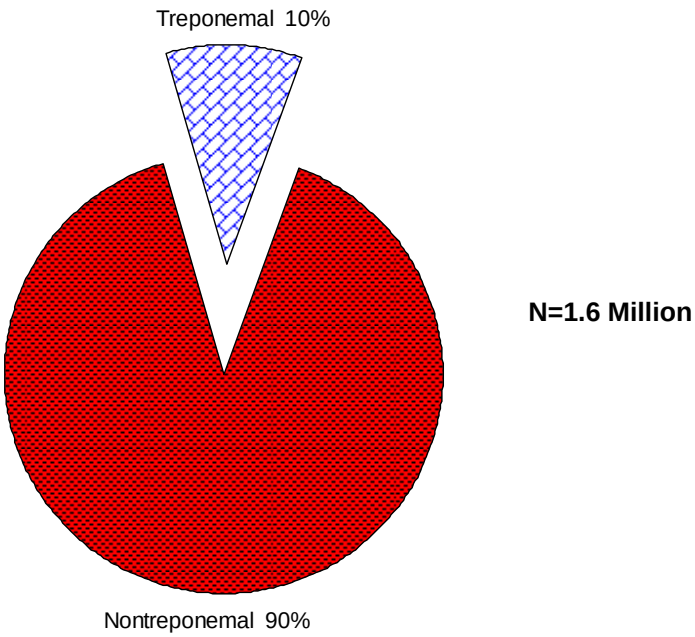
The volume of syphilis tests in LAC increased from 2000 to 2001, and continued to increase until peaking at about 1.8 million tests per year in 2002 (Figure 8). The trend reversed in 2003 when the number of tests dropped by 14% over the previous year, equalling about 1.5 million tests. The number of syphilis tests reported decreased again by 7.4% in 2004 making the overall trend appear stable (Table 2).

Figure 8. L.A. County STD Testing 2000 – 2004
All Diagnostic Testing



In 2004 LAC laboratories performed 1,465,785 nontreponemal tests (Figure 9); 1.7% were reactive. The proportion of reactive nontreponemal tests has fluctuated between 1.4% and 2.0% throughout the past five years. Rapid Plasma Reagin (RPR) tests remained the test of choice, performed by 144 laboratories and totalling 98% of nontreponemal tests. Only two laboratories performed Venereal Disease Research Laboratory (VDRL) blood tests. Nineteen laboratories also ran CSF (cerebrospinal fluid) VDRL tests to rule out neurosyphilis. One percent, or 117, of 10,953 CSF VDRL tests performed in 2004 were reactive. Forty-eight percent of screening laboratories diluted "rough" RPR and VDRL tests to rule out prozone reactions (the effect that excess antibodies have on immunological reactions).

Figure 9. Syphilis Testing, 2004



Twenty-four percent of laboratories performed confirmatory syphilis tests. Twenty-three laboratories performed 26,814 Fluorescent Treponemal Antibody Absorption (FTA-ABS) tests; 10,786 (40%) were reactive. Nineteen labs also performed 15,748 Treponema Pallidum Particle Agglutination (TP-PA) confirmatory tests; 7,917 (50%) were reactive. Three laboratories performed 121,137 enzyme immunoassay / Immunoglobulin IgG/IgM tests (EIA/IgG/IgM); 3,918 (3.2%) tested positive. Eleven dark field examinations were performed county-wide. None were positive. Four laboratories screened 29,554 blood bank specimens for syphilis. Less than 1% of these tests were reactive.

CHANCROID

Although endemic in tropical countries, this clinician-reportable bacterial STD is comparatively rare in the United States. Laboratory diagnosis of *Haemophilus ducreyi* infection is difficult. Gram stains are unreliable and the classic "school of fish" formation of organisms often difficult to interpret in clinical specimens. EIA and PCR testing methods for chancroid are not currently

available in Los Angeles. Culture remains the method of choice for definitive diagnosis, and this requires special media and incubation conditions.

Four laboratories processed 17 chancroid cultures during 2004, none of which were positive.

NON-REPORTABLE STDS: TESTING FOR HIV, HPV, HSV, AND HEPATITIS B

Tests for non-reportable STDs comprised about 35% of the STD testing performed in LA County during 2004. During the year, 93 laboratories performed 1,199,483 HIV EIA screenings on oral, serum, and urine specimens combined (Table 3); about 1% (14,453) tested positive. Sixteen laboratories performed confirmatory HIV testing by either Western Blot (WB) or Indirect fluorescent antibody (IFA). Respondents reported confirming 72% of 19,344 WB and 83% of 318 IFA tests.

In 2004, nineteen laboratories performed 97,293 CD4 tests, 12 processed 81,169 PCR viral load tests and four performed 21,265 bDNA tests. Five labs performed blood bank testing for HIV yielding 235 positive units out of 186,502 tested.

Fifteen laboratories performed Human Papillomavirus (HPV) typing using Hybrid Capture 2 in 2004. High risk types were reported in 36% (61,380) of 168,381 tests and low risk types were identified in 20% (1,851) of 9,422 tests.

Though Pap smears do not test for sexually transmitted diseases, an abnormal smear can be one indicator of HPV infection. During 2004, 45 laboratories performed 2,729,492 Pap smears. Readings of AS-CUS and higher were reported in 214,140 (8%) samples.

One-hundred eight facilities performed 1,222,772 Hepatitis B surface antigen tests. Positive results were obtained in 33,028 (2.7%) tests.

Laboratories performed 260,189 tests for Herpes Simplex Virus (HSV) in 2004, with 78,989 (30%) testing positive. Eighteen laboratories performed 62,634 HSV cultures, isolating the virus in 13,234 (21%) cultures. Direct antigen tests, including Enzyme Immunoassay (EIA), and Direct Fluorescent Antibody (DFA), comprised 4.4% of herpes tests and 4.1% of positive results. Serological testing for herpes comprised 67% of all herpes tests. Six laboratories processed 3,729 specimens for non-specific HSV antibody, obtaining positive results in 3,229 (87%) tests. Eighteen performed 79,936 tests for type-specific HSV-2 IgG antibody. Positive results were given for 19,908 (25%) tests. Seven laboratories performed type-specific HSV-2 IgM antibody tests. These laboratories processed 27,126 specimens and reported 4,715 (17%) positives.

LIMITATIONS OF DATA

The Annual Clinical Laboratory Survey reports on testing for sexually transmitted diseases performed in LAC; however, the survey does not include tests performed by out-of-county laboratories for providers in LAC. The survey likely underestimates the number of diagnostic tests performed for the County. Thus caution should be taken when interpreting these findings. Another limitation is the ability to identify all laboratories that performed testing for sexually transmitted diseases in LAC. Laboratories selected to complete a survey were known to have reported gonorrhea, syphilis, or chlamydia testing during 2004. Laboratories that tested for nonreportable STDs only were excluded from the sample. An additional limitation was the inability to obtain responses from all testing laboratories that closed. Only those that could be located through forwarding addresses and had ready access to their files completed surveys.

STD PROGRAM ACTIVITIES SUPPORTING LABORATORY REPORTING

STD Program staff routinely visit reporting laboratories to encourage timely, complete reporting and provide assistance. Visitations improve cooperation between laboratories and the STD Program, increase compliance with reporting laws, and provide an opportunity to ask questions and share information.

STD Program staff have prepared a comprehensive information packet to help laboratories meet their reporting requirements. The packet provides reporting instructions and discusses the role of laboratories in disease control and intervention. It also includes copies of the California Code of Regulations on laboratory reporting and information on the Health Insurance Portability and Accountability Act (HIPAA) and Public Health from the Centers for Disease Control and Prevention (CDC). Call Clarice Gillis at (213) 744-5979 to request a packet.

Please direct questions about the survey or laboratory reporting issues to Chandra Higgins, MPH at (213) 744-3089.

GLOSSARY

bDNA: Branched DNA. Measures HIV RNA. Used to monitor infection progression, monitor response to therapy, and evaluate prognosis.

CD4 cell: A type of white blood cell. Also called a T-lymphocyte or helper T-cell. T-cells activate antibody responses against viruses and bacteria. The HIV virus targets helper T-cells.

CD4 count: An assessment of immune status that involves quantifying (measuring) T-lymphocytes. CD4 counts may be used to monitor treatment. Individuals with lowered CD4 counts are at greater risk of developing opportunistic infections.

Chlamydia trachomatis: The causative agent of chlamydia.

Culture: To grow bacteria or viruses using media or cells. Agent is then isolated and identified. A highly specific form of disease identification.

DFA: Direct Fluorescent Antibody. Direct detection of organism in a clinical specimen using monoclonal antibodies and immunofluorescent microscopy.

DNA Probe: Non-amplified probe. Detects organism nucleic acid directly from specimen.

EIA/IgG: Enzyme Immunoassay/ Immunoglobulin G. Assay for the indirect detection of IgG antibody to *Treponema pallidum.*

FTA-ABS: Fluorescent Treponemal Antibody Absorption. A confirmatory blood test for Syphilis that detects antibodies directed specifically to *Treponema pallidum*.

IFA: Indirect Fluorescent Antibody. Blood test for the presence of antibodies similar to Western Blot.

LCR: Ligase Chain Reaction. Test combines amplification and detection of organism DNA in a clinical specimen.

NAAT: Nucleic Acid Amplification Test. Generic name for nucleic acid amplification tests such as LCR, PCR, SDA, and TMA.

Neisseria gonorrhoeae: The causative agent of gonorrhea.

PCR: Polymerase Chain Reaction. A nucleic acid amplification technique. The amplified product is then identified using another test.

prozone reaction: Effect of antibody excess in immunological reactions. The antibody -antigen reaction may be partially or completely inhibited when the antibody level is greater than the amount required for the reaction.

Reference laboratory: A laboratory that performs STD testing for another laboratory. Laboratories that use reference laboratories often perform screening tests themselves and send positive specimens to reference laboratories for confirmatory testing.

RPR: Rapid Plasma Reagin. A sensitive but non-specific screening test for syphilis. Positive tests must be confirmed with a test that is specific for antibodies to the treponemal antigen.

SDA: Strand Displacement Amplification. Amplification and detection of organism DNA in a clinical specimen.

TMA: Transcription Mediated Amplification. Amplification and detection of organism DNA or RNA in a clinical specimen.

TP-PA: Treponema Pallidum Particle Agglutination test. A confirmatory test for syphilis.

Treponema pallidum: The causative agent of syphilis.

viral load for HIV: The number of viral particles per milliliter of blood. Used to monitor and manage treatment. Also used to predict how long someone will remain healthy or how quickly disease may progress.

VDRL: Venereal Disease Research Laboratory. A non-specific test for syphilis. Positive tests must be confirmed with a test that is specific for antibodies to the treponemal antigen.

Table 1. GONORRHEA TESTING IN LOS ANGELES COUNTY, BY TYPE OF TEST, 2000 - 2004

STD & Type of Test	# of Tests Characteristics	Testing Year (# of responding laboratories*) 2000 (189)	2001 (168)	2002 (170)	2003 (179)	2004 (163)
GONORRHEA Culture	# of Tests	375,194	304,170	307,092	174,392	112,325
	Positive Tests	2,651	2,446	4,188	1,499	1,468
	% Positive	0.7	0.8	1.4	0.9	1.3
GONORRHEA DNA Probe	# of Tests	737,419	679,081	557,217	432,079	350,887
	Positive Tests	8,202	7,934	5,602	3,619	2,398
	% Positive	1.1	1.2	1.0	0.8	0.7
GONORRHEA Amplified Tests	# of Tests	400,902	589,789	1,066,056	1,138,781	1,461,036
	Positive Tests	4,982	15,194	10,871	9,147	12,976
	% Positive	1.2	2.6	1.0	0.8	0.9
TOTAL Gonorrhea Tests**	# of Tests	1,513,515	1,573,040	1,930,365	1,760,214	1,924,248
	Positive Tests	15,835	25,574	20,661	14,060	16,842
	% Positive	1.0	1.6	1.1	0.8	0.9

*Number of responding laboratories represents all laboratories known to be performing at least one type of test for a reportable STD.
**Includes GC testing by urethral Gram stain, GC culture, DNA probe, and nucleic acid amplification tests (NAAT).

Table 2. CHLAMYDIA AND SYPHILIS TESTING IN LOS ANGELES COUNTY, BY TYPE OF TEST, 2000 - 2004

STD & Type of Test	Test Characteristics	Testing Year (# of responding laboratories*) 2000 (189)	2001 (168)	2002 (170)	2003 (179)	2004 (163)
CHLAMYDIA Culture	# of Tests	24,543	20,298	19,098	13,714	19,447
	Positive Tests	470	354	370	302	772
	% Positive	1.9	1.7	1.9	2.2	4.0
CHLAMYDIA Direct Fluorescent Antibody (DFA)	# of Tests	22,297	28,686	20,070	12,158	9,651
	Positive Tests	475	556	361	218	600
	% Positive	2.1	1.9	1.8	1.7	6.2
CHLAMYDIA Enzyme Immunoassay (EIA)	# of Tests	97,577	21,943	10,319	9,334	11,231
	Positive Tests	5,575	1,676	362	244	1,512
	% Positive	5.7	7.6	3.5	2.6	13.5
CHLAMYDIA DNA Probe	# of Tests	751,016	715,393	580,520	449,675	343,741
	Positive Tests	26,119	23,517	15,020	8,751	5,782
	% Positive	3.5	3.3	2.6	1.9	1.7
CHLAMYDIA Amplified Tests	# of Tests	654,658	646,739	1,373,845	1,269,720	1,494,907
	Positive Tests	28,543	30,672	50,985	49,808	57,850
	% Positive	4.3	4.7	3.7	3.9	3.9
TOTAL Chlamydia Tests	# of Tests	1,553,570	1,434,617	2,003,852	1,754,601	1,878,977
	Positive Tests	61,356	56,806	67,098	59,323	66,516
	% Positive	3.9	3.9	3.3	3.4	3.5
SYPHILIS RPR & VDRL	# of Tests	1,496,517	1,646,529	1,834,839	1,582,554	1,465,785
	Positive Tests	30,799	27,015	26,685	28,486	24,565
	% Positive	2.0	1.6	1.4	1.8	1.7

*Number of responding laboratories represents all laboratories known to be performing at least one type of test for a reportable STD.

Table 3. HIV TESTING IN LOS ANGELES COUNTY, by type of test, 2000 - 2004

Type of Test	Test Characteristics	Testing Year (# of laboratories performing HIV testing)				
		2000 (120)	2001 (100)	2002 (102)	2003 (104)	2004 (93)
HIV ENZYME IMMUNOASSAY (EIA)	# of Tests	1,088,549	1,377,076	1,631,371	1,349,736	1,199,483
	Positive Tests	14,937	15,235	17,777	23,158	14,453
	% Positive	1.4	1.1	1.1	1.7	1.2
HIV RAPID TESTS	# of Tests	None reported	None reported	None reported	None reported	None reported
	Positive Tests	-	-	-	-	-
	% Positive	-	-	-	-	-
HIV INDIRECT FLUORESCENT ANTIBODY (IFA)	# of Tests	288	305	331	308	318
	Positive Tests	221	247	267	224	265
	% Positive	76.7	81.0	80.7	72.7	83.3
HIV WESTERN BLOT	# of Tests	21,029	26,917	30,109	23,795	19,344
	Positive Tests	13,978	16,310	19,365	11,763	13,873
	% Positive	66.5	60.6	64.0	49.4	71.7
HIV POLYMERASE CHAIN REACTION (PCR)	# of Tests	6,248	3,449	10,351	13,186	14,779
	Positive Tests	355	314	197	187	184
	% Positive	5.7	9.1	1.9	1.4	1.2
CD4	# of Tests	78,650	132,631	142,084	138,176	97,293
VIRAL LOAD:PCR	# of Tests	61,391	104,447	120,203	67,249	81,169
VIRAL LOAD:bDNA	# of Tests	41,930	85,419	64,667	26,167	21,265
VIRAL LOAD:PCR&bDNA*	# of Tests	19,921	23,706	4,221	87,336	62,595

*Branched DNA

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