

## POSTER ABSTRACTS



P1

## Feminine Hygiene Practices and Douching Behavior in High-Risk Adolescents: What do They Use, When and Why Do They Douche?

*MK Oh, PR Brown, J Witherspoon, J Merchant, RA Feinstein*

University of Alabama at Birmingham, Birmingham, AL

**Background:** Vaginal discharge is a common complaint presented by incarcerated teenagers. Types of feminine hygiene practices may be linked to vaginal complaints.

**Objectives:** To obtain information necessary for planning feminine hygiene/sex education curriculum in a correctional institution for adolescent women.

**Methods:** An anonymous survey (ten items) was administered to girls (majority rural) admitted to a correctional institution for girls in the southern US. Those who used douching products were asked seven additional questions.

**Results:** In a period of one month, 55 girls were surveyed. Mean age was 15.4±1.7 years, menarcheal age 11.8±1.3, age at sexual debut 13±1.5. For sanitary protection, 16% used pads only, 41% used tampons and the rest used both. Use of feminine hygiene products were reported by: 5% suppository, 31% towelette, 42% sprays, feminine wash 64%, and 75% douche. Douching product users were significantly more likely to use other feminine hygiene products ( $p=.007$ ), know someone who douches regularly ( $p=.0004$ ), have watched douche TV commercials ( $p=.0006$ ) and more likely to believe douching prevents infections ( $p=.03$ ). A majority used store-bought products and many used multiple products: vinegar & water by 78%, baking soda 27%, iodine/betadine 17%, water 17%, Lysol/pine-sol 5%. Reasons for douching included: to feel good & fresh 78%, to rid of odor 66%, to rid of blood 54%, to avoid going to a doctor 12%. Timing of douching included: after period 85%, after sex 66%, before sex 27%, before going to a doctor 23%. 52% of douche users douched once a month and 41% more often than that. Age at first douche was 14±1.3 (range11-16).

**Conclusion:** This survey provides troublesome findings regarding the feminine hygiene practices of high-risk, mostly southern rural teenagers.

### Learning Objectives:

1. Understand feminine hygiene practices of high-risk adolescent women in southern US.
2. Understand the prevalence of and reasons for douching in high-risk women.
3. Understand health education needs for incarcerated adolescent women.

P2

## Adolescent Repeaters in Pennsylvania 1998-1999

*SJ Kowalewski<sup>1</sup>, G Schelzel<sup>2</sup>*

1. Pennsylvania Department of Health, Bureau of Communicable Diseases STD Program, 2. Pennsylvania Department of Health, Bureau of Communicable Diseases

**Background:** In calendar years 1998 and 1999, approximately 36,492 individuals living in Pennsylvania outside of Philadelphia were reported as having chlamydia or gonorrhea. Approximately 9.5% of these individuals were repeatedly infected from two to eight times during the period.

**Objective:** Provide an overview of Pennsylvania's STD Repeater Population.

**Methods:** In this poster session we will present how the data was gathered, what tools we used to tabulate and clean the data and what definitions we used to define an adolescent and a repeater.

**Results:** The study revealed that there were approximately 3,000 individuals repeatedly infected with gonorrhea or chlamydia, 50% were between the ages of 14-19. This adolescent population is of greater concern because they are less likely to adopt and engage in healthy sexual behaviors, represent the core population affected by both gonorrhea and chlamydia, and are at a much higher risk of becoming pregnant or acquiring HIV.

**Conclusions:** The STD Program believes that we have an opportunity to have a substantial impact on gonorrhea and chlamydia disease patterns across the state by actively targeting this adolescent population. Specifically, the core population is small enough for an active and aggressive prevention model. Through recent and proposed improvements in the STD surveillance system, we believe we will be able to quickly identify these individuals for intensified

outreach. Because the population is of great concern to many other agencies and community-based organizations, the STD Program may be able to effectively combine its efforts with existing programs.

### P3

## Prevalence of Substance Use, Risky Sexual Behaviors, and STD/HIV Knowledge among Adolescents Incarcerated in North Carolina Training Schools

*BC Castrucci<sup>1</sup>, SL Martin<sup>2</sup>*

1. The Joseph L. Mailman School of Public Health of Columbia University, 2. University of North Carolina at Chapel Hill School of Public Health

**Background:** Sexual risk taking behavior and substance use is higher in certain sub-populations of the general adolescent population, including adolescents who are incarcerated. This study seeks to expand the knowledge of incarcerated youth by investigating high-risk health behaviors of a sample of incarcerated adolescents in four of North Carolina's five training schools.

**Objectives:** This study examined students' risky sexual behaviors and knowledge of the effectiveness of various methods of contraception to prevent STDs/HIV was also measured.

**Methods:** We analyzed a cross-sectional sample of 210 incarcerated adolescents. Data was collected through 40-minute interviews administered by trained research assistants.

**Results:** Multivariate analysis, adjusting for demographic characteristics and other present risk factors, found that adolescents in training school who do not report regular substance abuse were more likely to partake in safer sexual behaviors. Those who reported using alcohol or drugs before sex either sometimes, once in a while, or never were over six times more likely to have three or fewer partners than those who used drugs or alcohol before sex either always or most of the time. Excepting condoms, many respondents falsely indicated that foam, birth control pills, diaphragms, and withdrawal were effective methods to prevent STD and human immunodeficiency virus (HIV) infection.

**Conclusion:** More health education is required to clarify that certain methods of pregnancy prevention are not effective for the prevention of either STDs or HIV. If substance abuse is not addressed along with other sexual risk behaviors, it will continue to undermine sexual health education skills and messages.

**Learning Objective:** Recognize the level of HIV/STD prevention knowledge in a sample of incarcerated adolescents and identify the link between substance abuse and sexual behavior.

### P4

## STD Information on the Internet: A Review of Web Sites Targeted to Adolescents

*A Bleakley, BC Castrucci*

The Joseph L. Mailman School of Public Health Of Columbia University, Division of Sociomedical Sciences, New York, New York

**Background and Rationale:** With the proliferation of the Internet, information on sexually transmitted diseases (STDs) is now widely available on a variety of web sites. However, this material is not required to be peer-reviewed or verified. Since adolescents and young adults are at the highest risk for STDs, many of these sites have targeted this population.

**Objectives:** The goals of this study are to assess the accessibility, quality, and appeal of websites including STD messages targeting adolescents.

**Methods:** Searches were performed using five popular search engines and a variety of keywords were used. The top 40 sites listed in the search results of each engine were reviewed to determine if adolescent sites presenting STD information could be identified through the use of these engines. To assess the appropriateness of knowledge on the Internet, a list of popular adolescent-friendly websites that address STDs was reviewed for accuracy. Additionally, focus groups with youth from community-based organizations in New York City were held to determine adolescent opinions on the appearance of content and websites.

**Results:** The organization of information on the Internet varies widely by search engine and the keywords utilized. While STD information was found to be somewhat consistent across the majority of sites,

the appeal to adolescents exists only on a few, select sites. In addition, focus groups reveal that adolescents are not widely using the Internet at this time to seek out health information.

**Conclusions:** The Internet is an exciting medium that has great potential for educating adolescents and young adults on the realities of STDs. Effective sites need to be interactive, and provide useful information regarding prevention and symptoms.

**Learning Objectives:** Identify methods to improve accessibility, appearance, and content of websites presenting STD information targeting adolescents. Recognize how to make a site more appealing to adolescents to encourage greater use.

## P5

### The Effects of Depression, Self-esteem, and Substance Use on Sexual Risk in Adolescents

*LA Shrier<sup>1</sup>, SK Harris<sup>1</sup>, M Sternberg<sup>2</sup>, WR Beardslee<sup>1</sup>*

1. Children's Hospital, Harvard Medical School, Boston, MA,  
2. Centers for Disease Control and Prevention, Atlanta, GA

**Background:** Adolescents are at highest risk for STDs. Research suggests that mental health problems are important in developing and maintaining sexual risk behaviors.

**Objective:** To assess relationships of depressive symptoms (DS) and self-esteem with condom nonuse and STD history in a nationally representative sample of US adolescents and to examine whether substance use confounds or modifies these associations.

**Methods:** Data were analyzed from National Longitudinal Study of Adolescent Health 1993-1994 baseline interviews of 7<sup>th</sup>-12<sup>th</sup> graders reporting sexual intercourse in the preceding year (N=6583). Associations of DS, self-esteem, and substance use with condom nonuse at last sex and with STD history were explored separately for boys and girls, using logistic regression in SUDAAN. Models were adjusted for age, race, and age at first sex.

**Results:** Compared to boys with a low level of DS, boys with high and very high levels had 1.4

(95%CI 1.1, 1.9) and 1.8 (95%CI 1.1, 2.8) times, respectively, the odds of condom nonuse. After controlling for alcohol and marijuana use, the association of DS and STD history was not significant. For girls, DS were not associated with condom nonuse. Compared to girls with a low level of DS, girls with moderate, high, and very high levels had 2.0 (95%CI 1.3, 3.3), 3.3 (95%CI 2.1, 5.1), and 2.4 (95%CI 1.3, 4.2) times, respectively, the odds of having had STD. DS-substance use interactions were not significant in any model. Self-esteem was not significant in the models with DS.

**Conclusions:** Adolescents with depressive symptoms are at risk for condom nonuse (boys) and for STD (girls). To optimize STD prevention for adolescents, further research needs to elucidate relationships among depression, substance use, and sexual risk.

**Learning Objective:** Understand the association between mental health problems and risk of STD in adolescents.

## P6

### Is Experience a Good Teacher?: Previous Diagnosis of STD, Current Sexual Behaviors, and Current STD Infection

*C Sionean<sup>1</sup>, RJ DiClemente<sup>1,2</sup>, GM Wingood<sup>1</sup>, R Crosby<sup>1</sup>, BK Cobb<sup>3</sup>, K Harrington<sup>4</sup>, S Davies<sup>4</sup>, EW Hook<sup>4</sup>, MK Oh<sup>4</sup>*

1. Rollins School of Public Health, Atlanta, GA, 2. Emory/Atlanta Center for AIDS Research, 3. Nell Hodgson Woodruff School of Nursing, Emory University, Atlanta, GA, 4. University of Alabama, Birmingham, AL

**Background:** African American female adolescents are at elevated risk for infection and re-infection with STDs. Adolescents' previous STD experience may serve as a motivating factor promoting their adoption of STD-preventive behaviors.

**Objectives:** To examine the associations between self-reported history of diagnosis with an STD and current sexual risk behaviors, STD prevention knowledge, and attitudes, and current STD infection.

**Methods:** Data were collected via structured interview, self-administered survey, and vaginal swab specimens from a sample of 522 sexually active African American

female adolescents. Lifetime history of STD and current sexual behaviors (past 30 days) were collected by interview; STD prevention knowledge and attitudes regarding condom use were assessed via self-administered survey. Current infection with *Nisseria gonorrhoeae*, *Chlamydia trachomatis*, and *Trichomonas vaginalis* was confirmed by laboratory assay.

**Results:** 26% of adolescents reported ever having been diagnosed with an STD. History of STD was associated with higher rates of current sexual risk behavior, including inconsistent condom use (OR=2.27), sexual intercourse while drinking (OR=2.09), and unprotected intercourse with multiple partners (OR=3.29). More important, self-reported history of STD was associated with increased risk for current biologically confirmed gonorrhea (OR = 2.48) and trichomoniasis (OR=2.05).

**Conclusions:** Among this sample of female adolescents, self-reported history of an STD is an indicator of current high-risk sexual activity and increased risk for current gonorrhea and trichomoniasis infection. Although adolescents may gain factual knowledge from the experience of an STD diagnosis, they are not applying that knowledge to their current sexual behaviors. These adolescents are at risk for re-infection with another STD, including HIV. Intensified HIV/STD prevention efforts should be directed toward adolescents with a history of STD.

#### Learning Objectives:

1. Identify current sexual risk behaviors associated with a lifetime history of STD among female adolescents.
2. Describe the risk of current STD infection among female adolescents with a lifetime history of STD.
3. Apply study findings to the development of HIV/STD prevention programs directed toward female adolescents.

## P7

### www.iwannaknow.org: Teens and the Internet

*M Stalker, J Butler, M Porter*

The American Social Health Association, Research Triangle Park, NC

**Background and Rationale:** Of the estimate 15.3 million cases STDs diagnosed each year in the US, one-fourth are among teens. To address the need to provide accurate, age-appropriate STD information to adolescents between the ages of 13 and 17, ASHA launched [www.iwannaknow.org](http://www.iwannaknow.org). The site addressed sexual decision-making; abstinence and safer sexual behaviors; communication with parents, providers and potential partners; and additional resources. Formative research among teens resulted in brief, bulleted, and bold information in a question-and-answer format with teen-friendly graphics.

**Objective:** To create an educational resource for teens about STD risk, prevention and treatment.

**Methods:** Focus group and advisory committee data were collected to assess and improve the site. To monitor the traffic to the site, tracking software was installed to capture the number of users sessions, the specific pages visited and the average length of time on the site.

**Results:** The number of user sessions for the month of April 2000 totaled 44,926, on average 1,497 per day. The paths visitors most often take on the site in descending order are from the front page to "What's New," STDs 101, 411 Basic Info Fast, followed by FAQs and Body Basics. The average length of time for the visit is 7:54 minutes.

**Conclusions:** Teens visit the pages on the site that provide rapid, easily accessible information as suggested by the pages visited and the average length of time on the site.

**Learning Objectives:** Describe the formative process of developing the teen Web site and identify topics and sections of the site that are more frequently visited.

## P8 Sexual Behavior and Attitudes toward STDs among Adolescents in Novosibirsk, Russia: A Preliminary Report

*AA Khryanin<sup>1</sup>, OV Reshetnikov<sup>2</sup>,  
OB Melnikova<sup>3</sup>, and DI Ivanov<sup>4</sup>*

1. Novosibirsk State Medical University, 2. Institute of Internal Medicine, 3. Novosibirsk State Pedagogical University, Novosibirsk, Russia, and 4. University of Alabama at Birmingham, Birmingham, AL, USA

**Background and Rationale:** In the recent years the incidence rates of STDs increased dramatically in Russia and former Soviet Union countries.

**Objective:** This study was undertaken to evaluate sexual behavior, condom use and attitudes toward STDs among community-based population of adolescents in Novosibirsk, the main city of Siberia.

**Methods:** About 1000 adolescents from various institutions (secondary schools, medical, pedagogical, and technical colleges) were recruited to complete a structured questionnaire. One hundred forty-four adolescent girls aged 17-20 has been examined by the date of submission.

**Results:** The sexual experience was reported by 60.4%. The age of the first intercourse was 16.8±0.1 years, the motives for it were: love (63.2%), sexual attraction (20.7%), violence (3.4%), alcohol or drug use (3.4%). In the last 6 months 78.2% of sexually active girls reported one partner, 12.5% - more than one, and 9.2% - none. Two thirds (66.7%) of those examined believed that condoms can prevent STDs and HIV. However, the condom use was as follows: always (27.6%), mostly (20.7%), sometimes (27.6%), rarely (10.3%), and never (13.8%). Additionally, 8.7% often use condoms during oral sex and 13.3% - during anal sex. There were several main reasons for not using condoms: "to be closer with partner" (32.2%), "unwillingness of the partner" (25.3%), "condom reduces my sensations" (17.2%). Knowledge and attitude toward STD was evaluated with STD Attitude Scale (Carroll J. L. & Wolpe P. R., 1996). High total scores were interpreted as reflecting an attitude that predisposes youth to engage in high-risk STD behaviors. A lower total score predisposes youth toward low-risk STD behavior. The mean score of 35.7±0.5 with range of 24-57 was significantly lower than 66-96.

**Conclusions:** The knowledge of STDs among Russian adolescents appeared to be satisfactory. However, actual condom use in adolescence is not an usual practice, and that was shown in the other communities.

## P9 Sexually Transmitted Disease (STD) Screening in San Francisco High Schools

*L Fischer<sup>1</sup>, A Branzuela<sup>1</sup>, C Kent<sup>1</sup>, T Bascom<sup>2</sup>,  
J Klausner<sup>1</sup>*

1. San Francisco Department of Public Health (SFPDH), San Francisco, CA, 2. San Francisco Unified School District (SFUSD), San Francisco, CA

**Background:** High school-based studies demonstrated high rates of chlamydia infection among students. However, there are barriers to overcome before conducting STD screening in high schools.

**Objectives:** To implement STD screening for youth attending San Francisco high schools. Provide STD education and awareness of risky behavior for students, teachers, parents and site administrators to successfully implement STD screening.

**Methods:** School Health officials, health education and condom distribution staff were notified about high rates of chlamydia among San Francisco youth and offered presentations and on-campus STD testing. Barriers such as parental consent, allocation of on-campus space for testing and lack of school site administrator interest and support were overcome with parental notification, negotiation and education. Flyers were posted throughout schools willing to participate 1 week prior to testing and students were recruited from special classroom presentations conducted by STD staff. Urine specimens from consenting youth were tested for chlamydia with ProbeTec (Becton Dickinson).

**Results:** Between January and June 2000, 7 of 19 schools participated in an STD screening program and 566 students  $\leq$  20 years of age were tested for chlamydia, 259 females and 306 males. There were no chlamydia infections in students younger than 16 years. Among students 16+ years chlamydia prevalence was 2.0% (8/393) and varied little by gender (2.3% female and 1.8% male).

**Conclusions:** Barriers to STD education and testing among high school students can be overcome. School board and in class presentations, flyers and pamphlets advertising services for students can increase interest and approval for STD testing among students. Specific targeting of older high school students could result in lowering prevalence of STD's among this population.

**Learning Objectives:** Understand prevalence of CT and GC among SF in school youth. Understand how to overcome specific barriers to offering STD education and testing on high school campuses.

## P10

### Monitoring STD Prevalence and Reproductive Health Care among Adolescent Women in Special Settings

*SA Wang<sup>1</sup>, MK Oh<sup>2</sup>, CA Rietmeijer<sup>3</sup>, DA Beete<sup>4</sup>, JR Braxton<sup>1</sup>, WC Levine<sup>1</sup>, KJ Mertz<sup>1</sup>, and the Monitoring Reproductive Health in Adolescent Women Work Group*

1. Centers for Disease Control & Prevention, Atlanta, GA, 2. University of Alabama, Birmingham, AL, 3. Denver Public Health, Denver, CO, 4. Chicago Dept of Public Health, Chicago, IL

**Background:** Adolescent women have the highest *Neisseria gonorrhoeae* (GC) and *Chlamydia trachomatis* (CT) infection rates of any age group in the United States, yet systematic monitoring of their reproductive health is limited.

**Objectives:** To monitor STD prevalence and other reproductive health measures among adolescent women in special settings.

**Methods:** Since 1999, three health departments (Alabama, Chicago, and Colorado) have been collaborating with CDC to systematically collect standard demographic, clinical, and health service data on women < 20 years old who receive reproductive health services in juvenile detention centers (JDCs), substance abuse treatment programs (SATPs), and school-based clinics (SBCs).

**Results:** Data were reported for 731 adolescent women from JDCs, 88 from SATPs, and 284 from SBCs. Median age was 16 years (range, 12-19); median school grade completed was 9<sup>th</sup> grade (range, 3-12). Ninety-two percent were sexually experienced. Only 27% reported "current" birth control use. Twenty percent of the adolescents reported having been pregnant. CT test positivity was 18.8% at JDCs, 12.4% at SATPs, and 15.2% at SBCs, while GC test positivity was 11.2%, 3.4%, and 11.4% respectively, and pregnancy test positivity was 5.9%, 10.2%, and 4.2%. Among all facilities, 3 of 426 syphilis tests and 1 of 254 HIV tests were positive. STD counseling was received

by 77% of adolescents, HIV counseling by 62%, family planning counseling by 53%, and substance abuse counseling by 23%. Contraceptives were dispensed or prescribed to 10% of adolescents.

**Conclusions:** Adolescent women in these JDCs, SATPs, and SBCs had high STD and pregnancy rates. Systematic monitoring of STD prevalence and reproductive health among this high-risk population is feasible and may assist in identifying gaps in services so that appropriate interventions may be implemented.

**Learning Objectives:**

1. To describe a method for systematically collecting standard reproductive health data in special settings.
2. To describe pregnancy and STD rates among adolescent women in special settings.
3. To describe sexual behavior history and reproductive health services received by the adolescent women.

## P11

### Congenital Syphilis in North Carolina, 1992-1999

*KK Fox<sup>1,2</sup>, A Proctor<sup>3</sup>*

1. NC Department of Health and Human Services, Raleigh, NC, 2. CDC, Atlanta, GA, 3. University of North Carolina, Chapel Hill, NC

**Background:** Congenital syphilis continues to occur despite an 81% decline in primary and secondary syphilis among adults in NC from 1992 to 1999.

**Objective:** To describe the epidemiology of congenital syphilis in NC 1992-1999.

**Methods:** Congenital syphilis cases reported to the NC Department of Health and Human Services were examined. Due to the case definition change implemented in 1992, analysis was limited to 1992-1999.

**Results:** The annual number of cases peaked at 75 in 1992, decreasing by 74.7% to 19 in 1999. Seven of 100 counties—4 urban and 3 rural—reported 40% of cases. Although African-Americans comprised a majority (88.0%) of all cases, the proportion decreased to 63.2% in 1999 while the proportion of cases that were white increased to 31.6%. Mothers received no and very late (<30 days before delivery) prenatal care in 37.5% and 13.7% of cases, respectively, with no significant change over time. Among mothers receiving

prenatal care, the median number of visits increased from 5 in 1992 to 12 in 1999. The proportion of cases that were stillbirths decreased from 8.0% in 1992 to 5.2% in 1999. Of live born cases, 35.2% were of low birth weight (<2500 g) and 40.4% were born before 37 weeks gestation. All cases were presumptive. Seven percent had classic clinical signs, 61.3% of cases were asymptomatic and born to mothers with no syphilis treatment during pregnancy, and 23.3% were asymptomatic and born to mothers treated <30 days before delivery.

**Conclusions:** Congenital syphilis persists in urban and rural NC. Lack of or very late prenatal care continue to be significant problems, and the majority of cases occur because of late or no treatment.

**Learning Objective:** Describe trends in congenital syphilis in North Carolina.

## P12

### Adolescent's Perceptions of and Experiences at Los Angeles County STD Clinics

*D Stathopoulos, D Brown, H Rotblatt*

Los Angeles County Sexually Transmitted Disease Program

**Background and Rationale:** Teens and young adults ages 10 to 24 in Los Angeles County account for two-thirds of new chlamydia and half of new gonorrhea cases reported in Los Angeles County, yet represent less than 5% of individuals accessing services at County STD clinics.

**Objective:** To identify perceived barriers to use of County STD clinics by youth ages 11-24.

**Methods:** Self-administered questionnaires were completed by a convenience sample of youth at 7 public high schools and 7 youth-serving agencies in areas surrounding four LA County STD clinics, and to adolescents accessing services at these clinics.

**Results:** Over a two-month period, 281 adolescents from continuation high schools and organizations serving high-risk youth completed questionnaires. Of these, 36% were African-American and 44% were Hispanic. Thirty-seven percent had heard of at least one County STD clinic, and 7% had accessed these services. Youth who had never used County services

ranked confidentiality (17%), long waiting time (16%), and factors associated with staff such as not being respected (16%), as the most significant barriers. In comparison, 55% of the 38 youth surveyed in County STD clinics stated the best thing about their clinic experience was the staff and/or services, followed short waiting time (16%).

**Conclusions:** Negative perceptions of staff and services at LA County STD clinics may hinder many youth from accessing services, although these perceptions may be unfounded once services are used. Youth-focused programs to increase awareness and promote utilization of these services should be implemented.

**Learning Objective:** To describe youth perception of County STD facilities and methods to encourage utilization of these services.

## P13

### Recurrent Infections of *Chlamydia trachomatis* Among Teenage Women: Lack of Association with Partner Age and Condom Use

*P Kissinger<sup>1</sup>, JL Clayton<sup>2</sup>, ME O'Brien<sup>1</sup>, C Kent<sup>3</sup>, W Whittington<sup>4</sup>, MK Oh<sup>5</sup>, D Fortenberry<sup>6</sup>, SE Hillis<sup>7</sup>, B Litchfield<sup>7</sup>, GA Bolan<sup>3</sup>, ME St. Louis<sup>7</sup>, HH Handsfield<sup>4</sup>, TA Farley<sup>1</sup>, S Berman<sup>7</sup>*

1. Tulane University – SPHTM, 2. Louisiana State University, 3. Department of Public Health, San Francisco, CA, 4. Department of Medicine, University of Washington, 5. University of Alabama at Birmingham, 6. Indiana University, 7. Centers for Disease Control and Prevention

**Background:** Chlamydia infected adolescent women with older partners may not use condoms consistently and may be at greater risk for recurrent infections.

**Objective:** To determine the association between partner age, inconsistent condom usage and recurrent chlamydial infections among teenaged women.

**Methods:** Women aged 14-18 with uncomplicated *C. trachomatis* infection attending reproductive health, sexually transmitted disease, and adolescent clinics in five U.S cities (6/95-5/97), reporting completion of medication (75% doxycycline) and who resumed sex were followed at one and four months for interim history and retesting. Factors associated with recurrence were analyzed using generalized estimating equations in SAS.

**Results:** Of the 338 women in the cohort, 227 (67%) with at least one follow-up visit were included in the analyses. Of these, 73.1% were black, 59.5% were  $\geq 17$  years old, 45% had more than one partner during follow-up, 16.1% had partners 3-5 and 18.4% had partners  $> 5$  years older. The mean difference between the girls and their partners was 2.5 (range -2.6 to 14.3 years). 100% Condom usage (52.0%) was similar among women's older (i.e.  $\geq 3$  years older) vs. similar-aged partners (50.0% vs. 53.3%,  $P < 0.60$ ). Recurrence rate (13.7%) was similar for women with any older vs. all similar-aged partners (10.4% vs. 15.8%,  $P < 0.27$ ). Of 346 partners reported (ages ranged 15-33 years), 70.2% were continuing and 29.8% were new partners. Partner and woman's age, type of medication, type (existing or new) or number of partners was not associated with condom use.

**Conclusions:** Older partners did not increase risk for lack of condom use and recurrent infection. Screening efforts and improving partner treatment is important among all aged sex partners of young women.

## P14

### Improving Adolescent Access to Reproductive Health Care Through a Drop-in Clinic with Social Marketing Promotion

*P Kissinger*<sup>1</sup>, *N Fuchs*<sup>2</sup>, *N Schmidt*<sup>2</sup>, *E Bonin*<sup>3</sup>, *B Brown*<sup>2</sup>

1. Tulane University – SPHTM, 2. Children's Hospital – Family Advocacy Care and Education Services (FACES), 3. Health Care for the Homeless

**Background:** Adolescents have many barriers to reproductive health care (RHC) including lack of insurance, lack of knowledge of the system, and lack of planning.

**Objective:** The purpose of this ongoing program is to improve access to RHC (including HIV/STD screening) for youths 13-24 in New Orleans, who otherwise may not have sought care, by offering drop-in, free, health care during non-traditional hours at a local clinic. This clinic is promoted through social marketing including outreach (began March) and media (began July).

**Methods:** To evaluate the impact of the program in the community, six high-risk areas were chosen (three to receive the social marketing promotion and three to serve as controls). Pre, interim and post street intercept

surveys will be conducted to determine if more youths access RHC because of the program. Demographic and clinical information about youths who attended the clinic is also collected.

**Results:** From March through May, 2000, 163 adolescents received services at the clinic. Of these 93% were women, mean age was 19.4 years (s.d. 2.5), 78% had no insurance, and 41% had never received RHC. Prevalence of STDs were: chlamydia (4.3%), trichomonas (3.1%), herpes (1.8%), gonorrhea ( $< 1\%$ ) and PID (2%). Of the 67 who had never received RHC, 43% accepted STD screening and 35% accepted HIV testing. Baseline street surveys revealed that of 359 respondents, 61% said they had been sexually active, 54% said they had never been to a RHC clinic in the past. Of those who had never been, reasons included: never wanted to 36%, never needed to 16%, cost 10%, and privacy 8%.

**Conclusions:** Drop-in services may improve RHC for youths who would otherwise not seek services. The impact of social marketing will be discussed.

## P15

### Urine-Based STD Screening in Chicago High Schools

*D Beete*<sup>1</sup>, *M Jones*<sup>1</sup>, *D Broussard*<sup>1,2</sup>

1. Chicago Department of Public Health and 2. Centers for Disease Control and Prevention, Atlanta, GA

**Background:** Urine-based screening for gonorrhea and chlamydia was introduced into the classroom at three high schools. The highest rates of gonorrhea and chlamydia are seen in teenagers, making collaborations between STD control programs and high schools of particular importance.

**Objectives:** The objectives of this project are to identify and treat gonorrhea and chlamydia through the use of non-invasive, urine-based testing; to create a model for STD screening in cooperation with school-based health centers; and to evaluate screening of adolescents and its impact on public health.

**Methods:** A 20-minute educational session in the classroom includes a 10-minute oral presentation and a videotape around STD signs and symptoms, the clinic visit and treatment. Screening is conducted afterwards on a voluntary basis.

**Results:** In the 1998-99 school year, 464 students attended 14 educational sessions. 355 specimens were collected. The overall positivity rate for chlamydia was 9.3% and 6.5% for gonorrhea. In females, the chlamydia positivity rate was 12.6% and 8.0% for gonorrhea. In males, the chlamydia positivity rate was 5.1% and 4.5% for gonorrhea. 1999-2000 school year data will be available at the time of the conference.

**Conclusions:** Conclusions will be made around the development of a relationship between CDOH and Chicago Public Schools, as well as the project's effectiveness, impact on overall gonorrhea and chlamydia morbidity among adolescents, and feasibility for implementation in other school-based settings.

**Learning Objectives:** Participants will be able to describe the effectiveness of urine-based screening in the classroom setting and understand how such a project can be implemented in the classroom.

## P16

### Health Talk for Teens: An Intervention to Promote Chlamydia Screening of Adolescents in the Managed Care Setting

*R Neiman<sup>1</sup>, R. Watson<sup>2</sup>, S. Black<sup>2</sup>, H Bauer<sup>1</sup>, J Chow<sup>1</sup>, G Bolan<sup>1</sup>*

1. California Department of Health Services, Sexually Transmitted Disease, Prevention and Control Branch, 2. Northern California Kaiser Permanente Department of Quality and Utilization

**Background and Rationale:** A randomized controlled trial demonstrated that an outreach strategy for identifying and bringing these women in for screening and treatment reduced incidence of PID. Northern California Kaiser Permanente (NCKP), representing 25% of reported chlamydia in Northern California, and CA DHS STD Control Branch developed an outreach intervention designed to promote health-seeking behavior of adolescents.

**Objective(s):** To increase chlamydia screening coverage of health plan enrollees, ages 15 through 19; to ascertain the efficacy of a member newsletter outreach to promote chlamydia screening, particularly for individuals who are not actively seeking health care.

**Methods:** The study was designed to build upon existing standard of care by enhancing usual care with an

outreach strategy to promote health-seeking behavior among adolescents enrolled in NCKP. The primary intervention was a comprehensive adolescent newsletter, developed with input from key stakeholders such as adolescent medicine specialists, a focus group of adolescents, a focus group of parents and an 'in-house' advisory committee.

**Conclusions:** Study data is currently under analysis. Despite the lack of quantitative results, the project was believed to be successful, in that it gained support for chlamydia screening and generated requests from local teachers for the use of the outreach tool in their adolescent health curriculum. NCKP staff believe that the following elements contributed to the project's success: 1) the availability of centralized membership database; 2) centralized electronic lab services; 3) the existence of the specialty service of adolescent medicine and; 4) the high stability of the adolescent patient population (<5% turnover per year).

**Learning Objective:** Describe findings and lessons learned from an intervention to promote chlamydia screening of adolescents in a managed care setting.

## P17

### The Impact of Teen Outreach on STD-related Knowledge, Attitudes, Behaviors and Beliefs among Teens in Springfield, MA

*T Craig, C Lewis, C Gaynor, D Buchanan, F Hubbard, A Ali, C Miller, V Berry, and the SAHP*

Springfield Adolescent Health Project, Springfield, MA

**Background:** Elevated syphilis rates, particularly among minority groups, in the city of Springfield, Massachusetts led to formation of a coalition of local organizations, local and state health departments, area medical care providers, and a school of public health to deal with the problem. An initial KABB survey, conducted in 1994, showed that teens were not aware of STDs, risk elevating and risk reducing behaviors, and what prevention services were available to them. Teen peer outreach was created to deal with these findings.

**Objective:** The purpose of this project was to measure the impact of the peer-led STD prevention outreach on fellow teens.

**Methods:** A team of teen aged community health workers conducted outreach using methods and materials of their own design to educate other teens and encourage them to change health-seeking behaviors. A follow-up survey of teens in Springfield conducted in 2000 will compare KABB findings with the baseline survey in regard to knowledge of preventive care services. Teen visits to the local state-supported STD clinic were also tracked each year.

**Results:** A follow-up survey is currently in progress and will compare findings against the 1994 baseline.

**Conclusion:** This presentation will discuss and highlight the impact of this teen-led effort on the risk of STDs in this city.

## P18

### Health-seeking Behaviors Affected by Teen Outreach

*N Burns, J Scavron, C Lewis, C Gaynor, T Craig, T Glynn, F Hubbard, and the SAHP*

Baystate Medical Center, Springfield, MA

**Objective:** Elevated syphilis rates, particularly among minority groups, in the city of Springfield, Massachusetts led to formation of a coalition of local organizations, local and state health departments, area medical care providers, and a university school of public health to deal with the problem. An initial KABB survey, conducted in 1994, determined (among other findings) that teens were not aware of STDs, risk elevating and risk reducing behaviors, and what prevention services were available to them. Teen peer outreach was created to deal with these findings.

**Methods:** A team of teen aged community health workers conducted outreach using methods and materials of their own design to educate other teens and encourage them to change health-seeking behaviors. The teens also worked with clinicians to make them more comfortable with teens as patients. Teen visits to the local state-supported STD clinic were tracked each year to measure changes in health-seeking behaviors. A survey to measure clinicians' attitudes was also undertaken.

**Results:** Visits by teens went from 60 in 1994 (prior to outreach activities) to more than 600 in 1996. The STD clinic in Springfield consistently attracts the

greatest percentage of its visits from teens (20%) compared to any other STD clinic in the state.

**Discussion:** The outreach efforts have resulted in a positive effect on health-seeking behaviors of teens in the city. Information on the impact of teen outreach on changes in clinicians' practice patterns will also be presented as an explanation for this change.

## P19

### Reaching Homeless Youth For *Chlamydia trachomatis* Screening in Denver, Colorado

*J Cohen<sup>1</sup>, J Van Leeuwen<sup>2</sup>, T LeRoux, S Bull<sup>1</sup>, C Rietmeijer<sup>1</sup>*

1. Denver Public Health, Denver, CO, 2. Urban Peak, Denver, CO

**Background and Rationale:** The development of urine-based testing for *Chlamydia trachomatis* (CT) provides a unique opportunity for screening outside of traditional clinical settings. We investigated the feasibility of street-based CT screening in the context of an outreach program among street/homeless adolescents in Denver.

**Objectives:** To describe the acceptability of urine-based CT screening in street settings and how this service may serve to facilitate enrollment of homeless/street youth into additional services.

**Methods:** Denver Public Health collaborated with outreach staff from Urban Peak (a community-based organization serving homeless youth in Denver) to offer urine-based CT testing to males and females in street settings. The tests were conducted on the street in areas where street/homeless youth congregate.

**Results:** CT testing was offered and accepted by 103 predominantly adolescent persons (52 men and 51 women, age range 13-25). Overall 16 (15.5%) tested CT positive. Twelve of the sixteen were located and treated in the field. Ten individuals tested for CT subsequently enrolled in an intensive street outreach case management program at Urban Peak.

**Conclusions:** Conducting outreach to provide non-invasive CT urine testing appears to be a feasible strategy for serving homeless/street youth. Overall CT rates were high and suggest the need for ongoing screening in this manner. Outreach CT screening may provide the entry into more intensive case management in this vulnerable population.

**Learning Objective:** To understand the role of CT screening in the context of services provided to homeless youth in outreach settings.

## P20

### Cost-Effectiveness of Presumptive Treatment Regimens for Neonates Perinatally Exposed to Syphilis

*S Terán<sup>1</sup>, C Walsh<sup>1</sup>, L Finelli<sup>1</sup>, H Chesson<sup>1</sup>, KL Irwin<sup>1</sup>, G Wendel<sup>2</sup>, PJ Sánchez<sup>2</sup>*

1. Centers for Disease Control and Prevention, Atlanta, GA,  
2. University of Texas Southwestern Medical Center

**Background:** It is difficult to determine if neonates are infected with syphilis when they are perinatally exposed but lack physical signs of congenital syphilis. Treatment may be delayed or omitted because sensitive diagnostic laboratory tests do not exist for these neonates. Lack of treatment may allow permanent sequelae to develop. CDC STD Treatment Guidelines therefore recommend 10 days of penicillin (intravenous or intramuscular) or single-dose benzathine penicillin for these neonates.

**Objectives:** To determine the most cost-effective treatment regimen for neonates perinatally exposed to syphilis.

**Methods:** We analyzed medical record data collected from 1989-1998 at Parkland Memorial Hospital, Dallas, from perinatally exposed neonates and their mothers. We evaluated infant weight, maternal and neonatal treatment, cure rates, and diagnosis and treatment costs. Data were analyzed with decision analysis software. For each treatment, we examined the effects on cost-effectiveness of varying treatment efficacy and the proportion of infants potentially treated with 10-day therapy through home nursing instead of hospitalization.

**Results:** The majority (89%) of 255 neonates perinatally exposed to syphilis with normal physical examinations and laboratory tests received single-dose treatment. All infants were cured. Single-dose therapy was most cost-effective (\$369 per infant cured); the least cost-effective was 10-day intravenous treatment (\$2,681). Increasing the proportion of infants treated with home nursing decreased costs of 10-day intramuscular and intravenous treatment (\$1,334 - \$1,845), but single-dose treatment remained most cost-effective.

**Conclusions:** In this hospital, single-dose benzathine penicillin was as effective as other recommended treatments and was most cost-effective, even when costs of 10-day therapy were minimized through home nursing. An optimal cost-effectiveness evaluation of these treatments would include long-term complications of perinatal exposure, but these data were unavailable.

**Learning Objectives:** Describe the most cost-effective treatment regimen for infants perinatally exposed to syphilis without physical signs of congenital syphilis.

## P21

### Complex Relationships among Douching, BV, and STDs

*EH Koumans<sup>1</sup>, C Black<sup>1</sup>, SA Carter<sup>1</sup>, MK Sawyer<sup>2</sup>, J Papp<sup>1</sup>, E Unger<sup>1</sup>, C Akers<sup>1</sup>, LE Markowitz<sup>1</sup>*

1. Centers for Disease Control and Prevention, 2. Emory University, Atlanta, GA

**Background:** Bacterial vaginosis (BV) has been associated with douching and STDs, although causal relationships have not been established.

**Objectives:** We investigated the prevalence of BV and the associations between BV, douching, chlamydial, and gonococcal infections in a cross sectional study of adolescents in Atlanta.

**Methods:** Demographics, sexual risk factors, condom and douching use, and infection status were determined at an initial visit. A *Chlamydia trachomatis* (CT) or *Neisseria gonorrhoeae* (NG) infection was defined as two or more nucleic acid amplification tests positive in urine, cervical, or vaginal samples or growth in culture; BV was detected using clinical (Amsel) criteria.

**Results:** Among 203 adolescent women enrolled to date, the median age was 16 years (range 11-19), 97% were black, 96% were in school, and 88% had one or more sex partners in the previous 90 days. Seventy-seven (38%) had douched in the last 90 days, 45 (23%) had CT, and 18 (9%) had NG. Of the 164 with information on BV, 51 (31%) had BV; 25 (42%) young women who had douched in the last 90 days had BV, compared with 26 (25%) who had not douched (p=0.03). Douching in the last 90 days was associated with CT and NG infection. Among those with BV, 16 (31%) had CT compared with 23 (20%) without BV

( $p=0.10$ ). Among those with BV, 9 (18%) had NG compared with 7 (6%) without BV ( $p=0.02$ ).

**Conclusions:** In this small cross-sectional study among high-risk adolescents, BV was associated with recent douching. In addition, BV prevalence was higher in young women with CT and NG infections. Further prospective studies are needed to define the relationships between vaginal infections and douching.

## P22

### *C. trachomatis* and Unplanned Pregnancy in a Healthy Female Population

AG Thomas<sup>1,2,3</sup>, S K Brodine<sup>1</sup>, R Shaffer<sup>3</sup>, M Shafer<sup>4</sup>, CB Boyer<sup>4</sup>, S Putnam<sup>5</sup>, B Bales<sup>3</sup>, J Schachter<sup>4</sup>

1. Graduate School of Public Health, San Diego State University, San Diego, CA, 2. University of California, San Diego, CA, 3. Operational Readiness Program, Naval Health Research Center, San Diego, CA, 4. University of California, San Francisco, CA, 5. Navy Environmental Preventive Medicine Unit No. 5, San Diego, CA

**Background and Rationale:** Genital *C. trachomatis* infection, is the most common bacterial STD in the United States with 607,602 cases reported in 1998. Unplanned pregnancy (UP) is reported in approximately 56% of pregnancies in the U.S. with approximately half of these terminating in abortion. Although UP is recognized as another important adverse outcome of sexual behavior, there have been limited studies that have examined and compared both STDs and UP in the same study group.

**Objectives:** To apply urine based ligase chain reaction (LCx) for *C. trachomatis* and *N. gonorrhoeae*, and urine based pregnancy testing for Navy enlisted women and to compare the prevalence and epidemiologic correlates of these adverse reproductive outcomes.

**Methods:** Participants were surveyed and urine was collected for pregnancy testing using standard laboratory methods and detection of *Chlamydia trachomatis* and *Neisseria gonorrhoeae* infection by ligase chain reaction. Self-administered surveys facilitated collection of demographics, sexual behavior including contraceptive use, sexual partners, sexually transmitted disease history, and pregnancy history.

**Results:** Among 314 participants, the prevalence of chlamydial infection was 4.2% and of pregnancy was 9.2%, with 48% of the pregnancies unplanned. *C. trachomatis* infection was associated with more lifetime and recent sexual partners and misuse of alcohol. Among the pregnant women, 14% were infected with *C. trachomatis*. Unplanned pregnancy was associated with single marital status, condom use, and higher number of recent sexual partners.

**Conclusions:** High rates of chlamydial infection and unplanned pregnancy in a population of young women with ready access to health care underscores the challenge of enhancing reproductive health via compliance with effective contraceptive and STD prevention methods.

#### Learning Objectives:

1. To assess the feasibility of urine based STD screening in a healthy population of female enlisted Navy women.
2. To determine the prevalence and epidemiologic correlates of pregnancy, both planned and unplanned and *C. trachomatis* and *N. gonorrhoeae* infection.

## P23

### An Analysis of Congenital Syphilis in Florida 1996-1999: Missed Opportunities to Prevent Surveillance Case Definitions of Congenital Syphilis

JL Dettis, K Schmitt, P Moncrief

Florida Department of Health, Bureau of STD Prevention and Control

**Background:** Syphilis has continued to decrease in Florida but surveillance case reports of congenital syphilis persist. In fall 1999, the Florida Bureau of STD received reports of two new surveillance cases of congenital syphilis from the county health department system. Both new cases were identified as totally preventable and occurred due to multiple missed opportunities.

**Objectives:** To examine differences between patterns of practices of private and public health providers as they related to reports of surveillance congenital syphilis cases. To inform county health department directors.

**Methods:** 294 surveillance case reports of congenital syphilis were analyzed to determine level of access to prenatal care, compliance with state guidelines, syphilis testing during pregnancy, treatment drug use, and pregnancy outcomes. Public care cases were compared with private care. Recommendations were developed to reduce the likelihood of missed opportunities occurring and presented County Health Department Directors and Healthy Start Coalition Directors.

**Results:** Prenatal care was accessed by 80% with 38% entering prenatal care in the first trimester and 28% receiving from 10-21 visits. 6% of prenatal care clients had no syphilis test. 28% of those with prenatal care had no syphilis test after the first trimester; 22% of infants were low birth weight. Non-preventable cases were attributed to cocaine use and no prenatal care; 14% used drugs during pregnancy.

**Conclusions:** Many of the surveillance case reports of congenital syphilis in Florida result from a failure to followed established guidelines. There were little differences noted between the cases reported from the private and public health care providers. The findings suggested a need to better inform all clinical providers regarding their responsibilities for identification and appropriate management of syphilis during pregnancy.

**Learning Objectives:** The learner will be able to demonstrate an awareness of missed opportunities in the prevention of congenital syphilis.

## P24

### Chlamydial Infection In Pregnancy: An Association With Low Birth Weight

*K Schmitt<sup>1</sup>, SH Simpson<sup>2</sup>, CS Mahan<sup>3</sup>,  
DR Thompson<sup>1</sup>, DM Treloar<sup>2</sup>, K Freeman<sup>1</sup>*

1. Florida Department of Health, 2. University of Florida, College of Nursing, 3. University of South Florida, College of Public Health

**Background:** A pilot study indicated an association between chlamydial infection and low birth weight. Since this pilot analysis examined only two linked datasets more extensive analysis was designed to control for additional known risk factors.

**Objectives:** To determine whether infection with *Chlamydia trachomatis* during pregnancy was associated with low birth weight.

**Methods:** A retrospective population based study was conducted on a sample of 14,002 records. The records were extracted from a large relational database constructed from birth and fetal death records, prenatal risk screening records, sexually transmitted case reports and laboratory test reports. Three dependent variables and 21 independent indicator variables were created to control for potential interaction between known risk factors and chlamydial infection. Descriptive, bi-variate and logistic regression analyses were conducted.

**Results:** Statistically significant associations were observed among women with inadequate weight gain, chlamydia infection and low birth weight at 95% confidence interval (OR 1.98,  $p < 0.02$ ). A stronger association was observed with pre-term low birth weight (OR 2.34,  $p < 0.01$ ). Other risk factors identified as strongly associated with low birth weight in this population were mother reporting a history of prior poor pregnancy outcome, alcohol use, smoking, mother having been low birth weight herself. Among women who had adequate weight gain, gonorrhea infection increased the likelihood of having a pre-term low birth weight infant by more than five times (OR 5.11,  $p < 0.003$ ). Women of black race and smoking were also significantly associated with low birth weight in this group.

**Conclusions:** This study indicates that chlamydia infection in pregnancy is strongly associated with low birth weight and that along with other sexually transmitted infections is a significant public health problem that warrants further investigation.

**Learning Objectives:**

1. Describe numerous implications for prenatal care.
2. Increase awareness of STD as risk factors associated with low birth weight.

P25

## Sexual Health and Health Consequences of Sex: Linking Morbidity, Risk Behaviors, and Reproductive Health Outcomes in New York City Communities

*J Li, R Brockbill, S Blank, I Weisfuss*

New York City Department of Health

**Background:** Reported STD rates are used to identify areas with high risk for resource allocation. However, under-reporting of STD may occur if patients are untreated for asymptomatic STDs or due to limited access to health services. Untreated STDs may cause severe health problems such as Pelvic Inflammatory Disease or adverse reproductive outcomes. Integrating data from various sources may provide a way to assess STDs and health consequences of sex in communities.

**Objective:** Examine the association between STD with co-morbidity and reproductive outcomes at community level. Evaluate the usefulness of community-level data for health planning and policy development regarding sexual health.

**Methods:** United Hospital Fund-designated neighborhoods (UHF) are used to define communities. Data are from NYC STD Surveillance, New York Statewide Planning and Research Cooperation System (SPARCS) and Vital Statistics. Multiple-group comparisons and multivariate analysis are applied.

**Results:** The reported STD rates among females were 602 per 100,000 for chlamydia, 174 for gonorrhea, and 57 for syphilis in 1998. Among communities with the highest female chlamydia rates, High Bridge-Morrisania reached 1,308, Fordham-Bronx Park 1,193, and Hunts Point-Mott Haven 1,055. Communities with low chlamydia rates include South Beach-Tottenville (53), Bayside-Little Neck (68), and Willowbrook (80). The distribution of STD in NYC neighborhoods corresponds closely to the distribution of community demographic/socioeconomic characteristics. Various STD diagnoses coexist in the same neighborhoods. The associations between STD and adverse health-consequences of sex are complicated. However, communities with high STD rates generally tend to have high rates of co-morbidity and adverse reproductive outcomes.

**Conclusions:** Health planning and policy development regarding sexual health should be community-based, focusing on specific community needs. Community-level data provide the foundation for the development of community-specific health policies.

**Learning Objectives:** How community level data can be utilized for community health planning and policy development with regard to STD and other health consequences of sex, such as women's reproductive health.

P26

## An Interactive, Multimedia, Stage-Matched, Intervention for STD Clinic Patients: A Feasibility Study

*DM Grimley, JM Bellis, LR Alexander*

University of Alabama at Birmingham, Birmingham, AL

**Background and Rationale:** The incidence of STDs represents a significant public health challenge, particularly in Alabama. The majority of individuals in the Birmingham area who have been exposed to an STD seek evaluation and treatment at the county health department STD clinic.

**Objective:** Consistent with the Science Panel on Interactive Communication and Health, a "Level I" study was conducted that involved a feasibility assessment of a clinic-based, individually-tailored, multimedia intervention that targets: (1) calling back for test results, (2) returning to the clinic for timely treatment and, (3) consistent use of condoms. The goal was to determine the receptivity of the clinic population to the intervention in terms of its "engagement and appeal" and the degree that individuals will "use and value" the intervention.

**Methods:** A sample of 41 patients attending an urban STD clinic interacted with the intervention and then participated in face-to-face interviews in order to elicit their reactions and feedback.

**Results:** The intervention was well received by this sample (85% African American; 54% male; mean age = 26 years ( $SD = 7.23$ )). Nearly all (98%) rated the appeal of the computer program as "pretty good" (32%) to "great" (66%). Sixty-eight percent (68%) of the sample reported that they thought the intervention would influence their behavior in the future. Positive

responses to the program were consistent across gender, age, education, and stages of change for condom use.

**Conclusions:** This sample of STD clinic patients was receptive to the multimedia intervention, which indicates that progression to a randomized clinical trial to evaluate intervention efficacy is supported.

**Learning Objective:** Determine the receptivity of a multimedia intervention among an STD clinic population.

## P27

### Client Satisfaction and Immediate Outcomes of Behavioral Counseling in an STD Clinic

*J Greenberg<sup>1</sup>, P Coury-Doniger<sup>2</sup>, J Braxton<sup>1</sup>, M Scahill<sup>2</sup>, J Leichliter<sup>1</sup>, K Knox<sup>3</sup>*

1. Centers for Disease Control and Prevention, Atlanta, Georgia, 2. University of Rochester: Departments of Medicine, Infectious Diseases Unit and 3. Community and Preventive Medicine

**Background and Rationale:** In the mid-90s, the Monroe County Health Department's STD/HIV Program developed a stage-based behavioral counseling intervention based on the Transtheoretical Model of Behavior Change. This counseling is provided in a 15–20 minute session during each clinic visit by program staff. Client satisfaction with services including this counseling was unknown.

**Objectives:** To examine client satisfaction with services including stage-based counseling. To explore the immediate impact of stage-based counseling.

**Methods:** Between 8/99 and 12/99, 323 clients were interviewed using a close-ended fifteen question instrument assessing satisfaction with medical services, stage-based counseling, and attitudes towards sexual behavior change. The interviews were conducted at end of visit by trained professionals. Descriptive statistics and t tests were used to analyze the data.

**Results:** High satisfaction was reported with clinical services. "Very satisfied" responses ranged from 85% with the visit overall; 93% with the way staff talked, and 92% with medical care. 80% to 95% of clients strongly agreed with positive comments

about aspects of the stage-based counseling; 98% and 99% saw gender and race of staff, respectively, as no barrier. A significant number of clients demonstrated improvement in short-term intentions (e.g., for clients in a mutually monogamous relationship towards having their partner tested for HIV and for clients with multiple sexual partners towards using condoms consistently with all partners).

**Conclusions:** Responses indicate a high level of satisfaction with quality of care in a nurse-based STD clinic and high acceptability of stage-based counseling. Almost no barriers were identified with respect to gender and ethnicity of staff. Stage-based counseling was effective in influencing clients' short-term intentions towards sexual behavior change that would result in STD/HIV risk reduction.

**Learning Objective:** Participants will learn a method for assessing client satisfaction with STD clinical services that include a routinely delivered stage-based behavioral counseling intervention for sexual risk reduction.

## P28

### Improving Program Capacity to Examine Behavioral Risk: Barriers to Collecting and Reporting MSM Syphilis and Gonorrhea Incidence

*FR Bloom, JS St. Lawrence, M McFarlane*

Centers for Disease Control and Prevention, Atlanta, GA

**Background and Rationale:** From 1999 through early 2000 several outbreaks of syphilis and gonorrhea have occurred among gay men, some of who are HIV+. It is unclear whether or not this indicates an increasing share of disease among MSM.

**Methods:** Data were requested from 65 STD project areas with regard to syphilis incidence trends over the past five years. Requests for specific qualitative and quantitative data included sex of patient, MSM risk behavior, anatomical site of lesion or specimen, and HIV comorbidity.

**Results:** 42 sites responded. 23 sites did not provide a reason for their non-response. These missing data followed no obvious pattern and varied with respect to population density, syphilis morbidity, and geographic location. Many responding sites were unable to supply

specific data beyond sex of patient. Qualitative anecdotal responses voiced local concerns of increasing risk among MSM. Additional qualitative data suggest a need for increased capacity to collect and report such data. Barriers to collecting data include a perception that behavioral data pertaining to MSM risk may not be needed for the specific area and the separation of HIV and STD services at a local level (including anonymity of HIV+ patients attending and STD clinic). Barriers to reporting data include multiple databases without cross-linkages, limited personnel with expertise in programming, and a lack of canned reports for those areas using STD-MIS.

**Conclusion:** In order to evaluate MSM syphilis or gonorrhea on a national level, capacity to collect and report related data must be improved at a local level. Barriers to collection and reporting need to be overcome. Suggestions are given as to how some of these barriers will be addressed.

## P29

### Decrease in *Chlamydia trachomatis* Infection Following Interactive Video Behavioral Intervention

*JS Downs*<sup>1</sup>, *PJ Murray*<sup>2</sup>, *JP White*<sup>3</sup>,  
*C Palmgren*<sup>1</sup>, *B Fischhoff*<sup>1</sup>

1. Carnegie Mellon University, Pittsburgh, PA, 2. Children's Hospital of Pittsburgh, University of Pittsburgh, Pittsburgh, PA, 3. Slippery Rock University, Slippery Rock, PA

**Background:** This study reports the outcomes for an intervention aimed at decreasing chlamydia infection, the most common reported sexually transmitted infection in adolescent females. Secondary outcomes included self-reported sexual behaviors. The intervention was developed using a "mental models" theoretic approach, based on comprehensive qualitative interviews. It was delivered on an interactive video CD, using elements of cognitive rehearsal and reinforcement of desired behaviors.

**Objective:** Report outcomes of a randomized clinical trial evaluating a behavioral intervention designed to decrease STD acquisition.

**Methods:** Enrollees were 300 sexually active adolescent females 14-18 years of age who were randomly assigned to one of three intervention conditions: the video CD, a print equivalent, and a control group who

read commercially available brochures. Participants had repeated opportunities to view the intervention. Outcome data include three and six month follow-up using a variety of measures, including knowledge, attitudes, behaviors and chlamydia PCR.

**Results:** For subjects who completed both 3- and 6-month visits, there was a decrease in chlamydia infection from 14.8% at baseline to 5.8%,  $F(1,205)=8.85$ ,  $p<.01$ . At the 6-month visit there was a significant difference in chlamydia infection between the video (2.9%) and control (10.5%) groups ( $z=1.77$ ,  $p<.05$ ). In all groups, data show an overall improvement of STD knowledge, and a decrease in reported condom use problems. At baseline, 44% reported at least one condom use problem in the preceding three months. Frequency of condom use problems decreased in all groups with a greater decrease in the video group, tending toward significance.

**Conclusions:** The theoretically based intervention shows promise as a mechanism to prevent STD acquisition in sexually active adolescent females. Chlamydia PCR tests show the best evidence for the intervention's effectiveness.

**Learning Objective:** Describe a successful randomized clinical trial evaluating a behavioral intervention that decreased chlamydia acquisition in adolescent females.

## P30

### Intimate Partner Violence as a Predictor of High Risk Sexual Behaviors and STDs

*HM Bauer*<sup>1</sup>, *P Gibson*<sup>2</sup>, *M Hernandez*<sup>2</sup>,  
*C Kent*<sup>2</sup>, *J Klausner*<sup>2</sup>, *G Bolan*<sup>2</sup>

1. University of California, San Francisco, CA, 2. San Francisco Department of Public Health, San Francisco, CA

**Background and Rationale:** Victimization by intimate partner violence (IPV) may play an important role in sexual decision-making, thus may increase the risk for STDs and HIV.

**Objective:** To explore the relationship between IPV and high-risk sexual behaviors, substance abuse, partner infidelity, and history of STD among patients attending an STD clinic.

**Methods:** A self-administered survey of patients attending a public STD clinic in San Francisco was conducted from October 1996 to March 1997. Topics included sexual identity and partner gender, sexual risk behaviors, STD history, partner violence history, and demographics. Data were analyzed using SPSS.

**Results:** The response rate exceeded 90%. Data were analyzed for 2 groups of patients: 409 women with male sex partners (WSM) and 612 men with male sex partners (MSM). Among WSM, 11% reported IPV in the past 12 months; lifetime history of IPV was 24%. For WSM, history of IPV was associated with history of STD. IPV in the past 12 months was associated with alcohol or drug use before sex, unprotected vaginal sex, and main partners who had sex outside the relationship. Among MSM, 7.5% reported IPV in the past year; lifetime history of IPV was 16%. For MSM, recent IPV was associated with alcohol or drug use before sex and unprotected anal sex.

**Conclusions:** IPV is common among STD patients and is associated with risk behaviors and partner factors that increase patients' risk of contracting STDs, including HIV. Screening and referral for IPV should be routine for patients attending STD clinics.

### P31

## Picking Up on the Internet Highway: How Safe is it?

*A Kim, C Kent, F Yu, J Klausner*

Department of Public Health, San Francisco, CA

**Background:** A recent syphilis outbreak in San Francisco among persons who met through the Internet demonstrated the existence of new sexual networks that may facilitate transmission of HIV and STDs.

**Objective:** Describe types of partners and sexual practices of sexual partnering arranged through the Internet.

**Methods:** Between August 1999 and May 2000, a consecutive sample of clients seeking STD screening and treatment services at San Francisco's municipal STD clinic completed a self-administered one-page survey.

**Results:** 17% (170/1000) of surveyed patients reported meeting a sexual partner over the Internet in the past year. Men who have sex with men (MSM) were more

likely to meet partners over the Internet than non-MSM and women (32%, 10%, and 4%, respectively,  $p<0.01$ ). Internet partners of MSM were more likely to be "casual" or "one night stands" compared to non-Internet partners (83% vs. 66%,  $p<0.01$ ). MSM were more likely to report receptive anal sex with Internet partners compared to MSM with non-Internet partners (56% vs. 34%,  $p=0.04$ ). No differences were noted in positive STD diagnosis and reported HIV positive serostatus. However, compared to their HIV negative counterparts, HIV positive MSM with Internet partners were more likely to have a "casual" relationship with Internet partners (100% vs. 81%,  $p=0.06$ ) and less likely to have used a condom at first sex with their last Internet partner (40% vs. 71%,  $p<0.01$ ).

**Conclusions:** A substantial proportion of MSM STD clinic patients reported finding sexual partners over the Internet. MSM reported higher levels of sexual risk behavior with Internet partners compared to non-Internet partners.

**Learning Objectives:** To describe behavioral differences among sexually active persons meeting partners over the Internet and those that do not.

### P32

## Measuring Condom Use in Relation to Incident *Chlamydia trachomatis* (CT) Infection

*C Rietmeijer, R van Bemmelen, J Douglas, Jr.*

Denver Public Health, Denver, CO

**Background and Rationale:** The evaluation of condom use to prevent STD has yielded conflicting results, attributed alternatively to the lack of reliability of self-reported behaviors or to imprecise condom use measurements.

**Methods:** A retrospective chart review evaluating condom use among clients with incident CT infection at the Denver Metro Health Clinic (DMHC) between January 1, 1997 and June 30, 1999. Condom use in the past 4 months use was measured on a 5-point scale: 0%, 25%, 50%, 75% and 100%, without a distinction between main and non-main partners, or between types of sex acts.

**Results:** Among 3,567 persons screened for CT more than once, there were 385 incident infections (10.8%).

Persons using condoms 100% had marginally lower incidence (8.7%) than those using condoms 0%-75% (11.3% - Relative Risk [RR] 1.3; 95% confidence interval [CI] 0.9-1.7). However, persons reporting 0% condom use had similar rates (8.3%) as persons with 100% use (8.7%), but persons who used condoms 25%-75% had significantly higher rates (14.5% - RR compared to 100% use: 1.7; 95% CI: 1.3-2.2). Those with 0% use were significantly more likely to report only 1 partner in the previous 4 months. Excluding clients with re-infections (N=99), persons with 25%-75% condom use had an incidence rate of 13.6%, compared to 6.9% among persons with 100% use (RR 1.9; 95% CI 1.4-2.7). There was no association between condom use and re-infection.

**Conclusions:** The lack of association between 100% condom use and incident STDs may be explained by the lower risk of clients in monogamous partnerships who do not use condoms. This “protective” effect disappears if the partner in this relationship is infected and remains untreated.

**Learning Objective:** To understand that precise measures are needed to relate condom use behaviors to incident STDs.

### P33

## An Ecological Examination of Reported Sexual Behavior and STD Morbidity: Florida - 1997

*K Schmitt, M Powelson, S Lieb, R Hopkins, P Moncreif, D Thompson*

Florida Department of Health

**Background:** Within the context of the Integrated Surveillance of STD Related Reproductive Outcomes (OASIS) grant, a analysis was undertaken to examine the Sexual Behavior Module of the 1997 Behavioral Risk Factor Surveillance System (BRFSS) and STD case reports for the same time interval. Data for the analysis was drawn from the answers of over 1,800 respondents on such issues as condom use and number of sexual partners in the previous twelve months.

**Objectives:** To examine associations between reported sexual risk taking behavior and actual case reporting rates for different groups of Floridians based on gender, race/ethnicity, income, age, and marital status. To

identify issues and direct policy makers in the development of STD prevention messages.

**Methods:** Univariate, and bivariate analyses of the 1997 BRFSS and STD case reporting data sets using SPSS.

**Results:** Lower income groups have higher rates of STDs despite reporting use of condoms more regularly. Blacks and teens have higher rates of reported STDs yet report risk behaviors similar to other age and race/ethnicity groupings. 54% of STDs were reported among persons aged 20-34 and 36% among adolescents 15-19; while 92% of young adults reported one or more sexual partners compared to 68% of those aged 18-19. In contrast 20% of 18-19 year-olds reported 2-3 partners compared to 12% of those aged 20-34. Numbers of partners increased among whites over 20 years, while STD rates dropped.

**Conclusions:** Perhaps more than race/ethnicity, gender and reported risk behaviors, income may have a stronger influence on STD infection rates. However, it is challenging to draw valid and credible conclusions between such distinct data sets in the process of an ecological analysis.

**Learning Objectives:** Describe differences between STD rates associated with level of personal income, age, gender and race/ethnicity and reported numbers of sexual partners.

### P34

## Sexual Behavior in Florida: The BRFSS Survey of 1997

*M Powelson, K Schmitt, S Lieb, R Hopkins*

Florida Department of Health

**Background:** Within the context of the Integrated Surveillance of STD Related Reproductive Outcomes (OASIS) grant, an analysis was undertaken to examine the Sexual Behavior Module of the 1997 Behavioral Risk Factor Surveillance System (BRFSS). Data for the analysis was drawn from the answers of over 1,800 respondents on such issues as condom use and number of sexual partners in the previous twelve months.

**Objectives:** To determine the nature of sexual risk behavior of Floridians based on gender, race/ethnicity, income, age, and marital status in order to provide

policy makers with a better understanding of issues related to sexual behavior and its relationship to sexually transmitted diseases.

**Methods:** SPSS was used for a statistical breakdown of data set.

**Results:** During 1997, respondents reported 89% of Florida adults had zero or one sexual partner. For the sexually active population, the number of sexual partners declined after age 26, with no significant difference in number of sexual partners among blacks, Hispanics, or whites. Those earning \$20,000 a year or less reported more sexual partners in a twelve month span and greater condom use and noted different perceptions about condom effectiveness. Condom use among women was less, especially during their most sexually active years. Condom use was greatest among respondents with multiple sexual partners. While there were no significant differences between genders on the reason(s) they use a condom, there were significant racial differences.

**Conclusions:** Failure to use condoms may be related to income as well as race/ethnicity and perceptions about effectiveness.

**Learning Objectives:** Describe differences between perceived need to use a condom, associated with level of personal income, gender and race/ethnicity.

## P35

### Young Women at Risk: Preliminary Baseline Results of a Study to Examine Factors Associated with Re-infection Among Women Attending Two Inner-City STD Clinics

*K Lavelle, M Eberhart, M Goldberg, L Asbel, R Small*

Philadelphia Department of Public Health, Philadelphia, PA

**Background and Rationale:** Philadelphia STD morbidity data suggest that nearly 10% of women diagnosed with gonorrhea, chlamydia or both will become reinfected within 6 months of their first diagnosis. This estimate is likely to under-represent the true reinfection rate, as many women are not rescreened. In addition, the spectrum of risk factors associated with reinfection is not well delineated.

**Objectives:** Describe baseline socio-demographic characteristics and patterns of sexual behavior among women treated for gonorrhea and/or chlamydia at two Philadelphia STD clinics.

**Methods:** Women aged 12 to 29 years and treated for a confirmed or presumptive diagnosis of gonorrhea and/or chlamydia were recruited from two STD clinics to participate in a five-minute interview. Women with a confirmed STD(s) at baseline are rescreened six months later to evaluate the presence of a subsequent infection(s).

**Results:** Since October 1999, 299 women were interviewed for the study. Most (58%) were under twenty years of age, and black (85%); nearly half (45%) had not yet completed high school. Nearly all women had never been married, however, 20% were living with a sexual partner at interview. Three quarters of the women were 13 to 16 years of age at first sexual intercourse; the median number of lifetime partners was 5. Two-thirds did not use a condom the last time they had vaginal sex with a main partner and nearly half (47%) with a non-steady sexual partner. Over half of women interviewed reported a prior STD (52%), with 38% of those women diagnosed in the previous 6 months.

**Conclusions:** Baseline data suggest that women are reporting behaviors, inconsistent condom use in particular, that place them at increased risk for reinfection.

**Learning Objectives:** Describe baseline socio-demographic characteristics and potential risk factors for reinfection among women treated for an STD at two Philadelphia STD clinics.

## P36

### Use of Case-Crossover Designs to Assess Condom Effectiveness for STD Prevention

*L Warner<sup>6</sup>, D Newman<sup>6</sup>, M Kamb<sup>6</sup>, J Zenilman<sup>1</sup>, JM Douglas<sup>2</sup>, G Bolan<sup>3</sup>, J Rogers<sup>4</sup>, F Rhodes<sup>5</sup>, Project RESPECT Study Group*

1. Baltimore City Health Dept, 2. Denver Public Health, 3. San Francisco Health Dept, 4. New Jersey Health Dept, 5. Long Beach Health Dept, 6. CDC, Atlanta, GA

**Background:** *In vivo* studies offer minimal evidence that self-reported condom use protects against incident STDs. Uncontrolled confounding for differences in disease risk between users and nonusers may partially explain this finding.

**Objectives:** To apply a case-crossover design to assess condom effectiveness against incident STD. This self-matched case-control design compares an individual's behavior in intervals where STDs were acquired ("case interval") with behavior in intervals where STDs were not acquired ("control interval"). By design, confounding between subjects and confounding due to fixed covariates are eliminated.

**Methods:** Data were analyzed from Project RESPECT, a multi-center RCT of HIV counseling interventions among 4,328 heterosexual HIV-negative STD clinic patients. Analyses were restricted to sexually active participants with  $\geq 1$  3-month follow-up interval with STD and  $\geq 1$  3-month follow-up interval without STD. Condom use and partner characteristics were assessed using conditional logistic regression.

**Results:** 301 individuals acquired STDs in 323 intervals and remained uninfected in 416 intervals. 165 (54.8%) were male, 235 (78.1%) were African-American, 243 (80.7%) completed high school, and 142 (47.2%) had baseline STD diagnoses. Across intervals, 60 individuals (19.9%) reported consistent condom use, 215 (71.4%) reported inconsistent use, and 26 (8.6%) reported nonuse. Preliminary analyses indicate STD diagnoses were more likely during intervals of consistent use (Odds Ratio=1.4, 95% CI=(0.8-2.4)) and inconsistent use (OR= 1.7 (1.1-2.7)) compared with intervals with nonuse.

**Conclusions:** The apparent lack of association between self-reported condom use and incident STD is not due

to between-subjects confounding of disease risk but is likely due to within-subjects confounding. Individuals may report using condoms with higher risk partners, but not with lower risk partners. Future research should examine predictors of selective condom use to better understand methodological biases in condom effectiveness studies.

**Learning Objectives:** Describe application of a case-crossover study design to assess condom effectiveness for STD prevention

## P37

### Predictors of Contraceptive Discontinuation in an STD Clinic Population

*KC Ramstrom<sup>1,3</sup>, AE Barón<sup>3</sup>, LA Crane<sup>3</sup>, JC Shlay<sup>1,2,3,4</sup>*

1. Department of Public Health and 2. Department of Family Medicine, Denver Health and Hospital Authority and 3. Department of Preventive Medicine, 3. Department of Biometrics, and 4. Department of Family Medicine, University of Colorado Health Sciences Center, Denver, Colorado.

**Background and Rationale:** Contraceptive use and compliance are understudied in women attending STD clinics, a population at high risk for unintended pregnancy and STD.

**Objective:** To determine predictors of contraceptive discontinuation among women enrolled into a family planning study.

**Methods:** The sub-cohort was drawn from a randomized trial of women attending an urban STD clinic who were using no contraception or only condoms but wished to initiate effective contraception. The intervention group received a contraceptive prescription plus referral to a primary care provider, while the control group received a list of family planning providers; both groups were given STD treatment and condoms and spermicide. Participants were interviewed at baseline and at 4, 8, and 12 months regarding contraceptive use, problems and side effects. Multivariate survival analysis was used to assess predictors of discontinuation of effective contraceptive use.

**Results:** Of the 406 women starting an effective method (e.g., pills, Depo-Provera, Norplant, condoms, spermicide, diaphragm, or cervical cap) by 4-months,

the proportion discontinuing an effective frequency of use (>75%) by 1 year was 30%. In the intervention group, experiencing  $\geq 2$  problems that led to non-use of birth control was significantly related to discontinuation relative to no problems (HR 6.56, 95% CI 3.22-13.33), as was a history of risky sexual contact (i.e., sex with an IDU, prostitute, gay/bisexual partner or being a prostitute) in the year prior to enrollment (HR 0.07, 95% CI 0.01-0.57). In the control group, 1 problem (HR 2.99, 95% CI 1.39-6.43) or  $\geq 2$  problems (HR 3.52, 95% CI 1.89-6.94) predicted discontinuation. No other factors were related to discontinuation.

**Conclusions:** Problems using birth control were the major contributor to discontinuation of contraception. Interventions are needed that address potential problems using contraception and also support women with a history of risky sexual contact.

### P38

#### Significant Decline in Chlamydia Prevalence among Women Screened at San Francisco County Jail Intake – Oops, Maybe Not

*C Kent, A Snell, R Kohn, J Goldenson, J Klausner*

Department of Public Health, San Francisco, CA

**Background:** A high prevalence of chlamydial infection has been observed among incarcerated women.

**Objective:** To evaluate declining chlamydia prevalence among incarcerated women in San Francisco.

**Method:** Beginning August 1998, urine-based chlamydia screening of women, 18-45 years, included screening during intake into the county jail. Hours of intake screening varied by year: 1998 10 PM – 7 AM, 1999 3 PM – 7 AM, 2000 11 AM – 4 AM. Demographic, risk behavior and booking charge data was collected at time of specimen collection. Specimens were tested using LCx (Abbott).

**Results:** Between August 1998 and May 2000, chlamydia prevalence was 7.7% (183/2385) among women screened at intake. The prevalence declined significantly during this period: 1999 9.3% (58/621), 1998 7.4% (99/1342), 2000 6.1% (26/424) (P=.05). However, the proportion of women <25 years screened declined from 50% in 1998 to 41% in 2000 (P=.03)

and the proportion screened who were booked for sex work declined from 20% in 1998 to 5% in 2000 (P<.001). Women arrested for sex work also were more likely to be <25 years than women with other charges (P<.001). The prevalence of infection among sex workers remained stable at about 10% during this period. The apparent overall decline in prevalence can be attributed to the declining proportion of sex workers screened. The change in demographics of those screened was apparently the result of changing hours of screening and other staffing issues.

**Conclusions:** All changes in prevalence in a population over time must be interpreted with caution. STD prevalence among women in a jail setting may be particularly sensitive to seemingly minor changes in screening procedures. Evaluation of prevalence trends requires collecting booking and behavioral data.

#### Learning Objectives:

1. Understand importance of collecting booking and behavioral data to interpret trends in the corrections setting.
2. Understand impact of staffing issues and changes in screening procedures on screening outcomes in the corrections setting.

### P39

#### Incidence of Infertility Causing STDs among Incarcerated Women in Cleveland

*K Myers<sup>1</sup>, J Nehal<sup>1</sup>, V Grozier<sup>2</sup>*

1. Centers for Disease Control and Prevention, Atlanta, GA,
2. Ohio Department of Health

**Background and Rationale:** Infertility causing diseases have come to the forefront of public health in Ohio. This project created an opportunity to assess STD screening and treatment needs in a facility where no prior screening occurred.

**Objective:** To describe the population of incarcerated females, assess the prevalence of disease and define specific risks or markers that could be used to create a screening profile.

**Methods:** Incarcerated women were given a brief presentation, by a DIS, on gonorrhea and chlamydia. For interested women, a brief sexual history was taken to assess risk behaviors and incidence of prior STDs. A

signed consent form obtained. Urine samples were collected and tested for gonorrhea and chlamydia using Abbotts LCx. Also, pregnancy testing was done using an HCG test.

**Results:** Between May- August 1999, 331 women were screened. Most inmates were African-American (78.5%), from the inner city (44.7%) and between the ages of 30-40 (41.3%). 21 tested positive for gonorrhea (6.3%), 13 were positive for chlamydia (3.9%) and four were co-infected.

**Conclusions:** The infected population of the Cuyahoga County Justice center differed markedly from previously studied populations in regard to age (older) and the rate of chlamydia was significantly lower than expected.

**Learning Objectives:** Incarcerated women have a need for STD services equal to those non-incarcerated, as they may not be served by current STD or Family Planning Services, and as a population they probably don't seek services outside of the jail. Based on the risk behavior questionnaire, there is an extreme need for prevention counseling in this population.

## P40

### Cost Effectiveness of Universal Screening for STDs in US Correction Facilities

*JR Kraut, AC Haddix, RB Greifinger*

Centers for Disease Control and Prevention, Atlanta, GA

**Background:** Despite the high prevalence of STDs among incarcerated persons, universal screening for STDs in jails and prisons is rare. Testing and treatment based on symptoms is more common.

**Objective:** To examine the cost effectiveness of universal screening for syphilis, gonorrhea, and chlamydia of inmates in U.S. prisons and jails as compared with testing and treatment of symptomatic persons only.

**Methods:** A separate decision analysis model was developed to estimate the cost effectiveness of two alternative screening strategies for each of twelve mutually exclusive groups stratified by sex, site (jail or prison), and disease (gonorrhea, chlamydia, or syphilis). Costs and benefits to the public-sector health system (including the jail/prison) were evaluated. Data

for models were collected from published reports and expert opinion.

**Results:** Universal screening for syphilis of men and women with stat RPR in jails and prisons saves money when prevalence rates exceed 1%. Universal screening for gonorrhea and chlamydia of men is cost effective but is considerably more expensive than treatment based on symptoms. Universal screening for gonorrhea of women is less expensive than treatment based on symptoms when prevalence rates exceed 8% in prisons and 22% in jails (assuming the treatment rate before release in jails is 50%). Likewise, universal screening for chlamydia of women saves money when prevalence rates exceed 9% in prisons and 23% in jails (assuming the treatment rate before release in jails is 50%).

**Conclusions:** Correction facilities with high prevalence of STDs represent a potentially useful and economically feasible setting to test and treat people at highrisk for STDs with little access to care outside these institutions.

**Learning Objective:** Assist managers in decisions regarding implementation of universal STD screening in correction facilities.

## P41

### Prevalence of Chlamydia and Gonorrhea Among Adolescents Entering a Juvenile Detention Facility

*Y Kerr<sup>1</sup>, M Williams<sup>2</sup>, R Knaup<sup>2</sup>, B Stoner<sup>3</sup>*

1. Centers for Disease Control and Prevention, St. Louis, MO,
2. St. Louis County Department of Health, St. Louis, MO,
3. Washington University School of Medicine, St. Louis, MO

**Background:** Adolescent females have the highest rates of *Chlamydia trachomatis* and *Neisseria gonorrhoeae* in St. Louis County, Missouri. Through the Missouri Infertility Prevention Project, data from selective screening of adolescent females at St. Louis County Detention Center during 1998 revealed a positivity rate of 9.8% for chlamydia and 3.1% for gonorrhea using traditional, nonamplified nucleic acid probe kits.

**Objective:** To determine the chlamydia and gonorrhea prevalence through universal screening of adolescents at the St. Louis County Detention Center using urine-based nucleic acid amplification testing.

**Methods:** In February 1999, ligase chain reaction (LCR) urine testing for chlamydia and gonorrhea was initiated as routine screening for adolescents entering the detention center. Nursing staff members collected date of birth, exam date, test result, medication provided, and treatment date. Data were analyzed using Epi Info statistical software.

**Results:** Through February 2000, 241 females and 873 males were screened at the detention center (median age: 15 years; range 9-19 years). Twenty-five (10.4%) females were positive for chlamydia, and 23 (9.5%) were positive for gonorrhea. Twenty-six (3.0%) males were positive for chlamydia and 26 (3.0%) were positive for gonorrhea. Eleven (44.0%) females and 4 (15.4%) males with gonorrhea were coinfecting with chlamydia. Forty-nine (96.1%) of 51 chlamydia case-patients and 43 (85.7%) of 49 gonorrhea case-patients received adequate treatment. Treatment could not be verified for the remaining case-patients, who were transferred or discharged.

**Conclusions:** LCR urine testing is an effective method for universal screening of adolescents within a detention facility. LCR urine screening identified a three-fold greater prevalence of gonorrhea among incarcerated females than a non-amplified method. Urine screening among incarcerated adolescents can be an important part of the public health effort to improve standards of care in correctional facilities.

## P42

### A STD Screening and Reproductive Health Program in Juvenile Detention

*L Byer, B Draper, N Jansen*

Oakland County Children's Village, Pontiac, Michigan

**Background:** Detained adolescents are at high risk for STDs, rarely have accessed health care and if not screened will go undiagnosed, untreated and re-enter the community spreading infection. The availability of non-invasive urine tests affords the opportunity for mass screening. Additionally, most of the detained females, while sexually active, are not using birth control. Detention facilities provide an ideal opportunity to screen for STDs and provide reproductive health counseling.

**Objective:** To determine the incidence of gonorrhea and chlamydia in a detained population, through

urine-based screening. To determine the reproductive health needs of the females attending an on-site clinic.

**Methods:** Upon admission all adolescents were offered a urine test for gonorrhea and chlamydia and completed a brief sexual questionnaire. Females were encouraged to attend an on-site reproductive health clinic.

**Results:** Since September 1999, 350 adolescents have been screened, ranging in age from 12-18. Questionnaires revealed a high number of lifetime partners (average of 5), 12% history of STDs. STD results included 22% positivity for females; 4% positivity for males (all asymptomatic). Fifty females were seen in the Reproductive Health Clinic, results included an abnormal pap rate of 14%, Trichomoniasis (15%) and Bacterial Vaginosis (27%). Nine PID cases were diagnosed and treated on-site, not necessitating a costly ER visit.

**Conclusions:** Adolescents in detention have many sexual partners and a high incidence of STDs, including abnormal pap smears. By mass screening on admission, asymptomatic STDs can be treated prior to release. Also, detention offers an ideal opportunity to provide reproductive health counseling.

**Learning Objective:** Understand the need for STD Screening and Reproductive Health Services in the Juvenile Detention Population.

## P43

### A Rapid Intervention Syphilis Elimination Project in a Maryland Correctional Facility in Baltimore

*S Tulloch<sup>1</sup>, E Bohle<sup>3</sup>, N Hoyt<sup>2</sup>, T Mitchell<sup>1</sup>, J Armstrong<sup>3</sup>, J Stafford<sup>3</sup>, D Akers<sup>1</sup>, J Krick<sup>2</sup>, A Swetz<sup>3</sup>*

1. Centers for Disease Control and Prevention (CDC), Atlanta, GA, 2. Maryland Department of Health and Mental Hygiene (DHMH), Baltimore, MD, 3. Department of Public Safety and Correctional Services (DPSCS), Baltimore, MD

**Background and Rationale:** In 1997, Maryland identified 891 cases of primary and secondary (P&S) syphilis with a rate of 17.6 per 100,000. P&S syphilis in Baltimore City accounted for 75% (665) of reported cases with a rate of 98.5 per 100,000. Behavioral risk factors perpetuating the epidemic were cocaine addiction, commercial sex work, and failure to access care.

**Objective:** To develop and implement a multi-agency collaborative effort to significantly reduce syphilis among high-risk populations in Baltimore City.

**Method:** In January 1998, an on-site stat laboratory was placed in the Baltimore City Booking and Intake Center (BCBIC) that houses arrestees and detainees. The Statlab provides immediate test results allowing these individuals to be identified, immediately treated, and counseled prior to release.

**Results:** In 1999, 20,611 syphilis tests were performed at BCBIC and 70.9% (14,616) were on males. Overall 180 cases of syphilis were identified, with positivity rates of 4.0% (563/14,616) for males and 8.7% (522/5,996) for females. Of these cases, 91.7% (165) were identified among Non-Hispanic Blacks; and overall, the ages ranged from 19-65 years (mean = 33.5 years). Interviews were completed on 97.8% (176/180), of which 92.8% (167/180) were accomplished within 3 days of assignment. There were 54 cases of P&S syphilis; 8 (4.4%) were primary, and 46 (25.6%) were secondary. Of diagnosed cases, Baltimore City residents accounted for 94.4% (170/180) all syphilis cases and 90.7% (49/54) of P&S syphilis cases. For 1999, the 49 P&S syphilis cases among Baltimore City residents accounted for 22% (49/246) of reported cases for Baltimore City and 16% (54/343) P&S syphilis cases reported in Maryland.

**Conclusions:** Public health collaborative initiatives involving corrections have been effective in the fight to eliminate syphilis in Baltimore City and Maryland.

**Learning Objective:**

1. Understand the impact of corrections-based rapid STD intervention initiatives on the overall health status of the community at large.
2. Understand the role STD services can play as a component of corrections-based health care.
3. Describe the demographic differences in STD prevalence among arrestee and detainee populations.

## P44

### *Chlamydia trachomatis* and *Neisseria gonorrhoeae* Infections in a California Correctional Population: An Opportunity for Screening and Treatment

*KT Bernstein*<sup>1</sup>, *JM Chow*<sup>1</sup>, *J Ruiz*<sup>2</sup>, *A Pettifor*<sup>2</sup>, *A Parikh-Patel*<sup>2</sup>, *E Horowitz*<sup>3</sup>, *R Sun*<sup>2</sup>, *G Bolan*<sup>1</sup>

1. California Department of Health Services, Sexually Transmitted Disease Prevention and Control Branch, Berkeley, CA,
2. California Department of Health Services, Office of AIDS,
3. California Department of Corrections, Health Services

**Background and Rationale:** While much is known about bacterial STD burden in incarcerated jail and juvenile hall populations, examinations in correctional populations are sparse.

**Objective:** To estimate the prevalence and correlates of *Chlamydia trachomatis* (CT) and *Neisseria gonorrhoeae* (NG) infection in a population of newly admitted inmates to six California State Correctional facilities.

**Methods:** A cross-sectional survey of new incoming inmates in six California State Correctional facilities (2 female, 4 male) between January 25, 1999 and March 19, 1999 was conducted. Urine specimens left over after routine physical screenings before treatment at intake were tested with LCR for the presence of chlamydia and gonorrhea for all females and males 25 or younger. Demographic and arrest history data were collected from medical record abstraction and Department of Corrections database.

**Results:** Of the 1795 eligible participants, urine-screening results were available on 1540 (86%). The overall CT prevalence was 7.0% [95% CI 6.8%-8.4%] and the overall NG prevalence was 0.2% [95% CI 0.1-0.7]. The CT prevalence for females was 25/720 (3.4%) and 82/820 (10%) for males. Males were three times more likely to be infected with CT at intake than females [OR=3.11, p<0.0001]. In bivariate analysis, no demographic or arrest history variables were associated with CT infection for females. Among males, African-Americans were more likely than Whites to have CT [OR=2.88, p=0.03] and those arrested for theft were more likely to be infected compared to those with other arrests [OR=1.68, p=0.05].

**Conclusions:** While the prevalence of NG is low in this population of incoming State inmates, the high CT prevalence, especially among males, suggests that universal CT screening and treatment should be implemented at the county jail level for males 25 or younger in California, before State Correctional transfer.

**Learning Objective:** Describe the epidemiology of *Chlamydia trachomatis* and *Neisseria gonorrhoeae* in a population of incoming inmates to California State Correctional facilities.

## P45

### Urine-based STD Screening in Adult Female Correctional Facilities in Los Angeles: Assessing Prevalence, Developing Screening Criteria, and Determining Feasibility

*K Bernstein, R Bergstresser, R Wang, I Dyer*

Los Angeles County Sexually Transmitted Disease Program,  
Los Angeles, CA

**Background:** Los Angeles County incarcerates over 25,000 adult women each year. Jails provide concentrated access to a large number of high-risk women, yet delays in screening and limited screening criteria resulted in only 2.6% of women receiving testing for chlamydia and 12.3% for gonorrhea in Los Angeles in 1998.

**Objectives:** To assess the chlamydia and gonorrhea prevalence among adult female inmates, the feasibility and acceptability of conducting urine-based STD screening during intake, and to develop effective screening criteria.

**Methods:** Between January and October 1999, voluntary urine-based screening using ligase chain reaction was offered to all female inmates during intake for one week each month in the main County jail. Data collected included birth date, race, symptoms, pregnancy status, and reason for arrest.

**Results:** 2,594 women accepted testing (81.7%). 147 (5.7%) tested positive for chlamydia and 34 (1.3%) for gonorrhea; of these 12 were co-infected. Younger women had the highest chlamydia rates: 19.8% for 18-19 year olds; 12.2% for 20-24 year olds, and 7.1% for 25-29 year olds. Based on booking charge, women arrested for prostitution had the highest chlamydia

positivity (9.2%). 119 (70.4%) women were treated on-site and an additional 19 (11.2%) were located and treated through field follow-up. Screening women under age 30, arrested for prostitution, or pregnant, which totaled 46% of all women, detected 79% of all chlamydia cases.

**Conclusions:** Implementing screening criteria based on age, pregnancy status, and reason for arrest will detect 80% of chlamydia cases while screening less than half of the women. With limited resources, the high acceptance rate and successful implementation of screening procedures makes screening large numbers of women both feasible and effective in this setting.

**Learning Objectives:**

1. Describe the feasibility and acceptability of conducting urine-based STD screening in an adult female detention facility.
2. Describe evidence-based recommendations for screening criteria.

## P46

### Screening for *Chlamydia trachomatis* Infection Among Males Admitted to the Wisconsin Adult Correctional System

*JR Pfister<sup>1</sup>, L Amsterdam<sup>2</sup>, P Voermans<sup>3</sup>,  
RA McDonald<sup>1</sup>, C Thorpe<sup>3</sup>, JP Davis<sup>2</sup>*

1. Wisconsin State Laboratory of Hygiene, University of Wisconsin-Madison, 2. Wisconsin Division of Public Health, Madison, WI, 3. Bureau of Health Services, Wisconsin Department of Corrections, Madison, WI

**Background and Rationale:** *Chlamydia trachomatis* (Ct) testing of males upon admission to the Wisconsin Adult Correctional System (WACS) is currently guided by clinician discretion. Targeted screening using evidence-based risk criteria may be more cost-effective than either discretionary testing or universal screening.

**Objective:** To determine the prevalence and risk indicators of Ct infection among newly admitted male prison inmates, and to identify and evaluate possible screening strategies.

**Methods:** A study was conducted of 2,937 consecutive male inmates receiving medical assessment upon admission to WACS between July and December 1998. A questionnaire assessing possible risk indicators was

administered, and a urine specimen was collected for a leukocyte esterase test (LET) and a Ct ligase chain reaction (LCR) assay.

**Results:** The overall prevalence of Ct was 3.1%. Characteristics significantly associated with increased risk included symptoms, inconsistent condom use, sex partner risk (new or multiple partners, or partner with other partners), young age, and positive LET. LCR testing based solely on behavioral and clinical risk indicators would have identified only 65.2% of infections by testing 34.8% of inmates. However, screening of all inmates younger than 30 years of age or with a positive LET, regardless of other risk indicators, would have identified 90.2% of infections by testing just 58.8% of the men.

**Conclusions:** Universal urine LCR testing of young male inmates, and of older men who test positive for leukocyte esterase, may be an appropriate and cost-effective approach to identification of Ct infection in correctional institutions. Additionally, other measures such as testing of pooled specimens may be employed to further reduce costs.

**Learning Objective:** Understand various possible testing strategies for the detection of Chlamydia infections among men in correctional institutions.

## P47

### Implementing Syphilis Screenings in the Local Jails in Danville, Virginia

*RS Mason*

Virginia Department of Health, Richmond, VA

**Background and Rationale:** A syphilis outbreak has persisted each year for the past five years in Danville. Evaluating syphilis morbidity through prevalence assessment is one of the enhanced surveillance objectives. Corrections has been identified as a population that should be routinely screened for syphilis.

**Objective:** To successfully provide syphilis screening in all local jails and detention centers in the Danville area.

**Methods:** There are four adult correctional facilities and one juvenile detention center in the area. Each facility was contacted to determine current syphilis

screening protocols. None of the facilities provided routine syphilis screenings. Testing was performed if the inmate complained of signs/symptoms or was being considered for kitchen duties. Each facility cited budgetary and manpower constraints that kept them from providing routine testing. The use of Virginia Epidemiology Response Team (VERT), the state laboratory for specimen processing, and local health department phlebotomy supplies was offered to each facility if it agreed to provide weekly voluntary syphilis testing. Each facility agreed and testing began after education was provided to raise awareness and encourage testing.

**Results:** Within the first two weeks, 200 inmates were tested and four new cases were identified. Collaboration between the correctional facilities and VERT has been successful. The response from inmates to testing has been positive yielding >50 percent participation.

**Conclusions:** Syphilis screening in local jails can be accomplished if the needs and concerns of the facility are addressed. Most jails are concerned for the welfare of the inmates, but limited budgets and manpower make it difficult to provide screenings for public health reasons. Communicating with these facilities, understanding their issues, and meeting their needs can make the difference in syphilis elimination.

## P48

### Repeat Female Juvenile Offenders: Are They at Higher Risk of Chlamydial Infections than Single Visit Juvenile Offenders?

*M Liebowitz, L Rollin, I Dyer*

Los Angeles County Sexually Transmitted Disease Program, Los Angeles, CA

**Background and Rationale:** Incarcerated adolescents represent a high-risk group for STDs. Repeat juvenile offenders particularly may be at higher risk for STDs compared to juveniles incarcerated only once.

**Objective:** To examine the chlamydia prevalence in juvenile females at first and subsequent incarceration.

**Methods:** We analyzed demographic and laboratory test result records of female adolescents admitted to Los Angeles County Juvenile Halls between February

1997 to February 2000. Repeaters were defined as detainees having two or more admissions at least 90 days apart during the study period.

**Results:** During the study period, 6,661 females were admitted to juvenile hall with an overall chlamydia positivity of 16.1%. 1,873 (28% of all detainees) were repeat offenders and had a chlamydia prevalence of 20.2% at first visit, as compared with 16.3% for single visit females. The median age of the single visit girls was 15.6 years, compared with 15.0 for repeaters at first visit ( $p < .001$ ). The odds of a repeater testing positive for chlamydia at their first visit was 27% greater than for detainees admitted only once. Repeaters who tested positive for chlamydia at a previous visit (and received treatment) were more than twice as likely to be positive on a subsequent visit than those females with previous negative results (OR 2.3, 95% CI (1.7, 3.1)).

**Conclusions:** As repeat juvenile offenders with histories of chlamydial infection are more likely to become reinfected with chlamydia than other incarcerated females, intervention programs to gather risk behavior information and provide health education and case management services should be implemented. Re-confinement presents a unique opportunity to access a population that is both hard to reach and at very high risk for STDs.

**Learning Objectives:** Understand chlamydia prevalence and reinfection rate among repeat female juvenile offenders as compared with females incarcerated only once.

## P49 STD Services and Chlamydia Screening Coverage for California Juvenile Justice Facilities

*J Miller, S Adler, K MacDonald, G Bolan*

Sexually Transmitted Disease Prevention and Control Branch,  
California Department of Health Services, Berkeley, CA

**Background and Rationale:** Prevalence studies document high rates of STDs, particularly Chlamydia (CT) and Gonorrhea (GC), among incarcerated youth. STD services /testing policies at California Juvenile Justice facilities have not been evaluated.

**Objective:** 1) To characterize STD services at California Juvenile Justice facilities and 2) to assess CT screening coverage.

**Methods:** The California STD Control Branch developed a survey that was mailed to medical administrators at 52 County juvenile justice and 14 California Youth Authority facilities in California. Among facilities with CT screening policies, CT screening coverage was determined from juvenile justice admissions reports and laboratory reports.

**Results:** Forty-six facilities responded (69%). Monthly, these facilities serve an estimated 8000 wards (83% male, 17% female). Thirty-nine facilities (85%) reported offering STD services. For sites reporting STD services, the different services included testing for: CT (95%), GC (90%), Syphilis (90%), HIV (92%), Hepatitis B Virus (82%) and Hepatitis C Virus (79%). 22% of sites offered CT screening at booking; 38% of sites offered CT testing only at sick call. Of those offering CT screening, only 15% tested over 50% of their eligible population.

**Conclusions:** Although most California juvenile justice facilities provide a range of STD services, STD testing occurs primarily on a symptomatic basis. Screening at sick call and low CT screening coverage demonstrates deficiencies in existing CT screening policies.

**Learning Objectives:**

1. Describe level of STD services in juvenile justice facilities.
2. Describe screening coverage in local juvenile justice facilities.

## P50 Surveillance For Chlamydia Among Adolescent Males In The Juvenile Detention Center - Philadelphia, PA

*L Asbel, M Goldberg, R Small*

City of Philadelphia, Department of Public Health

**Background and Rationale:** Historically, routine chlamydia screening has been aimed at women to prevent PID and infertility; however, no comparable screening program exists for males. Consequently, men accounted for only 17.2% of chlamydia cases reported in 1999 suggesting that asymptomatic, untreated males represent a significant reservoir of infection. This is

consistent with data describing high rates of infection and reinfection among 15-19 year old females and supports screening targeted to their male counterparts. The Juvenile Detention Center (JDC) was selected as one screening site.

**Objective:** To identify and treat adolescent males with *C. trachomatis* detained in the JDC; to determine the prevalence of infection among this population.

**Methods:** Upon admission to the detention center, all adolescent males are offered urine-based chlamydia testing. Positive test results are faxed to the provider for treatment. All test results (negative & positive) are entered into the STD program's database. All adolescents released prior to treatment are provided with field follow-up by the STD Program's Disease Intervention Specialists to ensure treatment.

**Results:** Testing was initiated on December 13, 1999. Through March 31, 2000, 1129 adolescent males were screened for chlamydia; 119 chlamydial infections were identified for a positivity rate of 10.5%. Adequate treatment has been confirmed for 67.2% (80/119) of these cases.

**Conclusions:** Screening adolescent males in a juvenile detention center for *C. trachomatis* may be an effective method to identify and treat asymptomatic chlamydial infections.

## P51

### Urine-based Chlamydia Screening in Youth Detention Facilities

*M Whelan, A Foley, P Etkind, W Dumas, G Shostak\**

Division of STD Prevention, Boston, Massachusetts,

\*Department of Youth Services

**Background:** There are approximately 3,500 teens under the supervision of the Department of Youth Services. Youth offenders are at higher risk of chlamydia infection and they are less likely to access medical care in the private sector. Minority youth are disproportionately represented within the system. Youth offenders are more likely to abuse drugs and alcohol and are more frequently sexually active with multiple partners.

**Methods:** Urine-based screening for chlamydia provides a non-invasive opportunity to screen youth offenders during the admission process. Female offenders in two lock-up facilities run by the Department of Youth Services were offered CT screening. Urine specimens were obtained upon intake and tested using LCR technology. Admission screening is most efficient. Frequently, the youth are returned to the community prior to examination.

**Results:** Through 5/31/00, 270 young women have been tested, with 34 (12.6%) positive. This is the highest prevalence noted in any group currently being screened for chlamydia in Massachusetts. We will discuss the characteristics of those who test positive, as well as results of efforts to reach their partners. In addition, we will discuss how we will increase and expand the level of STD prevalence testing in this group.

#### Learning Objectives:

1. The participants will be able to describe developing non-intrusive prevalence based chlamydia screening in a high-risk population.
2. The participants will be able to appraise prevalence screening as a tool for community-based disease prevention for populations at high risk.

## P52

### Prevalence of *Chlamydia trachomatis* in Adolescents within a Juvenile Justice Detention Facility in New York City, New York

*A Vasser<sup>1,2</sup>, S Helfand<sup>4</sup>, L Neylans<sup>1,2</sup>, L Russo<sup>3</sup>, D Apple<sup>3</sup>, S Rubin<sup>1,2</sup>, S Blank<sup>1,2</sup>*

1. New York City Health Department STD Control Program, New York, NY, 2. Division of STD Prevention, Centers for Disease Control and Prevention, Atlanta, GA, 3. Division of Juvenile Justice, New York, New York, 4. Emergency Medical Services Association

**Background:** Incarcerated adolescents are at higher risk for acquiring STD's than their non-incarcerated counterparts. Annually, the New York City (NYC) Department of Juvenile Justice (DJJ) admits 5,000 adolescents  $\leq$  15 years of age. In March 2000, the NYC Department of Health in collaboration with DJJ piloted a *Chlamydia trachomatis* screening program using urine based Ligase Chain Reaction (LCR) testing.

**Objective:** To identify and treat Chlamydia infections among adolescents admitted to NYC's Bridges/Spofford Juvenile Correctional Facility; to measure facility-specific Chlamydia prevalence; and to determine the operational feasibility of incorporating LCR testing in the standard intake procedure.

**Methods:** During initial intake evaluation, all detainees at the Bridges/Spofford Juvenile Correctional Facility received educational materials on Chlamydia and other STD's and were offered urine testing. All urine specimens were tested for Chlamydia using LCR. Patients found to be infected were treated at the facility or if discharged, followed in the field for subsequent treatment at a non DJJ facility. Data on positivity and treatment rates were recorded and analyzed.

**Results:** Between March 21, 2000 to April 21, 2000, 282 adolescents were admitted and all were tested for Chlamydia using urinary LCR. Among detainees, 82% were males; 66% were Black, 28% Hispanic, 2% White, 4% American Indian/Alaskan Native; Age Range 12-15. Twenty-five detainees tested positive (7%); 19 were treated on site, and 6 were followed up in the field for subsequent treatment.

**Conclusion:** Urinary LCR screening for Chlamydia has a high degree of patient acceptability and high diagnostic yield among juvenile detainees and can be feasibly integrated into the intake process at a metropolitan juvenile correctional system.

## P53

### Semi-Automation of the Gen-Probe AMPLIFIED *Chlamydia trachomatis* Assay and the Gen-Probe PACE 2 System for *Chlamydia trachomatis* and *Neisseria gonorrhoeae* on the TECAN GENESIS RSP 150 Liquid Handling System

*DH Green*<sup>2</sup>, *SJ Johnson*<sup>1</sup>, *DA Reed*<sup>1</sup>,  
*LS Wood*<sup>1</sup>, and *TM Dean*<sup>1</sup>

1. Gen-Probe Incorporated, San Diego, California and

2. Philadelphia Department of Public Health,  
Philadelphia, Pennsylvania

**Background and Rationale:** A menu of semi-automated assays for *Chlamydia trachomatis* (CT) and *Neisseria gonorrhoeae* (GC) is described including the Gen-

Probe AMPLIFIED *Chlamydia trachomatis* assay (AMP CT) for swab and urine specimens and the Gen-Probe PACE 2 System for swab specimens.

**Objective:** To determine if the Gen-Probe AMP CT and PACE 2 GC tests can be semi-automated on the TECAN GENESIS RSP 150 instrument.

**Methods:** The TECAN GENESIS RSP 150 automated liquid handling system performs specimen transfer and many reagent transfers. We report assay validation for two menu choices: PACE 2 GC & AMP CT from a single swab specimen, and AMP CT for urine specimens. The current package insert for PACE 2 GC requires expression of the swab, but we do not express the swab for the semi-automated protocol.

**Results:** We demonstrated 100% agreement between swab expression and non-expression for PACE 2 GC using 746 swab specimens, 191 of which were GC-positive. Side-by-side comparison of semi-automated with manual PACE 2 GC & AMP CT using 569 swab specimens showed equivalent assay performance. Likewise, side-by-side comparison of semi-automated with manual AMP CT using 211 urine specimens showed equivalent assay performance. A contamination study for PACE 2 GC & AMP CT using 144 swab samples, half of which were spiked with RNA at 1000 times the positive control concentration for CT and 15 times the positive control concentration for GC, showed no evidence of contamination caused by the TECAN GENESIS RSP instrument.

**Conclusions:** Semi-automation of the Gen-Probe AMP CT and PACE 2 System provides flexibility in assay selection, assay results equivalent to manual processing, and throughput of over 400 tests per day for AMP CT and over 1000 tests per day for PACE 2 assays.

P54

## A Multi-State Collaborative Approach to Determining the Adequacy of Specimens Collected for *Chlamydia trachomatis* Testing in Region I

*H George*<sup>1</sup>, *A Foley*<sup>1</sup>, *D Hubbard*<sup>2</sup>, *J Martin*<sup>3</sup>,  
*B Pike*<sup>3</sup>

1. Massachusetts State Laboratory Institute, Boston, MA,
2. New Hampshire Public Health Laboratories, Concord, NH,
3. Maine Health and Environmental Testing Laboratory, Augusta, ME

**Background:** Several studies of endocervical specimens submitted for *Chlamydia trachomatis* (CT) testing have found 25-40% of specimens unsatisfactory due to an inadequate number of appropriate cells.

**Objective:** The Region I, National Infertility Prevention Advisory Board (Chlamydia Project), developed a quality system to assess/insure the adequacy of the submitted specimens.

**Method:** Maine, Massachusetts and New Hampshire agreed to participate in an IRB approved protocol. All participants were trained in specimen and data collection by a team consisting of a family planning manager, laboratorian and epidemiologist. Clinicians were to collect 25 duplicate swabs: one for routine CT testing; one as a direct smear for assessment of specimen adequacy. Assessments of specimen adequacy would be done by one public health laboratory, Massachusetts. The slides were stained with basic fuchsin and examined to determine the number and type of cells present. We defined an adequate specimen as containing  $\geq 20$  columnar/cuboidal cells. The set was considered satisfactory if at least 80% of the smears contained  $\geq 20$  columnar/cuboidal epithelial cells. If  $< 20$  smears contained an inadequate number of appropriate cells, the clinician was to submit an additional 10 specimens and achieve 100% adequacy.

**Results:** A total of 611 specimens submitted from ME, MA and NH have been analyzed to date (12/99) with a 92% (562) adequacy rate. No positive specimens were found in those accompanying inadequate smears.

**Conclusion:** Using  $\geq 20$  columnar/cuboidal cells as a standard for specimen adequacy, an adequacy rate of  $>90\%$  can be achieved for specimens submitted for CT

testing. It should be stressed that the use of nucleic acid amplification techniques does not negate the necessity for adequate specimens.

P55

## Endolymphatic Antibacterial Therapy in Patients with Genital *Chlamydia trachomatis* Infection Associated with Refractory Chronic Prostatitis

*EA Batkaev*, *AV Tyshkevich*

Department of Dermatology and Venereology, Russian Medical Academy for postgraduate education, Moscow, Russia

**Background:** The high prevalence of chlamydial infection and chronic prostatitis worldwide cause great concern among physicians. Recent data suggest the prostate can harbor *Chlamydia trachomatis*, however its etiological role in prostatitis is still uncertain. Doxycycline is one of the most effective antibiotics in treatment of *Chlamydia trachomatis* infection and chronic prostatitis as well. However management of chronic prostatitis is a serious problem because of difficulty with antibiotic penetration.

**Objectives:** The objective of this study was to optimize antibiotic therapy in the treatment of patients with genital chlamydial infection associated with chronic prostatitis by means of endolymphatic administration of doxycycline.

**Methods:** 79 selected patients with genital chlamydial infection and with chronic prostatitis refractory to multiple previous courses of antimicrobial therapy were enrolled in comparative clinical study. *Chlamydia trachomatis* was identified by the polymerase chain reaction (PCR) and direct fluorescent antibody (DFA) test. The age of patients was between 21 and 49 years. Direct endolymphatic administration of doxycycline (IV) was performed in 34 patients of intervention group, whereas the standard regimen per os with doxycycline was used in treatment of 45 patients in control group.

**Results:** *Chlamydia trachomatis* was eradicated in 34 (100%) patients treated with endolymphatic administration of doxycycline and in 37 (82%) patients of control group. Remission period of chronic prostatitis from 1 to 2,5 years was obtained in 25(74%) patients

of intervention group, while 31(71%) patients of control group had relapse after remission period of 1 year. The difference between the two groups was statistically significant ( $p < 0,05$ ).

**Conclusions:** Endolymphatic administration of doxycycline (IV) appears to be an effective and durable treatment for patients with genital chlamydial infections and chronic prostatitis unresponsive to traditional therapy.

## P56

### Pooling of Gen-Probe Swab Specimens for Transcription Mediated Amplification (TMA) Testing for Cervical *Chlamydia trachomatis* Infection in Women

*GJ Dizikes*<sup>1</sup>, *R Tanaka*<sup>2</sup>, *R Moulton*<sup>3</sup>, *C Biggs*<sup>4</sup>, *D Green*<sup>5</sup>, *R Steece*<sup>6</sup>

1. Illinois Department of Public Health, Chicago, IL, 2. Alaska Public Health Laboratory, Anchorage, AK, 3. Idaho Bureau of Laboratories, Boise, ID, 4. Oregon Public Health Laboratory, Portland, OR, 5. Philadelphia Department of Public Health, Philadelphia, PA, 6. Association of Public Health Laboratories, Washington, DC

**Background and Rationale:** Despite its high sensitivity, amplified nucleic acid-based testing for *C. trachomatis* may not be implemented by some programs due to its high cost. While the use of selective screening criteria can limit test usage and costs, pooling of specimens may allow broader application of this technology within a limited budget.

**Objective:** To determine the degree to which sensitivity is lost when specimens are pooled, and the potential cost savings of this methodology.

**Methods:** Five public health laboratories prepared 2040 endocervical specimens for testing by Gen-Probe AMP-CTJ. 408 five-fold pools and 204 ten-fold pools of these specimens were also prepared, and the specimens and their pools were tested using the manufacturer's standard protocol.

**Results:** 122 positive specimens were identified by individual tests out of the total 2040 (6.0% positivity). Of 82 pools of five specimens containing only a single positive specimen, 77 pools tested positive by

AMP-CTJ (94% sensitivity). Of 54 pools of ten specimens containing only a single positive specimen, 50 pools tested positive (93% sensitivity). If all positive specimens were considered, 117/122 (96%) would have been detected by first testing 5-fold pools, and then retesting all individual specimens comprising positive pools. In this way, only 888 total tests, rather than 2040, would have been performed. If the specimens were evaluated in a similar manner, but with testing 10-fold pools first, 118/122 (97%) would have been detected using 984 total tests.

**Conclusions:** 5-fold or 10-fold pooling resulted in only a slight loss in sensitivity, which was even further minimized if overall detection rates are considered. Optimal pool size to minimize test usage is dependent upon positivity rate. At an overall positivity rate of 6.0%, 5-fold pooling is more advantageous than 10-fold pooling. This relationship is also seen at each individual site, with positivity rates ranging from 3.2% to 8.5%.

**Learning Objective:** Understand that by pooling swab specimens for amplified testing of *C. trachomatis*, half the cost of materials can be saved, while losing less than 5% in sensitivity.

## P57

### Comparison of the Performance of Two Nucleic Acid Amplification (NAA) Assays for Detection of *Chlamydia trachomatis* and *Neisseria gonorrhoea* Infections

*RA McDonald, JR Pfister*

Wisconsin State Laboratory of Hygiene, Madison, WI

**Background:** NAA assays for chlamydia show improved performance over conventional, non-amplified methods. While performance gains have been less striking for gonorrhoea, the convenience of a single specimen for both agents is desirable. Several commercial NAA assays are available, but high cost has limited their use in publicly funded STD programs.

**Objective:** To compare the performance of a new, less expensive NAA assay for chlamydia and gonorrhoea, the ProbeTec ET (Becton-Dickenson, Sparks, MD) with the Abbott LCx (Abbott Diagnostics, Abbott Park, IL).

**Methods:** Study specimens included 379 duplicate cervical swabs collected in random order using appropriate collection materials, and 389 split male urines. Specimens were transported to the lab, processed and tested according to manufacturer's specifications for each assay. Specimens with discordant results were repeated by both assays, and chlamydia DFA was performed.

**Results:** All 768 duplicate specimens were tested for chlamydia, with 67 (8.7 %) concordant positives, 698 concordant negatives, and 99.6% agreement. Further analysis of the three discordant specimens yielded one false-positive for each assay, and one apparent ProbeTec false-negative. Respective sensitivities for LCx and ProbeTec were 100% and 98.6%, and specificity for both was 99.9%. The 698 specimens tested for gonorrhea yielded 24 (3.4%) concurrent positives, 673 concurrent negatives and one apparent Probe Tec false-positive. Agreement was 99.9%, and the sensitivity and specificity of the Probe-Tec as compared to LCx was 100% and 99.9% respectively.

**Conclusions:** Performance of ProbeTec ET was comparable to LCx. ProbeTec features higher-throughput, lower-maintenance instrumentation and a lower cost per reportable result. This may make NAA accessible for more screening programs, resulting in detection and treatment of more infections and ultimately a reduction in STD-related morbidity.

## P58

### Pooling Endocervical Swab Specimens for Detection of *Neisseria gonorrhoeae* and *Chlamydia trachomatis* by LCR: Performance and Workflow Issues

*D Coppedge, SJ Jirsa, R Teske, MJ Loeffelholz,*

State Hygienic Laboratory, Univ. Iowa, Iowa City, IA

**Background and Rationale:** The relatively high cost of DNA amplification-based tests for *Chlamydia trachomatis* and *Neisseria gonorrhoeae* has restricted their use in screening programs. One option that potentially offers both sensitive detection and lower laboratory costs is testing of pooled specimens. While previous studies have shown that pooling specimens for the detection of

*C. trachomatis* sensitive, no such studies, to our knowledge, have been conducted for *N. gonorrhoeae*.

**Objectives:** To evaluate pooling of female endocervical swab specimens for the detection of *C. trachomatis* and *N. gonorrhoeae* using the LCR (Abbott) test, and to design and implement a computerization program to improve workflow and maintain turnaround time.

**Methods:** A total of 340 female endocervical swabs submitted to the laboratory were tested individually, then combined in pools of four, and retested using a reduced sample/cutoff ratio of 0.2 for both organisms. A computer program was developed that sorts specimens into groups of four, assigns a unique pool identification number, provides a worksheet with barcodes for the pool numbers and the specimen accession numbers, uploads results to the main frame database, and prints a final report.

**Results:** Compared with testing specimens individually, pooling detected 19/21 (90.5%) *C. trachomatis* infections and 6/6 (100%) *N. gonorrhoeae* infections. Results of pooled specimens were reported within 48 hours of receiving the specimens.

**Conclusions:** Pooling allows for the use of an adequately sensitive test, while reducing overall labor costs. Pooling may result in slightly decreased sensitivity for *C. trachomatis*, although results suggest a "learning curve" may be partially responsible for the decreased sensitivity. The use of computer-generated worksheets improves specimen tracking and facilitates prompt testing of individual specimens from positive pools.

P59

## Cervical Ectopy and STD: A Predictor of STD Acquisition

*S Lyss<sup>1</sup>, M Kamb<sup>1</sup>, D Newman<sup>1</sup>, T Peterman<sup>1</sup>, JM Zenilman<sup>2</sup>, JM Douglas<sup>3</sup>, F Rhodes<sup>4</sup>, J Rogers<sup>5</sup>, G Bolan<sup>6</sup> for the Project RESPECT Study Group*

1. Centers for Disease Control and Prevention, Atlanta GA, 2. Baltimore City Health Department, Baltimore MD, 3. Denver Public Health Department, Denver CO, 4. Long Beach Health Department, Long Beach CA, 5. New Jersey Department of Health, Newark NJ, 6. San Francisco Health Department, San Francisco CA

**Background and Rationale:** Numerous studies, primarily cross-sectional, suggest a relationship between cervical ectopy and STDs. We used longitudinal data to examine the relationship between ectopy and STD acquisition.

**Objectives:** To examine the temporal relationship between ectopy and STD and to examine factors associated with report of ectopy.

**Methods:** We used prospective data collected 7/93 – 9/96 for a 5-site, randomized controlled trial of counseling among STD-clinic patients. We included women examined for ectopy (visual inspection) at baseline and follow-up and excluded pregnant women and women who had undergone hysterectomy. STDs were chlamydia, gonorrhea, and trichomonas (laboratory-determined). We used logistic regression to assess the association between STD and ectopy, adjusting for age, site, and race/ethnicity.

**Results:** 1404 women were included. **Baseline:** Ectopy was reported in 21% of women with concurrent STD and 16% of women without STD (OR<sub>a</sub> 1.56; 95% CI, 1.1-2.2), including 24% with chlamydia and 16% without (OR<sub>a</sub> 1.63; 95% CI, 1.1-2.4). Ectopy was reported in 34% of women examined by physician's assistants (PAs) versus 15% examined by nurses. Ectopy was unassociated with hormonal contraceptive use. **Follow-up:** Of women with baseline ectopy, 38% had ectopy during follow-up. Again, ectopy was more likely to be reported in the presence of STD or following examination by PAs. Ectopy at baseline was not associated with acquisition of any STD (OR<sub>a</sub> 0.99; 95% CI, 0.7-1.4), nor of chlamydia (OR<sub>a</sub> 1.00; 95% CI, 0.6-1.6), in follow-up.

**Conclusions:** We did not find evidence that ectopy increases STD risk. Unaided visual inspection, the most common method for assessing ectopy, appears unreliable (differs by provider education). Measurement error (cervicitis may increase the appearance of ectopy) and/or biologic fluctuation (conceivably due to cyclic hormones) may also affect the apparent association between ectopy and STD.

**Learning Objectives:** Understand the limits of unaided visual inspection for measuring ectopy, the complex relationship between cervical ectopy and STD, and the difficulties inherent in using cross-sectional data to attribute a causal relationship to this association.

P60

## Syphilis Non-treponemal Antibody Screening: Comparison of Reagin II EIA with TRUST

*JT McPherson, R Rumbough, J Harris, and K Meredith*

North Carolina State Laboratory of Public Health, Raleigh, NC

**Background:** In 1998, North Carolina lead the nation in syphilis cases (n=723) and reported five counties on the list of 28 reporting 50% of P&S syphilis cases in the US. Syphilis elimination efforts rely upon sensitive and accurate laboratory tests.

**Objective:** Compare two different non-treponemal screening tests.

**Methods:** Sera submitted to the NC State Laboratory of Public Health were screened with both the Organon Teknika SpiroTek Reagin II EIA and New Horizons Diagnostics Corporation TRUST (Toluidine Red Unheated Serum Test) non-treponemal assays. Discordant sera were tested in-house with the Fujirebio Serodia TP-PA and at the CDC via the FTA-ABS.

**Results:** 1200 sera were assayed in the blind by TRUST and Reagin II EIA. Among 999 TRUST negative sera, 23 were EIA repeatably reactive. Of 201 TRUST reactives, 28 were EIA negative when tested in singleton. Confirmatory tests (TP-PA and/or FTA-ABS) were performed on discordant sera. The application of confirmatory testing revealed 4 of 999 TRUST negative sera as true positives and 7 of 201 TRUST positive sera as false negative EIAs. Based on our 1999 testing statistics, we extrapolate that addition of Reagin II EIA to the laboratory armamentarium may

have detected 417 additional cases of syphilis. Similarly, use of the EIA as the only screening assay was calculated to fail to detect 108 laboratory confirmed cases.

**Conclusions:** The screening tests evaluated differ in ability to detect cases of syphilis. Further testing is warranted to elucidate their impact upon the National Syphilis Elimination Campaign.

## P61

### Molecular subtyping of *Treponema pallidum* in a County with Increasing Syphilis Morbidity using Specimens from Ulcers and Blood

*MY Sutton*<sup>1</sup>, *H Liu*<sup>1</sup>, *B Steiner*<sup>1</sup>, *A Pillay*<sup>1</sup>,  
*T Mickey*<sup>2</sup>, *L Finelli*<sup>1</sup>, *S Morse*<sup>1</sup>, *L Markowitz*<sup>1</sup>,  
*M St Louis*<sup>1</sup>

1. Centers for Disease Control and Prevention, Atlanta, Georgia,  
2. Maricopa County Department of Public Health Services,  
Phoenix, Arizona

**Background:** A molecular-based subtyping system for *Treponema pallidum* was recently developed using specimens from genital ulcers. However, ulcers are detected in only 6% of patients with diagnosed syphilis. Use of blood specimens could increase the epidemiologic use of subtyping and increase understanding of syphilis transmission patterns. This subtyping system was used to study syphilis in Maricopa County, which has had a steady increase in cases of early syphilis since 1996.

**Objective:** 1) To evaluate subtypes of *T. pallidum* among persons with infectious syphilis during an epidemic, and 2) to evaluate blood as a valid specimen for *T. pallidum* subtyping.

**Methods:** A molecular-based subtyping system for *T. pallidum* was used during an epidemiologic investigation of increasing syphilis in Maricopa County, Arizona. Genital ulcer or whole blood specimens from consenting adult patients with early syphilis seen in the local STD clinic were screened by polymerase chain reaction (PCR) amplification of a *T. pallidum* DNA polymerase I gene. Positive specimens were typed based on PCR amplification of two variable genes.

**Results:** To date, 41 (93%) of 44 ulcer specimens and 4 (27%) of 15 blood specimens from Maricopa County

have yielded typable *T. pallidum* DNA. Twenty-four (53%) specimens were subtype 14f; other subtypes identified include 4f, 4i, 5f, 12a, 12f, 14a, 14d, 14e, and 14i. Epidemiologically-linked persons identified during the investigation both had subtype 12a.

**Conclusions:** Multiple subtypes of *T. pallidum* can be found in an area with high syphilis morbidity, although one subtype (14f) was predominant. Four typable specimens were from blood, a newly identified specimen source for subtyping, which broadens opportunities for subtyping beyond the primary stage of syphilis.

## P62

### Evaluation of the Criteria for Follow-up of Reactive Serologic Tests for Syphilis – The Reactor Grid

*K Lavelle*, *M Eberhart*, *M Goldberg*, *L Asbel*,  
*R Small*

Philadelphia Department of Public Health, Philadelphia, PA

**Background and Rationale:** As part of syphilis elimination in Philadelphia, the criteria used to determine follow-up of reactive serologic tests for syphilis (i.e. the Reactor Grid) were evaluated. The Reactor Grid, a central component of syphilis surveillance, had not been evaluated or significantly changed since its inception more than 30 years ago, despite dramatic fluctuations in disease incidence during that time period.

**Objectives:** Evaluate the “sensitivity” and “specificity” of the criteria used to determine follow-up of reactive serologic tests for syphilis; develop an action plan to improve these parameters.

**Methods:** Three sets of analyses were conducted, using the database of reported STDs in Philadelphia. Analyses included (1) a retrospective analysis of all syphilis cases from 1988 to 1998; (2) a retrospective analysis of non-cases from 1991 to 1999 and (3) a prospective analysis of all reactive serologic tests reported to the STD Control Program from May 1, 1999 to May 31, 1999.

**Results:** A total of 33,949 cases of syphilis occurred from 1988 to 1998 in Philadelphia. Results indicated that approximately 8% of these cases would not have been initiated for further follow-up based on Reactor Grid criteria. Individuals 60 years of age and older with an RPR titer 1:16 were 2.8 times as likely to have

infectious syphilis than those with an RPR titer of 1.8 (p value < .01; confidence interval = 1.31 to 6.38); changes were made to the Reactor Grid to reflect this. Additional age groups were identified as requiring further follow up based on RPR titer as well.

**Conclusion:** Periodic Reactor Grid evaluation and revisions are necessary to maintain effective syphilis surveillance in an era of elimination.

## P63

### Self-Collected Vaginal Swabs vs Endocervical Swabs for the Detection of *C. trachomatis* and *N. gonorrhoeae* in Female Juvenile Detention Detainees

*D Willis*<sup>1</sup>, *K Schmitt*<sup>2</sup>, *S Crowe*<sup>1</sup>, *C Bell*<sup>3</sup>,  
*J McNeely*<sup>3</sup>

1. Florida Department of Health, Bureau of Laboratories,  
2. Florida Department of Health, Bureau of STD Control and Prevention, 3. Florida Department of Juvenile Justice

**Background:** The detection of Chlamydia trachomatis and *Neisseria gonorrhoeae* by culture, EIA and non-amplified nucleic acid methods are dependent upon clinician adherence to strict specimen collection and handling instructions. Non-amplified assays for *C. trachomatis* require sufficient columnar epithelial cells from endocervical specimens. Cultures for *N. gonorrhoeae* require incubation. Amplified methods have been demonstrated to be a more sensitive method for detecting *C. trachomatis* and *N. gonorrhoeae*.

**Objectives:** To determine how self-collected vaginal swab specimens compare to endocervical swab specimens for the detection of *C. trachomatis* and *N. gonorrhoeae* in adolescents detained in juvenile facilities.

**Methods:** Female detainees in the juvenile detention facility were given instructions for self-collecting a vaginal swab specimen. An endocervical swab specimen was also obtained from female patients who underwent a pelvic exam. Specimens were tested for *C. trachomatis* and *N. gonorrhoeae* by LCR.

**Results:** Both a self-collected vaginal swab and an endocervical swab were obtained from 14% of the

female patients screened. For *C. trachomatis* a sensitivity of 93.8% was found in the self-collected vaginal specimens versus 75% in the endocervical specimens. For *N. gonorrhoeae*, the sensitivity of the self-collected vaginal specimens was 87.5% versus 75% for the endocervical swab.

**Conclusions:** The data from self-collected vaginal swabs demonstrates an increased sensitivity when compared to endocervical swabs in detecting both *C. trachomatis* and *N. gonorrhoeae*. Self-collected vaginal swabs provide an alternative to endocervical specimens for the detection of *C. trachomatis* and *N. gonorrhoeae* in non-clinical settings or when a pelvic exam is not otherwise indicated or practicable.

**Learning Objective:** Describe differences in the sensitivity between vaginal and cervical collected specimens.

## P64

### Digene Hybrid Capture II, a New Assay for Detection of *Neisseria gonorrhoeae* and *Chlamydia trachomatis* in Men

*P Dixon*, *B Hines*, *K Smith*, and *EW Hook, III*

University of Alabama at Birmingham, Birmingham, AL

**Background:** Males are essential contributors to STD morbidity. New technologies offer both greater sensitivity for pathogen detection, and permit non-invasive specimen collection.

**Objective:** We evaluated the Digene Hybrid Capture II test (HCII) for detection of *N. gonorrhoeae* (GC) and *C. trachomatis* (CT) in 328 male STD clinic patients using two specimen types: voided urine and urethral swabs. Urine HCII test results were compared to urethral culture and to Roche COBAS (Amplicor) CT/NG PCR tests and Abbott LCR tests performed on the same urine specimens. Urethral swab HCII results were compared to Amplicor and culture of urethral swab specimens.

**Methods:** GC and CT isolation were performed using standard methods. The HCII and Amplicor assays were performed following manufacturers' instructions on urethral swabs, and on urine collected subsequent to swab specimens. LCR was also performed on urine specimens.

**Results:** Urethral swab specimens. Sensitivities for CT diagnosis were: culture 78%, HCII 90.9%, Amplicor 94.5%, and specificities were 100%, 97.4%, and 94.1% respectively. For GC diagnosis sensitivities were culture 80.2%, HCII 95.8%, Amplicor 99%, and specificities were 100%, 97%, and 98.7%, respectively. Urine specimens. Sensitivities for CT diagnosis were: culture 68%, HCII 76%, Amplicor 97.3%, LCR 96%, and specificities were 100%, 96.8%, 99.2% and 99.2%, respectively. For GC diagnosis sensitivities were: culture 76.4%, HCII 91%, Amplicor 98.9%, LCR 97.8%, and specificities were 100%, 98.6%, 99.5% and 99.1%, respectively.

**Conclusion:** Although the HCII test was less sensitive using voided urine than Amplicor or LCR, the signal amplified HCII technology offers advantages in throughput, assay format and laboratory requirements that make it an attractive alternative method for GC and CT detection.

## P65

### A National STD Health Communications Needs Assessment

*BK Kondilis, S Hornston, D Anderson*

Centers for Disease Control and Prevention, Atlanta, GA

**Background and Rationale:** In accordance with CDC's national goal for syphilis elimination, STD programs in areas of high morbidity are of top priority. A national needs assessment was conducted to examine current health communication practices and training needs of STD programs.

**Objective:** To collect information needed to train or re-train public health affiliates in order to develop or improve skills related to syphilis elimination strategies.

**Methods:** An on-line survey titled, "STD Health Communications Needs Assessment" was disseminated in collaboration with NCSA, to a convenience sample of 65 project areas.

**Results:** Between December 1999 and January 2000, a total of 67 responses was collected using the on-line survey. All High Morbidity Areas (HMAs) (48%) and Potential Re-emergence Areas (PRAs) (12%) responded, along with other non-HMAs or PRAs (34%). Eighty-three percent of respondents consider health communication important to overall program goals,

and 80% expressed a need for health communication training. Regarding overall ability to meet the agency's health communication needs, most HMAs (53%) indicated "fair/poor" ability, and most PRAs (75%) indicated "good/very good" ability. Regarding syphilis elimination, 39% thought that a CDC-sponsored advertisement campaign would best support local efforts, and 25% suggested that a CDC-created resource manual would be most useful.

**Conclusions:** Project areas consider health communication an important and necessary activity. There are differences in perceived abilities of project areas in meeting their health communication needs. Limitations on staff time, and budget allocated to health communication activities, were mentioned as obstacles. A variety of CDC created training formats to best support local syphilis elimination efforts were suggested.

**Learning Objective:** Identify health communication needs of project areas regarding syphilis elimination efforts.

## P66

### Latinos & STD Education: Bridging the Cultural and Communication Gaps

*K Scanlon, R Wilcher, S Chapman, N Singleton*

American Social Health Association, Research Triangle Park, NC

**Background:** Latinos in the United States are disproportionately affected by sexually transmitted diseases (STDs). Lack of pertinent native language materials and germane educational mediums concerning STDs keep Latinos and health care providers servicing this population at a disadvantage concerning reproductive health education. The American Social Health Association (ASHA) has cornered the market on hotline education and counseling services, community based health education programs and awareness campaigns and has recently focused on tailoring hardcopy products to the unique needs of the Latino population.

**Objective:** To isolate an effective process by which to develop and disseminate language-appropriate, culturally sensitive, and graphically appealing written STD educational materials for the Latino communities throughout the United States.

**Methods:** Key steps employed in ASHAs development of STD education materials for Latinos include internal review committees, ethnographic research, external advisory panels, formal focus groups and impromptu field-testing.

**Results:** Responses from internal and external focus and review groups will be presented. Challenges encountered and successful strategies employed for overcoming obstacles in material development will be discussed.

**Conclusions:** Each of the above mentioned methods were instrumental in developing a successful series of Spanish language educational materials.

**Learning Objectives:** Understand the need for widespread, effective and engaging Spanish language education materials concerning the prevention, detection and treatment of STDs. Describe an inclusive process by which to develop and evaluate culturally appropriate health education materials for Latino populations.

## P67

### Examine The Possibilities: San Francisco Health Department Maximizes Local Media Attention In Nightclub STD Awareness Campaign

*JT McCright<sup>1</sup>, D Louie<sup>2</sup>, E Shields<sup>1</sup>,  
MR Lee<sup>1</sup>, A Ortega<sup>1</sup>, A Snell<sup>1</sup>, J Johnson<sup>1</sup>,  
J Cordoba<sup>1</sup>, T Moore<sup>1</sup>, MR McLemore<sup>3</sup>,  
J Klausner<sup>1</sup>*

1. San Francisco Department of Public Health, San Francisco, CA,
2. KMEL-106.1, Chancellor Media Corporation, San Francisco, CA,
3. Kaiser Permanente, San Francisco, San Francisco, CA

**Background and Rationale:** Chlamydia in particular, remains a significant public health problem among adolescents and young adults in San Francisco. High rates of STDs indicate that members of this population are more likely to engage in unprotected sexual activity that can also put them at risk for HIV, and a variety of STD complications. Eight out of ten individuals will not know they are infected because they do not have any signs or symptoms. Simple non-invasive urine tests for chlamydia and gonorrhea facilitate screening in almost any setting. Although prevention efforts exist in San Francisco, further innovative risk reduction strategies must be examined. During April 2000, the

San Francisco Health Department embarked on a STD Awareness Campaign to target sexually active young adults at risk for chlamydia who frequent one of San Francisco's most popular nightclubs. Partnering with local media to obtain a full spectrum of publicity created a highly visible campaign. This workshop will examine the role of media and the establishment of other business relationships to effectively conduct a STD Awareness campaign in a nightclub setting.

**Methods:** In this participatory workshop we will identify methods of establishing relationships and gaining access to the entire media spectrum such as: internet, print, television and radio; and discuss strategies for implementing an STD Awareness campaign in a nightclub utilizing urine-based screening tests. We will also discuss the advantages and disadvantages of STD screening in nightclub settings, and describe the importance of making a small monetary investment for a high yield of publicity. The presenter will highlight programmatic issues, which include staffing, selection of venue, protocols and development of promotional materials.

#### Learning Objectives:

1. Identify ways to establish relationships and gain access to entire media spectrum.
2. Understand the advantages and disadvantages of conducting urine-based STD screening in a nightclub setting.
3. Describe the small monetary role of investing in a STD Awareness campaign to gain a high yield of publicity.

## P68

### The Response of MSM to STD Media and Internet Campaigns

*JL Simard*

Hartford Gay and Lesbian Health Collective, Hartford, CT,  
Connecticut Department of Public Health STD Control Program,  
Hartford, CT

**Background and Rationale:** The incidence of anonymous sexual contact among MSM through Internet chat rooms and "900 lines" continues to increase throughout the state of Connecticut. Level of awareness for risk of STDs in the MSM population is low.

**Objective:** To provide increased awareness of the risk of STDs among MSM who frequent Internet chat

rooms and phone sex lines through the use of gay and alternative media and the Internet.

**Methods:** Media and Internet campaigns were designed and implemented throughout Connecticut using graphic (visual) and straight-forward messaging (posters, print ads, tent cards) in bars, gay and alternative publications, and the internet, to attract attention to the fact that having unprotected sex can put MSM at risk for STDs in addition to HIV.

**Results:** A survey was conducted from May through July 1999 of 226 MSM. Participants identified as 98% gay and 2% bisexual. More than half (56%) had unprotected sex with someone they met either through an Internet chat room or a phone sex line. Of those making sexual contact through the Internet or phone sex lines (16%) were diagnosed with an STD during the previous 12 months, with Gonorrhea being the most frequent diagnosis (11%). Almost all of the 226 respondents (94%) had never been tested for STDs nor saw the need to be tested even though (74%) had received HIV counseling/testing in the previous 12 months.

**Conclusions:** The level of knowledge for risk of STDs other than HIV among MSM is poor. With the explosion of the Internet and "900 Lines" new and innovative prevention methods need to be evaluated an established to better provide MSM with the knowledge they need to make informed choices about their sexual behavior.

**Learning Objective:** Presentation of STD and Internet Campaigns and the response of MSM to the campaigns.

## P69

### Evaluating HIV/AIDS Prevention Mass Media Campaign Targeting Spanish Speaking Puerto Rican Adolescents, 1998-99

*J Molina, A Lugo, M Ayala, N Colon, S Collazo, O Lopez, J Ferrer, C Feliciano*

Puerto Rico Department of Health, San Juan, PR

**Background and Rationale:** The HIV prevention message directed to adolescents must meet with the specific educational, psychological, and social needs of this population.

**Objective:** Evaluate the 1998 HIV/AIDS Mass Media prevention campaign targeting adolescents in Puerto Rico.

**Methods:** The design of the study was based on the use of focus groups. The sample size consisted of 18 focus groups of adolescents between 12-19 years of age from the eight Health Regions of Puerto Rico. The total number of participants was 140 adolescents of both genders selected from the public school system, community based-organizations and school dropouts.

**Results:** The distribution by gender of participants was 53.6% females and 46.4% males. Of the participants, 39.2% were in junior high school and 60.7% were in high school level. The mass media preferred by the youth to receive the HIV prevention message were: TV (57.1%), radio (27.9%), newspapers (2.9%), and cinemas (5%). The TV spots were catalogued as good, because were well explained, presented high risk behavior situations, offered the options to prevent HIV infection such as the use of condoms and abstinence. The radio announcements were the favorite among the youth, followed by the TV (PA, public announcements) and the poster campaign. With regard to knowledge, participants mentioned doubts about the differences between HIV and AIDS concepts. The prevention methods mentioned by the youths were sexual and drug abstinence, use of condoms, avoid sharing syringes, getting tested for HIV, practice the monogamy and the masturbation.

**Conclusions:** Overall the mass media campaign was well accepted by the youths, because: the campaign utilized a vocabulary that youth could relate to, offered options and not mandate for them to select from as the best form for them to use to prevent HIV, including their decision to have sexual relations or not. In the knowledge area, the males indicated lack of information about the correct use of condoms. The females considered the abstinence an alternative to prevent the HIV infection. The participants recommended for future campaigns the use testimonials, partner in risk behavior situations, and use music of different rhythms.

**Learning Objectives:**

1. Measure the HIV/AIDS knowledge and prevention methods presented during the campaign in TV, Radio, Press and Posters.
2. Identify the opinion/perception about the mass media message targeting youth.

P70

## Delivery of STD Services in Medicaid Managed Care

*ER Brown, N Pourat, N Razack*

UCLA Center for Health Policy Research, Los Angeles, CA

**Background and Rationale:** The increasing numbers of Medicaid enrollees in managed care plans provides the opportunity for effective management, control, and prevention of STD among high-risk low-income populations. Little is known about the STD policies of Medicaid managed care organizations (MCOs).

**Objective:** To explore the extent to which Medicaid MCOs promote certain STD guidelines and services and to study the potential influence of health plans and medical groups on delivery of this care by primary care providers (PCP).

**Methods:** Medical directors of 21 Medicaid MCO health plans and 33 contracted medical groups in seven large US cities were interviewed about the use of explicit physician guidelines recommending the delivery of 10 specific STD services. Fifty PCPs of the same medical groups were also interviewed regarding the delivery of those STD services.

**Results:** Practices such as preventive counseling, routine treatment of chlamydia in the presence of gonorrhea, and advising patients to notify their partners were performed routinely by PCPs regardless of the presence of organizational guidelines. Practices such as chlamydia screening of sexually active adolescents, single-dose therapy for chlamydia, and treatment of partners regardless of membership or payment were less frequent and were less often recommended by MCOs and medical groups.

**Conclusions:** The clinical practices that depend solely on the PCP's initiative are routinely performed, but those dependent on economic considerations or those subject to legal liabilities were lagging behind. Lack of organizational priority to promote STD prevention and control is a major barrier. Legally binding initiatives to promote standards of STD care are needed.

**Learning Objective:** Explore the extent of the promotion of STD services by Medicaid managed care organizations in the US.

P71

## Optimal Resource Allocation for Curing Chlamydial Infection among Clients of Clinics Operating on a Fixed Budget

*G Tao<sup>1</sup>, KL Irwin<sup>1</sup>, T Gift<sup>1</sup>, CM Walsh<sup>1</sup>, WJ Kassler<sup>2</sup>*

1. Centers for Disease Control and Prevention, Atlanta, GA,

2. New Hampshire Department of Health and Human Services, Concord, NH

**Objective:** To determine the optimal chlamydia control strategy that maximizes the number of cured female clients for a given program budget.

**Methods:** We developed integer linear programming, a resource allocation model, to determine the optimal strategy using data from 2209 women screened universally for chlamydia infection in Philadelphia's publicly-funded family planning clinics. The age distribution was: <20 years (29%); 20-24 years (33%); >24 years (38%); with respective age-specific prevalence of 10.6%, 6.9%, and 2.3%. We modeled two screening (DNA probe or ligase chain reaction for cervical specimens) and two treatment (doxycycline or azithromycin) strategies. We used published ranges for public sector test and treatment costs, cured rates, and test performance. We calculated the direct medical cost per woman cured.

**Results:** Test and treatment selections were not necessarily uniform for all age groups screened. At low annual budgets of \$2950-\$3315, all women aged < 20 years could be screened, which could cure 33-41 women at a cost of \$81-\$89 per cure. At budgets of \$6250-\$14,700, all women aged < 25 years could be screened, which could cure 57-105 women at a cost of \$110-\$140 per cure. At high budgets of \$18,520-\$23,320, all women could be screened, which could cure 115-123 women at a cost of \$161-\$190 per cure.

**Conclusions:** The total cost and cost per woman cured of chlamydia screening and treatment is lower when the youngest women with the highest prevalence are targeted but it is still highly cost-effective when extended to older women with lower prevalence. Using resource allocation models enables clinic managers to identify a chlamydia control strategy that cures the most women with a fixed budget when the clinic age distribution and age-specific chlamydia prevalence are known.

**Learning Objective:** To introduce resource allocation models as new tools in clinical decision-making.

P72

## Avenues to Improve Screening Practices in Managed Care Organizations: An Analysis of the HEDIS 2000<sup>®</sup> Measure on Screening for *Chlamydia trachomatis*

*G Tao, CM Walsh, LA Anderson, KL Irwin*

Division of STD Prevention, Centers for Disease Control and Prevention

**Objective:** Annual routine screening for *Chlamydia trachomatis* is widely recommended and incorporated into HEDIS<sup>®</sup> 2000 for sexually active women aged 16-26 years. To increase these screening rates, we need to understand how to readily identify young sexually active women to improve chlamydia screening.

**Methods:** Using MarketScan claims data, we evaluated a measure of sexual activity based on the HEDIS algorithm for the denominator (claims for pap tests and pelvic examinations, contraceptive services, pregnancy-related services, and screening and treatment for STDs). We compared this measure with self-reports of sexual behavior and sexual health services from the 1995 National Survey of Family Growth.

**Results:** Fewer than half (42%) of the women classified as sexually active by their reports of sexual activity or use of sexual health services were classified as sexually active by applying the HEDIS algorithm to claims data. The HEDIS algorithm was less likely to classify adolescents than adult women as sexually active. Of women classified as sexually active by the HEDIS algorithm using claims data, 73% had a claim for pap tests or pelvic examinations.

**Conclusions:** Coupling routine chlamydia screening with routine pap tests or pelvic examinations could improve cost-effectiveness and reduce the stigma associated with screening for an STD.

### Learning Objectives:

1. To understand how the HEDIS algorithm captures the sexually active women.
2. To understand how many of sexually active women are captured by the HEDIS algorithm.
3. To understand how to improve chlamydia screening.

P73

## Predictors of STDs and Utilization of Health Department STD Clinics

*JS Leichter, ST Williams, SD Bland*

Centers for Disease Control and Prevention, Atlanta, GA

**Background:** Factors related to the acquisition of STDs and the use of public STD clinics are often only examined among high-risk groups. Fewer studies have investigated the link between attitudes, behaviors, and STDs in a general population sample. The Behavioral Risk Factor Surveillance System (BRFSS) is a population-based telephone survey designed to collect information regarding various health behaviors of adults (18 years and older), including sexual risk behavior.

**Objective:** To examine the relationship between demographics, behavioral factors, perceptions of risk, and STDs in a general population sample.

**Methods:** In 1997, 24 states and one US territory were funded to administer the Sexual Behavior Module as part of the BRFSS. Only respondents who were 18-49 years of age and reported having sexual intercourse in the past year were asked to complete the module. Items included number of sex partners, STD history, and condom use.

**Results:** 28,957 respondents completed an item on the Sexual Behavior Module that focused on treatment for an STD. The majority of respondents were female (56%), white (77%), and 30 years of age or older (71%). Three percent of the sample reported receiving treatment for an STD in the past five years. Of the 895 respondents treated for an STD, 40% received treatment at a public STD clinic. Factors related to receiving treatment for an STD include multiple sex partners, ethnic status, perceived high HIV risk, and increased risky behavior, such as driving while intoxicated.

**Conclusions:** Recent risky sexual and non-sexual behavior and perceptions of increased HIV risk predicted a history of STDs. Furthermore, a substantial minority of those who had an STD received treatment at a public STD clinic.

**Learning Objective:** Describe demographic, attitudinal, and behavioral predictors of receiving treatment for STDs, as well as seeking treatment at a public STD clinic.

P74

## Implementation of Rapid HIV Testing in a Local Health Department Sexual Health Program

*J Whetsel, M Krempasky, K Dorian, D Coleman*

Columbus Health Department, Columbus, Ohio

**Background and Rationale:** HIV testing coupled with interactive prevention counseling has been shown to reduce the risk of infection with STDs/HIV. Since a significant percentage of people testing at publicly funded testing sites do not return for their results, the CDC, recommends that rapid HIV testing be made available.

**Objective:** To evaluate the acceptance and effectiveness of offering rapid (less than an hour) HIV testing in a local health department sexual health program.

**Methods:** A survey of STD clinic and HIV counseling and testing site patients found that they would be willing to pay \$10 for a rapid HIV test versus a free EIA which necessitated returning for results in 7-10 days. New protocols were written for routine pretest counseling to include a discussion of the rapid test and what a positive result would mean. All counselors received training per CDC recommendations for rapid testing. All positive SUDS/rapid tests were followed by standard EIA Western Blot.

**Results:** A majority of STD (58%) patients, males (67%), females (58%), those under 25 (59%) and over 25 (67%) years old, and whites (71%) and blacks (47%) were willing to pay for the rapid test. From July 1999 through March 2000, 1003 patients were tested by SUDS/rapid EIA. Compared to the same period of time in 1998, number of patients testing increased by 10% and the number actually receiving HIV results increased by 17%.

**Conclusions:** Rapid HIV testing was found to be readily accepted by our clients. The percentage of patients testing/receiving results increased.

**Learning Objective:** Understand the benefits of making rapid HIV testing available to STD Clinic and CTS patients.

P75

## Sexually Transmitted Disease Needs Assessment and Statewide Plan

*EK Collison, JM DeBoer, J Witson*

AIDS/STD Prevention Services Section, Minnesota Department of Health, Minneapolis, MN

**Background:** In 1998, the State Legislature appropriated funds to the Minnesota Department of Health (MDH) to conduct a statewide STD prevention and services needs assessment and to develop a plan for reducing STD infections and increasing access to treatment.

**Objectives:** To assess need statewide in the areas of local public health, availability of medical services, medical providers' knowledge and practices, youth knowledge and behaviors, and laboratory services. To develop a comprehensive statewide plan to address STDs in Minnesota, using the results of the needs assessment.

**Methods:** Methods included surveys of local public health agencies, youth, diagnostic laboratories, and physicians. MDH also contracted for an STD needs assessment of African American youth in several communities in Minneapolis with high rates of STDs; and with the local STD hotline to evaluate public awareness needs regarding STDs in rural Minnesota. MDH staff drafted a Plan based on the needs assessment, soliciting input and feedback from over 100 external stakeholders through a series of informational meetings and mailings.

**Results:** A comprehensive plan to address STDs in Minnesota. This Plan serves to guide program decision-making and also serves as the basis for securing additional funds. The Plan is organized around three central vision statements: 1) To develop a statewide foundation of STD related infrastructure; 2) To eliminate population disparities in STD prevalence/incidence; and 3) To develop and maintain enhanced information systems.

**Conclusions:** Process used to develop Plan was successful in identifying community-validated, priority STD prevention and services needs in Minnesota. In addition, ongoing reference and use of the Plan serves to increase awareness and spur action to address STDs.

P76

## Improving Access to STD Services in a North Carolina City: Lessons Learned from the Outreach Process

*CL Ford*<sup>1</sup>, *EC Tilson*<sup>1</sup>, *M Smurzynski*<sup>1</sup>,  
*KK Fox*<sup>1,2</sup>, *PA Leone*<sup>1,3</sup> and *WC Miller*<sup>1</sup>

1. University of North Carolina, Chapel Hill, NC, 2. Centers for Disease Control and Prevention, Raleigh, NC, 3. Wake County Human Services, Raleigh, NC

**Background:** STDs are associated with increased risk of HIV transmission and increased susceptibility to HIV infection. Programs to improve or target STD services for high-risk persons in a community may reduce transmission of HIV. Community level factors may serve as barriers to STD testing and treatment. Understanding the community role in testing and treatment of STDs is an important step in improving STD and HIV services.

**Objectives:** We sought to establish links with community-based organizations and key community members in order to identify barriers to STD care in the surrounding community. In addition, we planned to work with community members to establish innovative ways to improve access to care.

**Methods:** Using a three-tiered model, we worked through existing organizational hierarchies to identify appropriate agencies, community-based organizations, and individuals. Interviews were conducted with managerial and administrative personnel, health educators, outreach workers, and community members.

**Results:** Initial links were established with more than fifteen organizations. Of these, seven were identified as potential collaborators for increased STD/HIV education outreach and provision of HIV and/or STD screening at non-traditional test sites. Key lessons from the outreach process include: the importance of sustained visibility in the community, the need to address distrust of research, the value of sharing decision-making with community members, and the challenges of organizational restructuring.

**Conclusions:** With some limitations, working through existing organizations is a useful strategy for establishing connections with community. The outreach process should emphasize mutually respectful goals that serve both the objectives of the research project and also reflect concerns of the community. Attention to

relevant political and social considerations in the community is necessary for a successful outreach process.

### Learning Objectives:

1. Identify useful strategies for identifying key informants.
2. Identify concerns that community members may have about participating in the project.

P77

## A Cost Effectiveness Analysis of Screening Asymptomatic Men for *Chlamydia trachomatis* to Prevent PID in Women

*T Gift*<sup>1</sup>, *J Schillinger*<sup>1</sup>, *J Ellen*<sup>2</sup>, *C Rietmeijer*<sup>3</sup>,  
*C Kent*<sup>4</sup>, *J Klausner*<sup>4</sup>, *J Douglas*<sup>3</sup>, *C Gaydos*<sup>2</sup>,  
*L Markowitz*<sup>1</sup>

1. Division of STD Prevention, CDC, Atlanta, GA, 2. Johns Hopkins University School of Medicine, Baltimore, MD, 3. Denver Public Health Department, 4. STD Prevention and Control Services, San Francisco, CA

**Background:** Screening asymptomatic men for *Chlamydia trachomatis* using urine testing may be expected to reduce chlamydial infection in men. However, whether such a strategy is a cost effective way to reduce sequelae among women has not been extensively studied.

**Objective:** To compare the cost effectiveness of two male screening strategies to prevent PID in female sex partners using a health care system perspective.

**Methods:** We used a decision analysis to model the incidence and direct medical cost of PID among past and future sex partners of infected men. Models with partner notification and treatment (PN) were compared to models without PN. Variable values were obtained from published reports. Sensitivity analyses were performed on all variables. High (\$3000) and low (\$1193) estimates of the direct medical cost per case of PID were considered, as were high (\$50) and low (\$20) estimates of PN cost.

**Results:** The estimated reduction in PID cases among men's future partners was larger than the reduction in PID cases among men's past partners that were identified and treated through PN. Compared to no screening, a male screening strategy without PN was either cost saving (using high PID cost) or cost neutral

(using low PID cost). A male screening strategy which included PN was cost saving compared to no screening using either the high PID or low PN cost estimates, and was cost saving compared to screening men without PN using the low PN cost estimate.

**Conclusions:** This analysis indicates that screening asymptomatic men for chlamydia can be a cost effective approach to preventing PID in their female sex partners. Adding PN increases the number of PID cases averted and can be cost effective.

**Learning Objective:** Identify key factors, which determine conditions under which screening men for *C. trachomatis* may be a cost effective way to prevent infection and sequelae in women.

## P78

### Community Based STD Testing: Expanding Access to Care

*C Moseley, P Stevens, R Gibbs*

Guilford County Department of Public Health, Greensboro, NC

**Background and Rationale:** Guilford County, North Carolina has been experiencing epidemic levels of syphilis and high rates of HIV. However, Guilford County experienced a 42% decline in syphilis cases in 1999. Guilford County's Non-Traditional Site (NTS) Testing Program has greatly contributed to the decline of syphilis.

**Objective:** To increase access to HIV and syphilis testing for high risk underserved populations in Guilford County.

**Methods:** The NTS Program has two parts: 1) HIV and syphilis prevention counseling and testing are conducted at 4 fixed sites in the county. 2) The same services are offered as special events in neighborhoods and bars. At least 12 of these special events are conducted throughout the year in collaboration with local CBOs, many times on weekends. Extensive outreach is conducted by CBOs prior to the events to ensure participation.

**Results:** Between 1997-1998, NTS served a total of 1,185 people; 5% were syphilis positive and 2% were HIV positive. Between 1998-1999, the number of NTS attendees increased to 1,474. The number of syphilis positives decreased to 2% and the number of HIV

positives decreased to 1%. Fifteen percent of clients who filled out the satisfaction survey indicated they would not seek testing services if the NTS site or event was not available.

**Conclusions:** Eliminating syphilis means merging STD and HIV testing and taking it into the communities that are the most affected and the least likely to seek care.

**Learning Objective:** Describe innovative ways to combine STD and HIV services and increase access to STD screening.

## P79

### Contracting: STD Clinical and Laboratory Services

*S Arrowsmith, M Patrick*

Pennsylvania Department of Health, Harrisburg, PA

**Background:** The PA Department of Health uses contracts to provide services that are typically provided by government-operated facilities. Approximately 98% of the STD lab specimens for gonorrhea, chlamydia, syphilis and PAP smears are contracted to private labs for interpretation. Non-profit or private providers through contracts provide 67 of the 86 STD clinics.

**Objective:** Provide an overview of Pennsylvania's STD programmatic operations for outsourcing of STD services.

**Methods:** This poster session will describe the different types of contracts utilized by the PA Department of Health, outline the process for contracting including invitations to bid and requests for proposals, provide examples of contracts and quality assurance tools.

**Results:** Contracting STD clinical care allows the STD Program to provide free comprehensive STD services in identified areas of need. Through the bid process the department purchases laboratory test interpretations at a competitive price. The session will also focus on the success of the contracting process, outline the barriers, hurdles and resolutions to providing STD clinical care through contracts.

**Conclusions:** Contracting is an effective method of buying products, contracting for laboratory services,

STD clinic services and partner prevention. Contracts must have a strong quality assurance component for contractual compliance.

## P80 Geographic Access to STD Services

*DS LaMontagne*<sup>1,3</sup>, *LE Cochran*<sup>2</sup>, *MR Aubin*<sup>2</sup>

1. Center for Health Training, Seattle, WA, 2. Washington State Department of Health, Olympia, WA, 3. Formerly of the Washington State Department of Health, Olympia, WA

**Background:** As local health jurisdictions in Washington State move from providing STD services via categorically funded STD clinics to other providers, it is important to ascertain the proximity of STD patients to care facilities. Geographic availability of health services can be better understood through application of geographic information systems (GIS) technology.

**Methods:** Cases of STD from providers who reported at least 50 cases in 1997 and 1998 were mapped using Maptitude 3.0g. Reported cases were plotted using 1995 TIGER and Zip Code Inventory files. A service radius of seven miles was over-layed onto the location of the provider. The proportion of cases in each county represented by core providers and the proportion of each provider's cases within the seven-mile geographic access radius were assessed.

**Results:** Cases from STD clinics clustered in close proximity of the facility and cases from other providers, e.g. community clinics, family planning clinics, etc., were more geographically dispersed. In 1997, 50-75% of STD cases reported from 90% (18/20) of STD clinics and 61% (30/49) of other clinics lived within seven miles of the clinic. In 1998, 50-75% of STD cases reported from 94% (17/18) of STD clinics and 76% (38/50) of other clinics lived within seven miles of the clinic.

**Conclusions:** Access to STD care was not impeded by geographic distance from the clinic in most facilities, regardless of the absence of a public STD clinic. However, cases at STD clinics were more likely to live within close proximity to the facility, suggesting a smaller catchment area for these types of clinics.

## P81 Validation and Feasibility of Data Collection for the Health Plan Employer Data and Information Set (HEDIS) Performance Measure on Chlamydia Screening in a Mixed Model Managed Care Organization (MCO)

*F Wei*<sup>1</sup>, *C Walsh*<sup>2</sup>

1. HealthPartners Research Foundation, Minneapolis, MN, 2. Health Services Research and Evaluation Branch, Division of STD Prevention, Centers for Disease Control and Prevention, Atlanta, GA

**Background:** A new HEDIS measure calculates the percentage of sexually active women ages 15 to 25 that are screened annually for Chlamydia trachomatis (Chlamydia) using available administrative data. The measure calculates the number of Chlamydia tests among women defined as sexually active, i.e., provision of Pap smears, STD or pregnancy services, or contraceptive prescription in the last year.

**Objectives:** 1) To determine the validity and feasibility of calculating the measure using available administrative data from staff and network MCO models, i.e., ICD-9 diagnosis, CPT-4 procedures, and centralized, electronic pharmacy and laboratory data; 2) to determine if measurement varied between models; 3) to evaluate how accurately these codes identified sexual activity.

**Methods:** We conducted a retrospective review of ICD-9, CPT-4, pharmacy and laboratory data in staff and network clinics in 1998, and reviewed medical charts to validate sexual activity and Chlamydia testing history. Pharmacy and laboratory data were available only in the staff model.

**Results:** Fewer than 25% of women having medical record evidence of a Chlamydia test had corresponding CPT codes. Electronic laboratory data identified a Chlamydia test from 2-5 times more frequently than CPT codes alone. Because of access to electronic laboratory data, the staff model identified a higher percentage of tested women than the network model. Pharmacy or laboratory data only slightly increased the number of women classified as sexually active.

**Conclusions:** MCOs lacking access to centralized, electronic laboratory data may have spuriously low testing rates on the HEDIS measure because using CPT codes alone to identify Chlamydia tests underestimates the true number of women tested. Rates of sexual activity in the staff and network models varied only slightly.

## P82

### Mission Possible 3: Managed Care Organizations (MCO) and Public Health Partnerships

*C Walsh, R Neiman, H Bauer, J Chow, MK Oh, D Grimley, R Jeanette, K Irwin*

Centers for Disease Control and Prevention, Atlanta, GA

**Background:** A new MCO performance measure (HEDIS) for *Chlamydia trachomatis* (Chlamydia) makes Chlamydia screening a natural focal point for collaboration between MCOs and public STD programs. While one study found that encouraging Chlamydia screening in asymptomatic female enrollees of a staff model HMO dramatically reduced pelvic inflammatory disease incidence, little is known about the acceptability and feasibility of newsletters to encourage Chlamydia screening in MCO populations.

**Objective:** To identify factors critical to the design and delivery of newsletters to enrollees of diverse MCOs to encourage Chlamydia screening of asymptomatic women.

**Methods:** Three public health programs collaborated with staff, network and Medicaid MCOs to design, test and deliver newsletters to encourage asymptomatic adolescents and young adults to seek chlamydia screening.

**Results:** Several factors facilitated the acceptance, design and delivery of these outreach tools: 1) Buy-in and leadership of top managers in MCOs and public health programs, and organizational stability and structure (e.g., lack of MCO mergers; existing administrative capacity for undertaking outreach) facilitated both the partnership and the product. 2) Focus groups with teens and parent enrollees to evaluate acceptability of materials demonstrated support. These data helped overcome initial resistance about the negative stigma of STDs among MCO providers and managers. 3) Integrating Ct screening messages with health issues relevant to young adults

(e.g., sports injuries, skin care) improved newsletter acceptability to MCO managers and enrollees, especially adolescents who may not want to disclose sexual activity to parents.

**Conclusions:** Newsletters can be used to deliver sensitive STD prevention messages to diverse MCO populations. Outreach efforts are enhanced by strong leadership in MCOs and public health, organizational depth and sensitivity to the potentially stigmatizing nature of STDs.

## P83

### Trends in the Utilization of the Los Angeles County Public Health STD Clinics

*D Kodagoda, R Zweig, G Goldenfeld, I Dyer*

Los Angeles County Department of Health Services

**Background and Rationale:** Since Los Angeles County (LAC) Department of Health Services underwent a budget cut and restructuring in 1995, reducing the number of STD clinics by more than 50%, the clinics have been forced to refocus their clinical service efforts as patients shift to using managed care organizations.

**Objective:** In order to assess whether the sociodemographic characteristics and STD diagnoses of individuals seeking public STD clinic care since the restructuring have changed, the LAC STD Program has implemented periodic cross-sectional chart review.

**Methods:** Mantel Haenszel chi square trend-analysis of patient characteristics was conducted using data abstracted from STD Clinic charts during 1995, 1996, and 1999. Charts were analyzed from the first 25 patients seen by a clinician the first week of 4 consecutive months. The analysis was subsequently weighted to account for variable population sizes among the clinics.

**Results:** 1,929, 1,054, and 1,232 charts were analyzed in 1995, 1996, and 1999, respectively; STD clinic utilization since 1995 by 15-24 year old Whites has shown a 10-fold increase ( $p < .01$ ) while usage by Hispanics and Blacks has declined (9.1% and 19.2%, respectively); utilization by the 40 and older age group has increased by 29.8% since 1995, with syphilis as the primary diagnosis; and bacterial vaginosis, chlamydia,

and herpes were the most commonly diagnosed conditions in the clinics in 1999 with chlamydia and herpes morbidity increasing the most since 1995 (30.1%  $p=.06$ , 31.2%  $p<.01$ , respectively).

**Conclusions:** STD services must be more effectively tailored with an awareness of the changing patterns of clientele (i.e., enhanced clinician training) since the advent of partnerships with private providers and the subsequent shift in populations accessing public clinics.

**Learning Objectives:** Describe one characteristic of patients accessing Los Angeles County STD Clinics that has changed since the DHS restructuring.

## P84

### Evaluation of Screening Coverage for Chlamydia using Claims Data from a State-funded Family Planning Program

*JM Chow<sup>1</sup>, E Broyles<sup>2</sup>, GA Bolan<sup>1</sup>, J Treat<sup>3</sup>*

1. CA Department of Health Services, STD Control Branch, Berkeley, 2. University of California, San Francisco, Dept of Obstetrics and Gynecology, 3. CA DHS Office of Family Planning

**Background and Rationale:** A key component of reproductive health care services at family planning (FP) clinics includes screening for STDs. The 1998 CDC STD Guidelines recommend annual chlamydia screening of adolescents and young adults (20-24 years) with risk factors. Evaluation of chlamydia screening coverage across FP programs may be limited by lack of standardized data sources for services provided and the population served.

**Methods:** Claims data from a large state-funded family planning program for females at 200% of poverty level were analyzed for chlamydia test (CPT-4 procedure codes for amplified and non-amplified nucleic acid assay, enzyme immunoassay, direct fluorescent antibody and culture) and clinical service utilization (E & M code) by age group. Chart review data for a sample of clients was also reviewed for CT prevalence.

**Results:** Claims data were analyzed for 873,711 female clients who were served during FY 98/99. The chlamydia screening coverage rate for clients less than 25 years was 45% and the CT prevalence in this group was 5.9%. The screening coverage rate for clients 25 and older was 42% and the CT prevalence was 2.7%.

**Conclusions:** The chlamydia screening coverage rate for younger versus older clients was not significantly different and yet the CT prevalence was significantly lower in the older clients. These results suggest that chlamydia screening may be more efficiently employed in the younger age groups to detect chlamydia infections in the family planning setting.

## P85

### North Carolina VOICES: Using Qualitative Data for STD Program Planning

*BC Wilson<sup>1</sup>, J Scott<sup>1</sup>, J Owen-O'Dowd<sup>2</sup>, E Foust<sup>2</sup>*

1. Centers for Disease Control and Prevention, Atlanta, GA, 2. North Carolina Department of Health and Human Services, Raleigh, NC

**Background and Rationale:** Despite significant reductions in the incidence of syphilis, North Carolina remains a national leader in new syphilis cases. In 1998, North Carolina ranked first in the nation in the number of primary and secondary syphilis cases, and fifth nationwide in the primary and secondary syphilis rate. Beyond anecdotal information, very little data has been collected to document knowledge, attitudes and behaviors that contribute to high syphilis rates in the state. Therefore, a series of rapid ethnographic community assessments were conducted throughout North Carolina to gather qualitative data, which would be used to enhance and guide syphilis elimination efforts.

**Objective:** To identify social and behavioral risk factors for syphilis and to learn more about high-risk populations in North Carolina to assist with program planning.

**Methods:** Community assessments, consisting of qualitative, semi-structured interviews, were completed in seven North Carolina counties with high syphilis morbidity. Respondents included community members residing in high morbidity areas and service providers working in the communities.

**Results:** Between January 1998 and June 2000, 80 service providers and 216 community members were interviewed. These assessments have yielded a profile of the local populations at high-risk for syphilis, local factors contributing to syphilis transmission, and local barriers to and facilitators of syphilis diagnosis,

treatment and prevention. Typically, responses showed that disease awareness and knowledge of syphilis symptoms throughout the state are poor. In addition, community members incorporate risk reduction practices, such as condom use, inconsistently and are generally misinformed about the importance of good hygiene and the benefit of using over-the-counter medications in preventing syphilis.

**Conclusions:** Using qualitative data, which describes social and behavioral risks for syphilis infection, is a useful tool for learning more about high-risk populations, and applying the data is an important strategy for program planning and intervention development.

**Learning Objective:** Identify methods for applying qualitative, community assessment data to shape local syphilis elimination efforts and to guide program planning and implementation.

## P86

### Gonorrhea and Chlamydia Urine Screening Among High Risk Youth Age 15–24 in Delaware

*F Bailey, K Long, K McKeefery, K O'Connor*

Division of Public Health, HIV/STD Program, Dover, DE

**Background and Rationale:** The Delaware Division of Public Health's STD/HIV Prevention Program is committed to eliminating racial, ethnic, and age disparities in rates of Sexually Transmitted Disease in our State. STD's in Delaware affect mostly adolescents and young adults between the ages of 15-24. Minorities, especially African Americans, are disproportionately affected by STDs.

**Objective:** To establish an acceptable, efficient and effective Gonorrhea and Chlamydia Urine Screening Program for high risk underserved populations.

**Methods:** Community Based Organizations, School Based Wellness Centers, and a Juvenile Detention Center that serve the high risk underserved youth population are recruited to participate in this survey and to provide urine screening for both Gonorrhea and Chlamydia.

**Results:** Between September 1999 to May 1, 2000, twenty-two high school based wellness centers tested youth between the ages of 12 and 19. 812 students

were tested for Gonorrhea and Chlamydia using LCx urine testing methodology. 102 of 812 (13%) tested positive for Chlamydia. 34 of 812 (4%) tested positive for Gonorrhea. 609 of 812 (75%) were tested for screening purposes. Of the 609 tested 11% (N=68) tested positive for Chlamydia and 2% (N=12) tested positive for Gonorrhea.

**Conclusions:** Gonorrhea and Chlamydia are most prevalent in the African American populations between the ages of 15 and 24.

**Learning Objective:** This program has assisted our state in efforts to determine the level of disease in high-risk populations; gather critical behavioral data on individuals and develop a working partnership with non-traditional public health providers in an effort to ultimately improve and enhance our STD prevention efforts overall.

## P87

### Prevalence of Asymptomatic Chlamydia Infection Among Women Under 19 Requesting Urine Pregnancy Testing in Family Planning Clinics

*B Butler<sup>1</sup>, R Berman<sup>1</sup>, S Arrowsmith<sup>1</sup>, B Johnson<sup>2</sup>, C Johndrow<sup>3</sup>, M Frost<sup>4</sup>, R Cunningham<sup>5</sup>*

1. Pennsylvania Department of Health, Harrisburg PA, 2. Family Health Council, Inc, Pittsburgh PA, 3. Family Health Council of Central PA, Camp Hill, PA, 4. Family Planning Council, Philadelphia, PA, 5. Maternal and Family Health Services, Wilkes-Barre, PA

**Background and Rationale:** A CDC Infertility Prevention Project Innovation Quality Expansion Award was awarded to the Pennsylvania Department of Health STD Program to screen young women who are not receiving pelvic exams and attending family planning clinics for the sole purpose of urine pregnancy testing. Young women 19 and under have a higher prevalence chlamydia and if attending a clinic for the sole purpose of pregnancy screening they are at increased risk for chlamydia because of unprotected sex.

**Objectives:** To determine the chlamydia prevalence and additional risk factors of asymptomatic infection

among young women attending family planning clinics for the sole purpose of urine pregnancy testing.

**Methods:** Young women 19 and under attending 17 selected family planning clinics for the sole purpose of pregnancy testing were offered free urine LCR chlamydia screening and asked to complete an anonymous questionnaire regarding their sexual history.

**Results:** 541 urine LCR chlamydia tests were performed on young women 19 and under with a prevalence of 11.6%. The percentage of first coitus ages 15 and under was 69.39%; the chlamydia prevalence in this group was 12.4%. The chlamydia prevalence for those testing positive for pregnancy was 10.0% (38.3% of the young women screened tested positive for pregnancy). The chlamydia prevalence among those with previous STDs was 10.6% (17.3% of the young women screened reported prior STDs).

**Conclusions:** Pregnancy testing provides a worthwhile opportunity to detect asymptomatic chlamydia infection among sexually active young women.

## P88 Gonorrhea Outbreak in Waterville, Maine 1999: Traditional Shoe-Leather Epidemiology

*SJ Shapiro, A Wheeler, P Kuehnert*

Maine Bureau of Health, Division of Disease Control,  
Augusta, Maine

**Background and Rationale:** Gonorrhea in the state of Maine has recently been characterized as isolated occurrences of disease with little or no evidence of transmission within social networks. An outbreak provided an opportunity to apply traditional prevention methods in a low morbidity area and contain it quickly.

**Objective:** To describe the investigation of an outbreak of gonorrhea in a small urban area in Maine and compare it to other areas.

**Methods:** Traditional STD partner notification methods were used to identify, locate, examine, treat, and counsel persons at risk for gonococcal infection during this outbreak. Epi-Info 6 was used to perform the statistical analyses.

**Results:** From mid-August through October 1999, 16 confirmed cases of gonorrhea were diagnosed in the Waterville area. 13 were linked using traditional STD investigative methods. 19 additional partners were identified and 14 were treated. 31 (89%) of the 35 persons investigated were aged 25 years old or younger. Odds ratios comparing Waterville to other areas of Maine for the calendar year 1999 ranged from 2.11 to 13.16 with MH chi-square p-values ranging from 0 to 0.036.

**Conclusions:** The Waterville area experienced an outbreak of gonorrhea during 1999. A total of 13 confirmed cases were linked epidemiologically; 3 additional persons linked to this outbreak were, in all likelihood, infected with gonorrhea. The rapid intervention of the Maine STD control program prevented any further spread of gonorrhea in this highly susceptible population. Traditional STD activities must be maintained and supported, even in areas of low morbidity.

## P89 Chlamydia Control through Innovative and Comprehensive Screening, San Francisco

*J Klausner<sup>1</sup>, C Kent<sup>1</sup>, R Kohn<sup>1</sup>, L Fisher<sup>1</sup>,  
J McCright, A Williams<sup>1</sup>, S Liska<sup>2</sup>, W Wolf<sup>1</sup>*

1. STD Prevention and Control Services, 2. Public Health  
Laboratory, San Francisco Department of Public Health,  
California

**Background:** Case-identification through targeted population-based screening has become a mainstay of chlamydia control efforts. In 1999, SFDPH conducted over 32,000 chlamydia tests among San Francisco residents (pop. 750,000).

**Objective:** To describe key characteristics of various screening programs in San Francisco.

**Methods:** We reviewed memoranda of understanding, screening protocols, demographics and chlamydia positivity from management files and the county morbidity database for 30 DPH supported screening sites. Chlamydia testing was done using nucleic acid amplification assays at the DPH laboratory. We described the history of the DPH and screening site relationship, characteristics of screening sites and the population screened.

**Results:** In 1999 most sites screened all women under the age of 25 years for chlamydia. Several sites such as the STD clinic, detention facilities, schools, outreach activities and sex worker clinic screened all men and women. The number of persons tested for chlamydia at various sites was: STD clinic 10,065; adult jails 7869; youth detention facilities 2226; teen clinics 1107; health clinics 8925; emergency room 110; high schools 617; colleges 421; sex clubs 145; street fairs 75; street-based outreach 995; day laborer 58; and sex worker clinic 68. Positivity ranged from 0 at street fairs and among day laborers to 10.2% among women in youth detention facilities. Correlates of chlamydial infection included female sex and younger age.

**Conclusions:** Screening programs across different target populations are feasible and useful to identify cases of disease. Resources could be further targeted to screen populations with the highest chlamydia positivity by age and sex site-specific criteria. It remains to be demonstrated whether extensive population-based screening alone can reduce the population burden of disease.

## P90

### Phthirus pubis as a Predictor for Gonorrhea and Chlamydia Infections in Adolescents

*JL Pierzchalski<sup>1</sup>, DA Bretl<sup>2</sup>, SC Matson<sup>1</sup>*

1. Milwaukee Adolescent Health Program, Medical College of Wisconsin, Milwaukee, Wisconsin, 2. Children's Hospital of Wisconsin, Milwaukee, Wisconsin

**Background and Rationale:** Many adolescents examined at a juvenile detention center (JDC) have been diagnosed with Phthirus pubis. Prior studies have demonstrated a significant incidence of concurrent sexually transmitted infections (STIs) in adults diagnosed with pubic lice.

**Objective:** To ascertain if *P. pubis* infection is a predictor for coexisting gonorrhea or chlamydia infections in adolescents.

**Methods:** This was a retrospective chart review. Subjects were adolescents examined at a JDC between July 1998 and June 2000. The index group included 62 adolescents with *P. pubis* and subsequently screened for STIs. Controls included 201 randomly selected adolescents without lice who underwent STI screening.

All subjects were examined and screened for gonorrhea and chlamydia.

**Results:** Subjects' average age was  $15.9 \pm 1.0$  yrs. Most subjects (83%) were male and were African American (84%), Caucasian (10%), and Hispanic (5%). Common symptoms at evaluation included urethral discharge (14%), dysuria (7%), and pubic itching (8%). There were 61 (23%) cases of chlamydia and 29 (11%) cases of gonorrhea. Of subjects diagnosed with pubic lice, 39% had chlamydia and 17% had gonorrhea compared with 18% and 9% respectively in subjects without lice. Pubic lice on exam were found to be a predictor of infection with *Chlamydia trachomatis* (Odds ratio 2.86, 95% CI=1.47-5.53). Logistic regression revealed that pubic lice infection ( $p < 0.018$ ), gonorrhea ( $p = 0.0$ ), and being female ( $p < 0.007$ ) predicted chlamydia infection.

**Conclusions:** Adolescents with *P. pubis* are significantly more likely to be infected with *C. trachomatis* than those without lice. Adolescents with pubic lice on examination should be screened for chlamydia and gonorrhea.

## P91

### Age-Specific Prevalence of *Chlamydia trachomatis* by Clinical Findings and Exposure Among Males at STD Clinics, Region X, 1997-1999 – Screening Implications

*DS LaMontagne<sup>1</sup>, DN Fine<sup>1</sup>, JM Marrazzo<sup>2</sup>*

1. Center for Health Training, Seattle, WA, 2. University of Washington, Seattle, WA

**Background:** The epidemiology of *Chlamydia trachomatis* infection in males, especially asymptomatic, non-contact males, is not well defined.

**Objective:** To assess age-specific CT prevalence among four groups of men screened at STD clinics in Washington, Oregon, Idaho, and Alaska.

**Methods:** Analyzing universal male screening data from 1997-1999 at 107 STD clinics (N = 43,094), we assessed age-specific CT prevalence for four groups: 1) asymptomatic, non-contact; 2) asymptomatic, contact; 3) symptomatic, non-contact; and

4) symptomatic, contact, defined as follows: asymptomatic—clinical findings indicative of CT absent or ill-defined; symptomatic—NGU, urethritis, or epididymitis on exam; non-contact—no exposure to CT, GC, NGU, or MPC or ill-defined exposure; contact—known exposure to CT, GC, NGU, or MPC. 16% of records (n = 6,926) were excluded for unknown, inconsistent, or missing data for clinical findings, exposures, and test result.

**Results:** Among 36,168 records, overall CT prevalence was 10.3%. CT prevalence within groups was 3.4% (834/24,337) among asymptomatic, non-contact males; 22.0% (736/3,338) among asymptomatic, contact males; 20.4% (1,448/7,098) among symptomatic, non-contact males; and 50.8% (709/1,395) among symptomatic, contact males. In all groups, highest prevalence was among 18-19 year old males and lowest prevalence was among those over 29. Among asymptomatic, non-contact males, age-specific prevalence was 6.1% for under 18 year olds, 7.3% among 18-19, 4.8% among 20-24, 3.2% among 25-29, and 1.6% for those over 29.

**Conclusions:** As has been previously found among women, chlamydia prevalence in men is highest among older adolescents regardless of clinical findings and exposure. Given the low prevalence of CT in asymptomatic, non-contact males, especially those over the age of 29, implementation of selective screening in this group may increase efficient allocation of scarce resources.

## P92

### An Investigation of Rectal Gonorrhea among Men who have Sex with Men in San Francisco, 2000

*A Kim, C Kent, J Klausner*

Department of Public Health, San Francisco, CA

**Background:** Reports suggest increases in unsafe sexual behavior among men who have sex with men (MSM) in San Francisco. Recent increases in male rectal gonorrhea (RGC) incidence point to a potential resurgence of HIV transmission among MSM.

**Objective:** To identify risk factors for male RGC in San Francisco.

**Methods:** An ongoing case control study conducted at San Francisco's municipal STD clinic aims to assess risk factors for male RGC. A self-administered survey was distributed to male clients undergoing screening for RGC, of which 40 cases and 120 controls will be analyzed.

**Results:** Of the 19 case surveys collected to date, the majority were White (63%), college educated (58%), and residents of San Francisco for 5 years or less (69%). Nearly half were HIV-positive (44%). Data suggest that unprotected sex was not negatively influenced by the availability of HAART, PEP, and HIV vaccine trials. However, a substantial proportion were tired of hearing safe sex messages (41%). Compared to their RGC negative counterparts (n=100), RGC positives were more likely to be Latino [OR=2.3 (0.8-6.9)], HIV-positive [OR=4.4 (1.4-13.7)], and know their partner's HIV serostatus [OR=3.4 (0.7-15.6)]. A significant difference was noted in anonymous sex practices both as a bottom (receptive partner) [OR=5.2 (2.0-13.9)] and as a top (insertive partner) [OR=3.2 (1.2-8.5)]. Moreover, RGC positives were more likely to have met their partners through anonymous venues including the Internet [OR=7.0 (2.3-20.8)] and bathhouses [OR=3.5 (1.1-11.9)].

**Conclusions:** The data suggest that rectal GC is significantly associated to patterns of anonymous sex among HIV infected MSM. Results may highlight the need to develop new prevention methods to reach MSM.

**Learning Objectives:** To describe biological and behavioral risk factors of rectal gonorrhea among MSM in San Francisco.

## P93

### Seroprevalence of Herpes Simplex Virus Type 1 and Type 2 among Reproductive Aged Women in the United States, 1988-1994

*F Xu, M Sternberg, J Schillinger, G McQuillan, L Markowitz*

Centers for Disease Control and Prevention, Atlanta, GA

**Background:** Maternal herpes simplex virus infection with either type 1 (HSV-1) or type 2 (HSV-2) can cause serious complications in neonates. Preexisting HSV-1 or 2 antibody appears to reduce the likelihood of

neonatal infection if HSV of the other type is acquired during gestation.

**Objectives:** To describe seroprevalence of HSV-1 and HSV-2 among U.S. women of reproductive age and to identify populations potentially at high risk for having an infant with neonatal herpes.

**Methods:** Serum samples from 4,173 women (ages 15-44 years) collected during the National Health and Nutrition Examination Surveys (NHANES) III were assayed for antibodies to HSV-1 and HSV-2. Purified glycoproteins gG-1 and gG-2, respectively were used as the type-specific antigen.

**Results:** HSV-1 seroprevalence was 50% in 15-19 year olds, 62% in 20-29 year olds, 70% in 30-39 year olds, and 73% in 40-44 year olds. In the same age groups HSV-2 seroprevalence was 7%, 22%, 31% and 35%, respectively. About 58% of non-Hispanic white women entering reproductive age were negative for both HSV-1 and HSV-2, compared with only 31% of non-Hispanic black women. After adjusting for age, non-Hispanic white women were more likely to be negative for HSV-1 (odds ratio (OR) = 2.2, 95% confidence interval (CI) = 1.7, 2.8) and HSV-2 (OR = 4.8, 95% CI = 3.9, 5.9) when compared with non-Hispanic black women.

**Conclusions:** Younger women and non-Hispanic white women are more likely to be seronegative for HSV-1 and HSV-2, and thus, could be at higher risk for acquiring HSV during pregnancy; babies born to these women may be at higher risk for neonatal herpes.

**Learning Objective:** Estimate the seroprevalence of herpes simplex virus type 1, type 2, and coinfection in reproductive aged women in the U.S. and describe demographic differences in herpes seroprevalence.

## P94

### Getting the 411 on Herpes: Caller Profiles and Concerns on a National Herpes Hotline

*L Jolley, CW Ebel, M Herndon*

American Social Health Association, Research Triangle Park, NC

**Background and Rationale:** The potential use of serologic screening tests for genital herpes (GH) raises the likelihood of increased numbers of GH diagnoses

as well as concerns about the impact of these diagnoses on asymptomatic persons. In assessing this impact, the experience of the National Herpes Hotline in answering consumer questions may be instructive.

**Objective:** To profile callers to the National Herpes Hotline (NHH) and identify topics about which callers have the greatest need for education and counseling.

**Methods:** The authors analyzed data collected from a sample of hotline callers between April 1, 1999, and March 31, 2000, and supplemented this analysis with focus group interviews of hotline staff.

**Results:** The NHH collected data on 3,672 callers in the 12-month period. The largest segments of callers fell in the age ranges of 20 to 29 (33.3%) and 30-29 (36.8%). Sixty-three percent of callers were female. Seventy percent of callers have either been diagnosed with GH or believe they have been exposed. Average call length was 8 minutes. Leading clinical topics for discussion included transmission/risk reduction, symptoms, diagnostic tests, and treatment options. Psychosocial adjustment issues such as difficulty disclosing to a partner were also frequent topics. An increasing number of callers inquired about type-specific serologic tests.

**Conclusions:** Persons diagnosed with GH or exposed to GH through a sexual partner may need in-depth information on both clinical and psychosexual aspects of the infection.

**Learning Objective:** Participants will be able to describe leading concerns and questions of individuals with GH and their sexual partners.

## P95

### What Americans Think about Genital Herpes: Differences by Race

*SL Schulz, CW Ebel, L Alexander*

American Social Health Association, Research Triangle Park, NC

**Background:** Genital herpes (GH) is now estimated to affect 22% of Americans over the age of 12 and to disproportionately affect African Americans (prevalence, 47.6%). Determining the approach for educational efforts requires better understanding of perceptions of genital herpes in various populations.

**Objective:** To compare knowledge, attitudes and beliefs about GH between African American and White American adults.

**Methods:** Between February 4 and February 21, 1999, ASHA (through Yankelovich Partners, Inc.) conducted random digit-dialed telephone interviews about GH among persons in the U.S. between the ages of 18 and 39, with over-sampling of African Americans.

**Results:** Data from completed interviews of 501 African Americans and 700 White Americans were analyzed. The two groups answered similarly on many variables, but some differences exist. Both groups had high scores for knowledge about GH, including modes of transmission. Compared with White respondents, African Americans reported a higher estimated prevalence of GH (38% vs. 28%), were more concerned about contracting GH, and reported greater willingness to be tested for GH ( $p < .0001$  for each comparison), but White respondents were more likely to say they would discuss GH with a partner if they were to be diagnosed with it ( $p < .0001$ ).

**Conclusions:** African Americans and White Americans possess more similarities than differences in many aspects of GH, particularly in knowledge about GH. While both groups estimate a high prevalence of GH, African Americans may be more interested in testing.

**Learning Objective:** Understand the similarities and differences between African American and White American adults with respect to genital herpes in order to focus prevention efforts.

## P96

### The Herpes Disconnect: Knowledge vs. Perceived Risk in Two Recent Surveys

*CW Ebel, S Schulz, L Jolley*

American Social Health Association, Research Triangle Park, NC

**Background and Rationale:** An expert panel convened by CDC in 1998 called for public education as part of an effort to curb the spread of genital herpes (GH), now estimated to affect 22% of Americans over the age of 12. Determining the approach for such efforts requires better understanding of perceptions of GH in various populations.

**Objective:** To determine the current status of knowledge, attitudes, and beliefs about GH by means of survey questionnaires.

**Methods:** Two surveys were commissioned by the American Social Health Association. In 1999, a random digit dialing approach designed by Yankelovich Partners, Inc. was used to survey Americans between the ages of 18 and 39 ( $N=1,002$ ). In 2000, a Web survey designed by InfoMedics collected responses to a 17-item questionnaire ( $N=1,414$ ).

**Results:** Data from the two surveys are congruent in reflecting high percentages of correct answers to questions about how herpes is transmitted and risk factors for acquiring GH. For example, 85% and 91% of respondents (Yankelovich and InfoMedics, respectively) were aware that GH can be transmitted asymptotically, and 72% (Yankelovich) were aware that most people with herpes do not recognize its symptoms. Roughly two-thirds of respondents in both surveys, however, judged themselves to be at low risk for GH or were not concerned about acquiring it.

**Conclusions:** Despite a high level of knowledge about GH, most adults do not consider themselves at risk.

**Learning Objective:** Participants will be able to describe key perceptions about GH and identify challenges in curbing its spread, including personal denial of risk.

## P97

### An Evaluation of Hepatitis B Vaccinations for High Risk Adolescents in Connecticut

*P Lane, H Jenkins, M Rose, V Sacco, M Rak, M Bolduc, J Hadler*

State of Connecticut, Department of Public Health

**Background and Rationale:** In 1997 the Connecticut STD Control and Immunizations Programs began working together to vaccinate high-risk adolescents against hepatitis B (HBV). Though vaccination is required prior to entering kindergarten and has begun to be required for 7<sup>th</sup> grade, many adolescents have not been vaccinated.

**Objective:** To increase availability of HBV vaccination for potentially high-risk adolescents.

**Methods:** HBV vaccination is offered to STD patients and those detained at two correctional facilities that are under the age of 20 years and have no history of receiving the vaccine. After the enrolled patient receives the first dose, subsequent doses are scheduled one and four months later. Enrollees are entered and tracked in the Vactrac 4.0 database. Reminders to return for subsequent doses are mailed. Those enrollees failing to return are referred for follow-up.

**Results:** Between July 1997 and December 1999, 453 adolescents were enrolled from STD Clinics and from March 1999 to December 1999, there were 103 young women enrolled from the York Correctional Facility. A total of 171(38%) STD enrollees completed the series, with 286 (63%) receiving two doses of vaccine. Among inmates, 31(30%) completed the series and 75 (73%) received two doses. Since 1997, 329 (73%) STD Clinic adolescents were referred for field follow-up. Field follow-up resulted in 163(49%) STD enrollees receiving a subsequent dose. Overall, there were 229 (51%) STD enrollees who did not complete the program; 19% did not return for their second dose and 32% did not return for the final.

**Conclusions:** Adolescents are likely to return to STD clinics at least once for subsequent immunization when follow-up methods are used. Further efforts are needed to identify less labor-intensive follow-up mechanisms and to improve adherence.

## P98

### Hepatitis B Vaccine at Prince George's County STD Clinic

*G Farmer, A Adelakun, G Olthoff, G van Blerk*

Division of Epidemiology, Prince George's County Health Department, Maryland, USA

**Background:** Hepatitis B remains a major public health problem in the United States despite substantial progress in implementing routine infant hepatitis B vaccination. In 1996, 65,000 acute hepatitis cases occurred—the majority of which were among young adults in high-risk groups. The CDC presently advocates targeted vaccination of persons with risk factors for hepatitis B (HBV) infection in a variety of settings including family planning clinics and STD clinics. However, there are many missed opportunities in these settings. At Prince Geon County STD clinic, we have been offering hepatitis B vaccination for those who are

18 years old or younger under the Vaccine for Children (VFC) program since July 1998.

**Objectives:** To evaluate the acceptance rates of hepatitis vaccination in our STD clinic among patients under age 19.

**Methods:** Every patient under the age of 19 is counseled about hepatitis B vaccination, and given the first dose if the patient accepted. Then, a reminder for second dose is sent, followed by phone call from clinician. However, only reminder letter is sent for the third shot. There is a computer generated reminder system if patient is encountered again in the clinic. A review of our medical record database performed to determine our acceptance rates.

**Results:** The acceptance rates for the first dose of the vaccine are 87%, 67% for second dose, and 34% for the third dose. There is no disruption to the clinic flow from administering the vaccination.

**Conclusion:** Hepatitis vaccinations at STD clinics are acceptable, and are important in reducing missed opportunities for vaccination among high-risk individuals.

**Learning Objectives:** Describe how the hepatitis vaccination can be improved among high-risk sexually active patients.

## P99

### STD/Hepatitis B Program Collaboration: Strategies for Effective Implementation

*M Miller<sup>1</sup>, N Fasano<sup>1</sup>, A Slonim<sup>2</sup>, C Downing<sup>2</sup>, B Moss<sup>1</sup>, A Roberto<sup>2</sup>, R Goei<sup>2</sup>*

1. Michigan Department of Community Health, Lansing, MI,
2. Michigan Public Health Institute, Okemos, MI

**Background and Rationale:** In 1999, Michigan Department of Community Health (MDCH) initiated a hepatitis B immunization program targeted to high-risk adolescents and young adult (13 to 21 years of age). Sixty-seven percent of STD clinics across the state are participating in the program. STD clinic clients are in the hepatitis B high-risk target population based on specific behaviors such as multiple sex partners and unsafe sex.

**Objective:** After six months of implementation, qualitative research was conducted to understand operational and client-based issues and strategies employed by local clinics to effectively gain compliance, overcome barriers, and reach out in the community.

**Methods:** Personal interviews and focus groups were conducted with frontline staff in clinics and target adolescents and young adults, respectively, across the state.

**Results:** Specific outreach, operational, and client-based strategies/messages were identified to facilitate clinic implementation and vaccine acceptance rates among the target population and increase outreach to high-risk target population community members.

**Conclusions:** Specific operational and client-based strategies and creative outreach mechanisms have been productively employed to assist local STD clinics in facilitating implementation of hepatitis B vaccines.

**Learning Objective:** Understand program attributes and strategies that contribute to effective implementation of STD/Hepatitis B program collaboration in local clinics.

## P100

### Integration of Hepatitis with other Prevention Programs

*C Kohlmeier*

Erie County Health Department Preventive Health Services,  
Buffalo, NY

**Background:** Through Hepatitis screening of individuals at a high risk needle exchange location funded through public and county monies, the Erie County Department of Health (ECDOH) HIV/STD Clinic identified the strong need to also screen all clients for Hepatitis C. The HIV/STD clinic already provided Hepatitis B screening and vaccination to all clients.

**Objectives:** Demonstrate tools utilized by ECDOH to determine the epidemiology of Hepatitis. Describe available resources used to integrate Hepatitis services into prevention programs. Demonstrate the importance of collaboration among public and private sectors.

**Method:** A pilot program was initiated by ECDOH, combining HIV, STD and Hepatitis services creating a "one-stop-shop." All clients presenting at the HIV/STD clinic would also be screened for Hepatitis C along with other serology for Hepatitis B and Syphilis.

**Results:** Since 1996, approximately 5800 people were screened, diagnosed, immunized and referred for services through the ECDOH.

**Conclusion:** Due to the integration of Hepatitis services into routine STD care the number of screenings, diagnosis and linkages to other services was accomplished.

**Learning Objectives:** The participant will be able to describe the tools utilized by the ECDOH to determine the epidemiology of Hepatitis and identify available resources used to integrate Hepatitis into prevention programs.

## P101

### The ABCs of Hepatitis

*A Israel, M Stuart, P Simpson*

American Social Health Association, Research Triangle Park, NC

**Background and Rationale:** Hepatitis and its use of the letters A through G to identify seven different infections can be confusing to the general public and health care providers alike. The CDC National STD and AIDS Hotlines (NSTDAH) and the Immunization Hotline (NIIH) take tens of thousands of calls per year about hepatitis, which demonstrates the importance of hotlines as a source of hepatitis education.

**Objective:** To share the experiences of CDC NSTDAH and NIIH on the challenges in communicating information about vaccine preventable and non-preventable hepatitis.

**Methods:** Data on caller demographics and call content are collected on a systematic random sample of callers to these hotlines. Data on call attempts are obtained from AT&T.

**Results:** From 1997-1999, of the total hepatitis calls to CDC NIIH, 31% were from health care providers. From July 1999 – April 2000, 6.2% of total callers on the STD Hotline inquired about hepatitis, as well. Callers to both services were mostly concerned with

hepatitis B. However, of the total callers interested in hepatitis on the STD line, 31% were interested in Hepatitis C. There was a significant association among discussion of incubation, symptoms, testing and prevention with both hepatitis B and C. With hepatitis A only health care insurance was significantly associated. Socio-demographic characteristics did not differ.

**Conclusions:** Hotlines are an essential, readily accessible component of a national hepatitis strategy, providing a safe place to obtain information and referrals. These data suggest messages regarding hepatitis B and C are beginning to be heard. Callers seem to recognize hepatitis A as a different type of disease since they call if they have less access to health care.

**Learning Objectives:**

1. Participants will be able to describe the educational needs of various groups of hepatitis information seekers.
2. Participants will be able to identify common concerns of the general public and health care providers regarding information for hepatitis A, B, and C.

## P102

### Factors Associated with Testing for Hepatitis C in a High Risk Sample

*SD Rhodes<sup>1</sup>, RJ DiClemente<sup>2</sup>, KC Hergenrather<sup>3</sup>*

1. University of Alabama at Birmingham, Birmingham, AL,
2. Rollins School of Public Health, Emory University, Atlanta GA,
3. Auburn University, Auburn, AL

**Background:** Hepatitis C virus (HCV) infection is the most common chronic blood-borne infection in the United States (US). Nearly 4 million US citizens (1.8%) have been infected with HCV yet fewer than 50% are aware of their infection because they are asymptomatic.

**Objectives:** To identify correlates associated with being tested for hepatitis C virus (HCV) among a sample of men who have sex with men (MSM).

**Methods:** Internet electronic communications and web pages were used for solicitation and collection of data, using a 31-question survey that was accessible online for one month.

**Results:** Of 628 responses, 79.2% were male. In total, 18 countries were represented. When restricted to MSM from the United States, nearly 95% of respondents reported at least one risk factor associated with HCV transmission. The average age of MSM respondents at risk for HCV was 37.7 years. Over 26% reported receiving no information about hepatitis. Nearly 39% of respondents reported having been tested for HCV at least once. Using logistic regression modeling, being tested for HCV infection was associated with increased perceived knowledge of HCV, health care provider communication, and lifetime history of non-sexual risk behavior.

**Conclusions:** A significant proportion of respondents, who were at risk for contracting HCV, have not been tested. Interventions are needed to increase HCV knowledge within the MSM community. Our findings also underscore the need for health care providers to communicate about hepatitis, particularly among MSM who screen as high risk based on their risk behaviors.

**Learning objectives:**

1. Describe the prevalence of HCV risk factors in a sample of MSM.
2. Identify factors associated with HCV testing in this sample.
3. Understand the role of the health care provider in promoting HCV testing among at-risk patients.
4. Explore the use of the World Wide Web to collect epidemiological data.

## P103

### STD Clinic Client Risk and Vaccination Acceptance and Compliance Rates for Hepatitis B in Two Illinois STD Clinics

*C Finley, R Zimmerman, C Rabins, K McMahon, E Renier, S Bornstein*

Illinois Department of Public Health STD Section, Springfield, IL

**Background and Rationale:** In 1999, the Illinois Department of Public Health established two pilot programs in STD clinics to provide hepatitis B vaccination services.

**Objectives:** Identify client interest in acquiring hepatitis B vaccination. Determine clients' compliance for completing the 3 dose vaccination series. Identify

strategies to improve compliance. Determine what client-reported behavioral risks are associated with client participation.

**Methods:** All clients received information promoting the new vaccination service and completed risk assessments. Initially, all clients 18 and older were serologically screened for total core antibody. Vaccination services were only available to clients 18 and older. Both pilots had vaccination registry systems and utilized reminder notes for missed vaccinations.

**Results:** Of the 1,973 eligible clients (207 were < 18) served in 1999; 926 (46.9%) began vaccination. Pilot I vaccinated 680 of 1,526 eligible clients (44.5%). Pilot II vaccinated 246 of 434 eligible clients (50.9%). Risk assessment data showed clients most likely to participate reported histories of testing for HIV and prior treatment for STDs. Pilot I had a 22% return rate (122 patients) for dose 2 using only one reminder note to improve patient compliance to return. Pilot II, which used both reminder notes and telephone calls, had a 46.6% return rate (104 patients) for dose 2.

**Conclusions:** Providing HBV vaccination to STD populations is most effective when it is paired with an aggressive follow-up program that includes utilizing both written and telephone recall notices to enhance compliance.

**Learning Objectives:** Describe which STD clients are more likely to participate in hepatitis B vaccination services. Understand what clinic measures should be undertaken to enhance series completion.

## P104

### Prevalence of Hepatitis B and C Viral Markers among Various Population Groups in Novosibirsk, Russia

SA Kurilovich<sup>1</sup>, OV Reshetnikov<sup>1</sup>, AA Khryanin<sup>2</sup>, NA Krivenchuk<sup>3</sup>

1. Institute of Internal Medicine, 2. Novosibirsk State Medical University, 3. ImDi Diagnostics, Novosibirsk, Russia

**Objective:** The aim of the present study was to study the occurrence of viral hepatitis B and C among various population groups of Novosibirsk.

**Methods:** Five groups were examined: representative samples of adults and adolescents, students of medical college, students of medical academy (IV-VI years), and blood donors. HBsAg and HCV antibodies were tested in serum samples using previously validated kits (Vector-Best, Novosibirsk).

**Results:** The prevalence rates of viral hepatitis markers are shown in the table:

Group	N	Mean age (years)	HBsAg (%)	HCV (%)
School	278	43/57	15.5	2.5
Medical college	103	9/91	19.4	0.0
Medical academy	173	23/77	21.4	3.5
Adults	448	36/64	42.0	2.2
Blood donors	4552	66/34	No data	1.1

#### Conclusions:

1. HBV and HCV positivity among the general population is 2-2.6 times higher than among blood donors, thus the latter could not serve as an estimate of viral hepatitis prevalence in the community.
2. The prevalence of HBsAg in teenagers is the same as in adults, and HCV is much lower.
3. Medical students represent risk group for acquisition of these infections.

## P105

### The Effect of the Educational Environment on HIV and AIDS Rates

AL Bedimo<sup>1</sup>, K Mason<sup>1</sup>, TA Farley<sup>2</sup>, DA Cohen<sup>1</sup>

1. Louisiana State University Health Sciences Center, New Orleans, LA, 2. Louisiana Department of Health and Hospitals, Office of Public Health, New Orleans, LA

**Background:** Structural factors, attributes that refer to social collectivities and that are beyond the control of individuals, have been hypothesized to influence HIV/AIDS rates. The educational environment is one such factor.

**Objective:** To describe the association at the county level between educational factors and HIV/AIDS rates.

**Methods:** County HIV/AIDS incidence rates for 1998 were collected from 33 states. Educational data from the public school system was abstracted from the 1994 Common Core of Data. Demographic, instructional,

and financial data from eligible school districts were identified as potential predictors and aggregated to the county level. Variables were normalized with natural log transformations and correlations between predictors and HIV/AIDS rates were calculated.

**Results:** 1,894 counties were included in the preliminary analysis, with an average of 15.2% of their population living below poverty level. Mean per capita income was \$17,748. The mean number of public school students was 17,001 with an average student/teacher ratio of 13.1 in the secondary schools. 5.3% of students dropped out between 9<sup>th</sup> and 12<sup>th</sup> grades. Total expenditures per pupil averaged \$5,686, while counties spent an average of 40% of their total school budget on salaries for instruction. HIV and AIDS were positively correlated with percentage of 9<sup>th</sup> grade dropouts ( $r=.23$ ,  $p<.00$  and  $r=.33$ ,  $p<.00$ , respectively), percentage of total revenue from federal sources ( $r=.28$ ,  $p<.00$ ;  $r=.31$ ,  $p<.00$ ), and student/teacher ratio in secondary schools ( $r=.22$ ,  $p<.00$ ;  $r=.33$ ,  $p<.00$ ). HIV and AIDS were both negatively correlated with percentage of revenue from local sources ( $r=-.19$ ,  $p<.00$ ;  $r=-.17$ ,  $p<.00$ ). AIDS was positively correlated with the ratio of students to guidance counselors in secondary schools ( $r=.12$ ,  $p<.001$ ).

**Conclusions:** Structural educational factors and their relationship to HIV/AIDS merit further research and study.

**Learning Objectives:** To understand the theoretical basis of how educational environment can influence HIV/AIDS and to stimulate discussion on aspects of educational reform that might influence HIV/AIDS risk behaviors.

## P106

### Characteristics and Trends of Newly Identified HIV Infections in Drug Treatment Centers (DTCs), United States, 1992-1998

*DO Stewart, KM Sabin, KA Bordelon, RL Frey, Jr., R Horsley, SM Greby*

Centers for Disease Control and Prevention (CDC), Atlanta GA

**Background:** DTCs offer HIV Counseling, Testing, and Referral services (CTR) to a difficult-to-reach population. We report on CDC-funded HIV CTR services provided to persons in DTCs in the United States.

**Objectives:** Characterize use of HIV CTR in DTCs, and summarize service use.

**Methods:** Cross-sectional data from DTCs reporting to CDC HIV Counseling and Testing System, 1992-1998, were used to determine service use.

**Results:** DTCs in 46 project areas performed 871,415 tests with 21,023 (2.4%) HIV+ results. Of HIV+ tests accompanied by self-reports of previous HIV test history (19,932), previous test results were 35% positive, 27% negative, 9% inconclusive/unspecified with the remaining 29% reporting no previous test. Therefore 65% of positive tests were newly identified. During the study period, testing increased among most racial/ethnic groups and both sexes. The greatest number of tests was reported for heterosexual injection drug users (IDUs) (275,310), followed by persons with a sex partner at risk (174,156), and those who reported use of non-injection drugs during sex (131,825). Since 1992, the largest increase was among testers who reported use of non-injection drugs during sex, followed by persons with a sexually transmitted disease diagnosis. Over time, the number of tests remained fairly constant among high-risk groups. However, the number testing positive decreased among men who have sex with men (MSM)/IDUs (183 to 105), MSM (383 to 268), and heterosexual IDUs (1,476 to 1,116), and increased among heterosexuals with no reported risk factor (104 to 170).

**Conclusions:** Use of CTR in DTCs rose steadily from 1992-1998 and 65% of HIV+ tests were newly identified. DTCs provide an important access point for prevention efforts.

**Learning Objective:** Describe differences in behavioral risk among CDC-funded test episodes reported from DTCs.

## P107

### HIV Transmission Risk Behaviors among those in HIV Clinical Care

*R Flaks, W Burman, P Gourley, D Cohn, C Rietmeijer, S Bull*

Denver Public Health Department, Denver, CO

**Background:** To date few studies have examined HIV transmission risk behaviors among persons in HIV care. Recent studies report an increase in the incidence of STD's and primary drug resistant HIV,

demonstrating ongoing transmission risk behaviors among persons in HIV care.

**Objective:** To determine HIV transmission risk behaviors and correlates of behaviors among patients in HIV clinical care.

**Methods:** A random sample of HIV-infected clients receiving care at Denver Health Medical Center participated in a 30-minute structured interview. Medical records abstraction was conducted to obtain recent viral loads, CD4 cell counts, and incident STD's.

**Results:** Of the 95 clients interviewed (88 men, 7 women), 38 (40%) reported no anal, vaginal or oral sex in the past 3 months. Of the clients who reported being sexually active in the past 3 months, 29 (31%) reported being dissatisfied with their sex life. Many clients revealed their desire to establish a (sexual) relationship. Of the 57 (60%) who reported having sex in the past 3 months, 17 (30%) reported engaging in only oral sex. Twenty-nine sexually active gay men reported having anal sex. Of these gay men, 22 (76%) reported using a condom during their last episode and 21(73%) reported the last episode of anal sex was with a primary partner. Only one client reported sharing needles in the past 3 months.

**Conclusions:** Among this random sample, few clients reported engaging in high levels of HIV transmission risk behavior(s). Interventions to decrease HIV transmission from persons in HIV care will need to address sexuality in general, not just condom use and needle-sharing.

## P108

### STD/HIV Prevention Case Management

*C Cotton*<sup>1</sup>, *D Kelly-Hector*<sup>1,2</sup>

1. Chicago Department of Public Health, 2. Centers for Disease Control and Prevention, Atlanta, GA

**Background and Rationale:** The link between STDs and HIV transmission is undisputed; individuals infected with STDs are at greater risk of contracting HIV than those not infected. The Chicago Department of Public Health performed approximately 16,000 HIV tests in 1998 and 13,434 in 1999. These individuals, by nature of their being in an STD clinic, are at risk of contracting HIV at some point in their

lives, and could greatly benefit from prevention case management (PCM) services.

**Objective:** The objective of PCM is to empower high-risk negative individuals in the city of Chicago with the tools needed to help them stay negative; increase awareness; and develop or enhance personal skills in negotiations with sex partners to reduce risk.

**Methods:** STD/HIV counselors offer PCM referrals to all high-risk HIV-negative individuals tested in the STD clinics. The PCM program is introduced during the pretest counseling session, and offered during the posttest after the client has been informed of their status. Upon acceptance, the counselor faxes a referral to the contract agency for immediate follow-up. The contract agency applies multi-tier prevention strategies, using individual and group counseling as a foundation to assist clients in developing and implementing plans of action to stay HIV-negative and live a healthier lifestyle.

**Results:** Since the beginning of the project, 1,077 clients have been referred to the PCM program. PCM services were provided to a total of 252 individuals, with 229 participating in individual sessions and 81 participating in group sessions.

**Conclusions:** PCM promotes awareness and assists high-risk clients with reducing behaviors that place them at risk for contracting HIV. The presentation will review start up activities, obstacles in recruitment, follow-up, and importance of providing PCM services within an STD Prevention Program.

## P109

### Experience with HIV/STD Prevention Counseling with a Rapid HIV Test and Counseling Quality Assurance (RESPECT-2)

*M Iatesta*<sup>1</sup>, *B Dillon*<sup>1</sup>, *S Padilla*<sup>2</sup>, *L Brooks*<sup>3</sup>, *L Raveneau*<sup>4</sup>, *C Metcalf*<sup>1</sup>

1. Centers for Disease Control and Prevention, Atlanta, GA, 2. California State University, Long Beach, CA, 3. Denver Public Health, Denver, CO, 4. North Jersey Community Research Initiative, Newark, NJ

**Background:** RESPECT-2 is a large ongoing multi-center randomized controlled trial comparing the efficacy of two brief HIV testing and counseling interventions

aimed at reducing STD incidence in STD clinic patients. Participants are followed-up for one year after the intervention to assess STD incidence and changes in risk behavior.

**Objectives:** 1) To describe a protocol for HIV/STD prevention counseling with a rapid HIV test; 2) To describe methods used to assure quality prevention counseling and adherence to counseling protocols.

**Methods:** Participants are assigned to either standard HIV testing and 2 counseling sessions 1 week apart using a structured proven-effective prevention counseling protocol, or rapid HIV testing and 2 counseling sessions the same visit using a modified prevention counseling protocol (see [www.cdc.gov/hiv/projects/respect-2/](http://www.cdc.gov/hiv/projects/respect-2/) ). Participants develop personal risk-reduction plans, irrespective of the HIV testing and counseling method. About 15% of counseling sessions are observed by a trained supervisor or audiotaped for quality assurance (QA) purposes. Supervisors use a structured evaluation form to assess adherence to counseling protocols. Counselors are given regular feedback and mentoring to improve their counseling skills.

**Results:** Preliminary results indicate that the modified counseling protocol is acceptable to counselors and clients, and can be completed as recommended. To date, 78% of participants have consented to having counseling sessions audiotaped. Counselors are receptive to routine ongoing counseling QA, respond positively to feedback, and have become adept at adhering to counseling protocols.

**Conclusions:** Prevention counseling with rapid HIV testing and same-visit HIV results, is feasible but efficacy is not yet known. Audiotaping or observation for QA purposes, is accepted by most clients. Implementing counseling QA, using a structured QA protocol, is useful to ensure consistent quality counseling.

## P110 Syphilis Screening in a County Jail Accounts for over 50% of Reported Cases

*WB Rogers<sup>1</sup>, CP Seigenthaler<sup>1</sup>, WS Lester<sup>1</sup>, RD Burke<sup>2</sup>*

1. Metropolitan Health Department of Nashville and Davidson County, Nashville, TN, 2. Centers for Disease Control and Prevention, Atlanta GA

**Background and Rationale:** Nashville, TN has been experiencing a syphilis epidemic since 1996. Based on evidence in the literature relating criminal activity to syphilis acquisition and transmission, and local epidemiological evidence, syphilis screening was implemented at the county jail. This is one-way Nashville chose to address the national syphilis elimination initiative areas of enhanced surveillance and expanded clinical and laboratory services.

**Objectives:** To test a higher risk segment of the population and administer treatment to reactive patients before they return to the general population.

**Methods:** Attempts are made to draw blood samples on all arrestees. A rapid RPR is performed by the state lab to determine syphilis disease status. Positive results are telephoned to the medical staff at the jail to initiate an electronic record search to determine if treatment needs to be administered. If there is no record of previous treatment, it is administered on-site.

**Results:** In the first 7 months of this project, 9,357 syphilis tests were performed and 136 new cases of syphilis have been confirmed. By disease stage, the cases identified have been distributed as follows: 9.6% primary; 14.7% secondary; 50.7% early-latent; and 25.0% late-latent.

**Conclusion:** Screening for disease in the county jail identifies additional cases of syphilis and aids in treatment administration. The majority of the cases of syphilis identified in the Davidson County, TN jail have been early-latent. Identifying disease in a correction facility may be indicative of poor healthcare seeking behavior or limited access to care of a selected segment of the population.

**Learning Objective:** Describe advantages of jail screening in efforts toward national objective of syphilis elimination.

## P111 Do You See What I See: Divergent Perceptions of Community Challenges between Local Area Residents and CBO-Staff Members

*SP Williams, FR Bloom*

Centers for Disease Control and Prevention, Atlanta

**Background and Rationale:** Community based services can play an important role in the health and wellness of a community. In order to provide adequate services to community residents, agencies, and organizations must identify and understand the community's challenges.

**Objective:** To examine the perceived community challenges of local area residents and CBO-staff members.

**Methods:** As part of a focused interview, local area residents (N=151) and CBO-staff members (N=118) were asked to identify the three most important problems for their community or the people they serve, respectively.

**Results:** Eight categories of challenges emerged from the responses including problems related to: violence, the environment, poverty, education, youth, health, family and culture, respectively. Findings indicate that most local area residents and CBO-staff members perceive issues related to violence, the environment, or poverty to be major community challenges. However, important differences between the two groups were noted. These differences applied to the quality, prioritization, and relatedness of the challenges. One key example of the differences is the saliency of certain challenges, such as the presence of violence in the community. While 25% of local area residents cited violence as a problem relating to all three of the community challenges, only one provider did the same. Similar disparities were found for challenges such as education, with 33% of the providers and 5% of the members citing education issues as one of their top three challenges.

**Conclusion:** The identification and understanding of the challenges a community and its members encounter will enable community-focused agencies and organizations to better address community concerns and deliver more tailored services.

**Learning Objectives:** Describe the similarities and differences in community members' and providers' perceived community challenges.

## P112 Cost-effectiveness Evaluation of Syphilis Screening at Cook County Department of Corrections (Chicago)

*H Beidinger<sup>1</sup>, J Kraut<sup>3</sup>, A McIntyre<sup>2</sup>, D Broussard<sup>1</sup>, D Beete<sup>1</sup>, S Mier<sup>1</sup>, K Irwin<sup>3</sup>*

1. Chicago Department of Public Health, Chicago, IL, 2. University of Illinois at Chicago School of Public Health, Chicago, IL, 3. Centers for Disease Control and Prevention, Atlanta, GA

**Background:** In 1996, the Chicago Department of Public Health established the Stat RPR Project at the Cook County Department of Corrections Jail (CCDOC) female intake unit in an effort to increase syphilis treatment rates. Stat RPR screening is provided during the second shift (3 PM – 11 PM) when the greatest numbers of women are processed, while routine RPR screening is provided at all other times. Although syphilis cases in Chicago have been decreasing since 1992, the proportion of female cases identified and treated at CCDOC increased from 10% in 1995 to 22% in 1996.

**Objective:** To evaluate the cost effectiveness of an ongoing stat RPR syphilis-screening program as compared with a routine RPR syphilis screening program for women at the CCDOC.

**Methods:** A decision analysis model was created to compare the number of cases detected and cost of stat RPR versus routine RPR screening methods. Costs and benefits to the public sector health system including the jail were evaluated. All activities related to each RPR screening method were timed and recorded for 20 business days from March 7 to April 3, 2000.

**Results:** Between March 7 and April 3, 2000, [722,15.5%] were screened for syphilis using routine RPR and [553,89.8%] using stat RPR. Routine RPR detected [35,4.8%] cases, while stat RPR detected [48,8.7%]. Analyses are being conducted to determine the cost per case detected using routine RPR and stat RPR.

**Conclusions:** We will present data on yield and cost effectiveness of stat RPR screening compared with routine RPR screening.

**Learning Objective:** Describe the differences in yield and cost between two syphilis-screening methods among women in a large county jail.

## P113

## Establishing a Detection System for Changes in Infectious Syphilis Over Time: Quantitative Basis for a Syphilis Elimination Rapid Response Plan

*SD Mehta, P O'Campo, W Brathwaite, J Ellen*

Johns Hopkins University School of Medicine, Baltimore, MD

**Background:** Quantification and definition of an epidemic can be difficult and subjective, leading to variable and delayed responses. A standardized detection system can allow for more effective prevention and control activities. Quality control (QC) charts are a statistical method used to define averages and control limits for series data, and may be an effective means of detecting outbreaks.

**Objective:** To develop and apply QC charts as a timely method of detecting changes in infectious syphilis counts over time.

**Methods:** QC charts were constructed using consecutive monthly counts of primary, secondary, and early latent syphilis from 1/92-1/00. Upper and lower control limits were defined as the average  $\pm$  3 standard error ( $\sigma$ ) units. The baseline average was calculated from pre-epidemic period, 1/92-12/93. The baseline and control limits were applied prospectively, beginning 1/94. Once four individual measurements occurred in excess of the baseline upper or lower control limits, a new average and control limits were calculated based on the 12 months prior to the fourth beyond-limits measurement.

**Results:** From 1/92-1/00 there were six distinct period averages. The baseline average was 35.3 cases of primary and secondary syphilis per month. Counts through 4/94 were within the baseline limits. The second average (48.7 cases per month), a significant increase in infectious syphilis, was initiated in 5/94 and continued through 4/95. Further periods of increases were detected 5/95-1/96 (66.6), 2/96-11/96 (102.8), and 12/96-7/98 (150.3), representing the peak of the epidemic. A period of decline was initiated 7/98, and has continued through 1/00 (74.8).

**Conclusion:** QC charts provide a simple, flexible statistical method that can be applied to detect significant changes in counts of infectious syphilis over time.

Predetermined quantification of syphilis increases will allow for improved standardization of timing and intensity of outbreak response.

**Learning Objective:** Develop an enhanced surveillance tool that will provide a quantitative basis for infectious syphilis outbreak detection and outbreak response plan implementation.

## P114

## Developing a Rapid Response Team in Danville, Virginia

*RS Mason*

Virginia Department of Health, Richmond, VA

**Background and Rationale:** Danville has had a syphilis outbreak that has persisted each year for five years. This rural city has one Disease Intervention Specialist (DIS) and one STD clinic. Additional assistance was needed if syphilis elimination was to become a reality. As part of the National Syphilis Elimination Plan, outbreak response is an integral part of syphilis elimination efforts.

**Objective:** To establish an outbreak response team for the purposes of syphilis elimination and outbreak control.

**Methods:** The Virginia Epidemiology Response Team (VERT) is comprised of eight DIS from across the state. Training sessions focusing on outbreak control methods and logistics provided DIS with essential tools for the rapid response efforts. A team of two DIS is assigned for one week to supplement the work of the local DIS. The rapid response team is lead by a Syphilis Elimination Specialist, who is responsible for assigning fieldwork, reviewing cases, and compiling weekly activity and morbidity data to be reported to the Syphilis Elimination Coordinator. Duties of VERT consist of conducting syphilis field investigations and re-interviews, providing jail screenings, and investigating uncomplicated gonorrhea and chlamydia cases.

**Results:** VERT continues to play an integral role in syphilis elimination and outbreak control in Danville. Their efforts have been exceptional and their dedication to the syphilis elimination program has been extraordinary. The community has responded to their efforts and all involved have grown professionally because of this effort. Clinic attendance has increased 80%.

**Conclusions:** The implementation of VERT has increased clinic visits, provided the means to conduct screenings in high-risk populations, and aided in the outbreak control efforts in accordance with Virginia's syphilis plan.

## P115

### Changing Epidemiology of Syphilis in San Francisco, 1981-1999

*R Kohn*

San Francisco Department of Public Health

**Background:** The number of new syphilis cases identified each year in San Francisco has decreased dramatically since the advent of the AIDS epidemic. Where San Francisco once had the highest rate of syphilis in the country, it has now been categorized as an area of "potential re-emergence."

**Objectives:** To quantify changes in demographics of syphilis patients interviewed and success in partner notification during this period of decreasing rates.

**Methods:** Data from syphilis partner notification interviews have been entered into a database as they were closed since 1989. These data were combined with data abstracted from hard copies of older interviews. Interviews include primary, secondary, and early latent cases.

**Results:** Syphilis interviews were available from 1981 through 1999. The number of cases interviewed each year decreased from 1546 to 47 over this time. The proportion of contacts treated fell from 59% in 1982 to 36% 1992; since then this proportion has fluctuated between 54% and 24%. Between 1981 and 1990 the proportion of cases among gay and bisexual men fell from 93% to 23%; in 1999, however, the proportion had increased to 71%. The proportion of white cases fell from 75% in 1981 to 18% in 1990, and then increased back to 57% in 1999. The mean age of cases decreased from 32.3 in 1981 to 30.6 in 1988, and then increased to 37.9 in 1999.

**Conclusions:** Some changes in demographics seen over the past twenty years appear to be reverting. It remains to be seen whether this will result in increases in syphilis cases.

## P116

### Comparing Syphilis Patients to Others with STDs: Do Differences Mark Networks?

*JN Arno<sup>1,4</sup>, D Wilmot<sup>1,2</sup>, J Beall<sup>2,3</sup>, C Langley<sup>1,4</sup>*

1. The Marion County Health Department, 2. The Centers for Disease Control, 3. The Indiana State Department of Health, and 4. Indiana University School of Medicine

**Background:** Half of the cases in the Marion County syphilis outbreak were diagnosed at the Bell Flower STD Clinic. Because all clinic attendees receive an RPR, syphilis patient characteristics can be compared to others at high risk.

**Objective:** To compare demographics and high-risk behaviors of syphilis patients with other clinic attendees.

**Methods:** Clinic records of all patients seen between October 15, 1999 and April 15, 2000 were reviewed after construction of a Microsoft Access database from files exported from STD MIS. Data was analyzed using Microsoft Excel.

**Results:** During this time period, 7380 patients were seen. Sixty-two percent of patients identified themselves as black, 33 % as white and 5 % as other. 139 patients were diagnosed with primary or secondary syphilis. During the same time period, 575 were diagnosed with gonorrhea, 249 with Chlamydia and 388 with genital warts. The prevalence of P & S syphilis was 3.2% in black clinic patients in contrast to a prevalence of 0.36% in white patients. In contrast, white patients had a higher prevalence of genital warts. Syphilis patients had an average of  $3.8 \pm 6.5$  sex partners in the past 12 months, less than gonorrhea patients ( $5.4 \pm 11.5$ ) and similar to genital wart patients ( $3.4 \pm 7.3$ ). More syphilis patients used cocaine or traded sex for drugs or money than patients with other STDs.

**Conclusions:** Syphilis was uncommon in both black and white patients attending the Bell Flower STD clinic but was more common in blacks. Genital warts were more common in white patients. Syphilis patients attending the clinic had similar numbers of partners but were more likely to engage in high-risk behaviors.

**Learning Objective:** Compare demographic and risk characteristics of syphilis patients compared to other STD patients.

## P117

### Identifying Intervention Areas and Establishing Morbidity Thresholds for Syphilis Elimination in Philadelphia, PA

*M Eberhart, K Lavelle, M Goldberg, L Asbel, R Small*

Philadelphia Department of Public Health, Philadelphia, PA

**Background and Rationale:** Identifying small, well-defined geographic areas for targeted interventions will focus elimination efforts in communities where an outbreak is likely to occur. Establishing morbidity thresholds will help detect outbreaks rapidly.

**Objective:** To identify defined geographic areas where targeted interventions will have the most impact, and to establish thresholds of disease morbidity for early detection of outbreaks.

**Methods:** Morbidity data for all primary and secondary syphilis cases between 1991 and 1998 (n=3694) were analyzed using ArcView Geographic Information Systems (GIS) software. The city was divided into a grid made up of 165 one-square-mile blocks and cases were plotted by patient address. Case counts were calculated by grid block and those blocks with the greatest number of cases for each year of the analysis were identified as potential intervention areas. Citywide thresholds for one-week and four-week periods were calculated using the most recent 20 months of data (all of 1998 and the first eight months of 1999). Thresholds were set for the city overall and by age category, race, diagnosis, gender, MSM status and geographic area.

**Results:** Between 1991 and 1998, ten one-square-mile blocks accounted for 1428 cases of infectious syphilis, or 39% of total morbidity. Five of these blocks, accounting for 23% of total morbidity, were selected as intervention areas. Citywide thresholds for infectious syphilis morbidity were set at 2.68 cases for one week and 8.6 cases for a four-week period.

**Conclusions:** Spatial analysis can be used to identify geographic areas for targeted interventions. Thresholds can be used to define and detect outbreaks based on demographic and geographic criteria.

**Learning Objective:** To understand how spatial analysis can be used to track disease trends over time and detect outbreaks in defined geographic areas and demographic groups.

## P118

### Syphilis Outbreak Among Men Who Have Sex With Men (MSM) – Philadelphia, PA

*R Small, M Goldberg, M Eberhart*

City of Philadelphia, Department of Public Health

**Background and Rationale:** During the first seven months of 1999, 28 infectious syphilis cases among men were reported to the STD control program. Of these cases, 39.3% (11/28) occurred among men who have sex with men (MSM -Sexual orientation based on self reporting). Since 1995 there has been an increase in both the number and percentage of infectious syphilis cases attributed to MSMs in Philadelphia (1/110, 0.9% in 1995 to 11/45, 19.6% in 1998).

**Objective:** To reduce the number of infectious syphilis cases occurring in the MSM community by developing an effective intervention strategy specifically designed for the affected population.

**Methods:** The eleven infectious syphilis cases were analyzed to discern the social and sexual behaviors associated with the increased risk of acquiring syphilis. These data were presented to Community Based Organizations representing the MSM community and to the AIDS Activities Coordinating Office. A press release was formulated and the information was disseminated to the affected community via an article in a local MSM oriented newspaper. The STD program developed posters featuring the “syphilis article” and went into the community in an attempt to elicit support (accepting/distributing condoms, posters and educational materials supplied by the STD program) from the businesses that serve this community. Syphilis screening events were also held.

**Results:** The number of reported infectious syphilis cases among MSMs sharply declined; during the remainder of 1999 (August through December), three cases were reported and during the first five months of 2000, two cases were reported.

**Conclusions:** An intensified, collaborative effort between public health and key community resource providers representing the MSM community, aided in reducing the number of reported cases of infectious syphilis in this population.

## P119 Integrating Syphilis Testing into Non Traditional HIV Testing Sites

AK Bray

Metrolina AIDS Project, Charlotte, NC

**Background and Rationale:** Mecklenburg County (Charlotte, North Carolina) is one of the 5 counties in North Carolina and one of the top 29 counties in the United States making up 50% of all syphilis cases. Mecklenburg County is involved in a syphilis elimination project.

**Objective:** To determine the prevalence of syphilis at non-traditional HIV counseling and testing sites in Mecklenburg County.

**Methods:** During HIV counseling sessions, participants were asked about their knowledge of syphilis and if they would like a syphilis test. Locations of Non-Traditional Testing include: 2 homeless shelters, 4 substance abuse recovery programs, 2 soup kitchens, 1 program for the homeless mentally ill, 3 area universities and one health clinic with evening hours. Because clients were already getting an HIV test, this same blood sample would be used for the RPR test.

**Results:** From January 1999 to December 1999, 674 persons received an HIV test at a Non Traditional Testing Site. 490 (73%) also chose to have a syphilis test. 15 (3% of those tests were reactive. For the first quarter of 2000, 319 (100%) of those tested for HIV were also tested for syphilis. 16 (5%) tested positive for syphilis.

**Conclusions:** Offering syphilis tests to persons getting tested for HIV is a way of finding syphilis in persons who are unaware of their status. Providing syphilis

education and tests is a worthwhile effort in HIV Non Traditional Counseling and Testing sites.

**Learning Objective:** Explain the relationship between syphilis testing and HIV testing in non-traditional HIV testing locations.

## P120 The Partners Project: A Couples Based Intervention to Decrease Risk for HIV, STDs, and Unplanned Pregnancies

CH Johnson<sup>1</sup>, HC Huszti<sup>1</sup>, SM Harvey<sup>2</sup>,  
K Pappas-DeLuca, C Galavotti<sup>3</sup>, L Beckman<sup>4</sup>

1. University of Oklahoma Health Sciences Center, Oklahoma City, OK, 2. University of Oregon, Eugene, OR, 3. Centers for Disease Control and Prevention, Atlanta, GA, 4. California School of Professional Psychology, Alhambra, CA

**Background and Rationale:** HIV infection and sexually transmitted diseases are a significant threat to young adults. While consistent condom use can protect individuals from infection with HIV and other STDs, this use must be negotiated within the context of a relationship.

**Objective:** To determine whether a theory-based behavioral intervention program that focuses on couple dynamics increases condom use with main partners among ethnically diverse women, ages 18-25 years, at risk for HIV, STDs, and unplanned pregnancies.

**Methods:** Women and their primary sexual partner are recruited for participation at community clinics. After baseline assessment, couples are randomized to either an intervention or comparison condition. The intervention condition consists of three group sessions, designed to help women and their partners recognize personal vulnerability, improve couple communication, and acquire skills to prevent HIV, STDs and unplanned pregnancies. Couples randomized to the comparison condition receive 45-60 minutes of education on HIV/STD and contraception.

**Results:** The intervention phase of the PARTNERS project began in January, 2000. Preliminary data will be provided on the risk characteristics of our current sample. Intervention activities will also be described, along with participant responses to the program.

**Conclusions:** This study is unique in that it focuses on the influence of sex partners on each other and the effect of other social and normative factors on the sexual dyad.

**Learning Objective:**

1. Describe a couples based intervention program designed to decrease HIV, STDs and unplanned pregnancies among young women at risk.
2. Describe risk characteristics for HIV, STDs and unplanned pregnancies presented by young women and their sexual male partners.

## P121

### A Six-Hour Partner Services Management Course - "What a Difference a Day Makes"

*JD Greenshields, NP McClure, D Sayers*

State of Ohio Department of Health, Akron, OH

**Background and Rational:** The results from the Ohio Partner Services Training Survey and the Region V Infertility Prevention Project Training Needs Assessment indicated that providers from Family Planning and S. T. D. sites would commit staff for training in partner services if the class was regionalized and no longer than one day in length.

**Objectives:** Develop a one-day training to increase/enhance participation and skill level for partner referral services.

**Methods:** The Training and Development Oversight Committee and the Infertility Prevention Project Coordinator requested Partner Services curriculum from two project areas. The committee then reviewed, rewrote, and reduced multi-day courses to a single day training. The resulting course addressed both state and local program needs.

**Results:** A one-day training was developed that included essential communication concepts, skill building, confidentiality, patient motivators, and interview format for partner services. The course materials include pre course registration packet with course overview, self-assessment survey, and disease fact sheet. A power point presentation used in conjunction with a participant training manual. A trainer's manual covering the course and several exercises for skill development. Participants complete an evaluation on the course content and instructor performance.

A sixty-day follow up survey mailed to participants, assessing the usefulness of course content in practical application at individual sites.

**Conclusion:** The course has proven to draw participants from statewide S.T.D. providers. Advanced registration response has dictated the scheduling of six trainings to date. Data collected from course evaluations indicates a greater commitment and appreciation for the need of a formalized partner referral procedure/protocol by the participant at their sites.

**Learning Objectives:**

1. Describe the six steps in the partner services curriculum.
2. Demonstrate training strategies for public and private STD treatment providers to improve levels patient self-partner referral.

## P122

### Partner Notification Success Rates in a Correctional Population with High Rates of Asymptomatic Chlamydia Infection

*VP Jones, N Willard, G Olthoff, C Gaydos, J Ellen*

Prince George's County Health Department, Forestville, Maryland, Johns Hopkins University Adolescent Health Research, Baltimore, MD

**Background and Rationale:** Detection and treatment of asymptomatic chlamydia or gonorrhea in high-risk men may be an important strategy to reduce the incidence of chlamydia and its sequelae in female sex partners. The effectiveness of such an approach is tied, in part, to the ability to contact and treat infected female sex partners. As part of a study of urine-based chlamydia and gonorrhea screening of asymptomatic 15 to 35 year old men in a county correctional facility, we attempted to notify, test, and treat their sex partners.

**Objective:** To assess the success of partner services for chlamydia and gonorrhea in this population.

**Methods:** Inmates were screened for chlamydia at the main intake unit and various other housing units within the county correctional center. Chlamydia- or gonorrhea-infected male inmates were interviewed by health department staff and asked to provide contact

information on their sex partners in the past 60 days. Health department staff then attempted to notify, counsel, and, in some cases, test and treat female sex partners. The contact index was computed by dividing the number of contacts elicited from each interview by the number of positive cases identified.

**Results:** Twenty inmates were positive for chlamydia and one was positive for gonorrhea. Nineteen of the twenty-one-infected inmates were located and treated for their infection and interviewed by a Disease Intervention Specialist. The interviewed inmates provided information on ten sex partners. The dispositions of those contacts are as follows: 3 prophylactically treated, 2 infected and treated, 1 refused examination and treatment, 1 unable to locate, 1 previously treated, and 1 not infected. The contact index was 0.5.

**Conclusion:** The contact index is comparable to previously published figures suggesting that it is feasible to provide partner notification services for sex partners of male inmates infected with chlamydia. Efforts to improve sex partner locating information (e.g., re-interviews) need to be considered in order to improve contact index.

## P123

### Disseminating the 1998 STD Treatment Guidelines: Lessons from North Carolina

*J Cates, W Miller*

American Social Health Association, University of North Carolina

**Background and Rationale:** The purpose of clinical practice guidelines is to reduce inappropriate, outdated medical care and thereby improve patient outcomes. Dissemination of such guidelines to the wide array of health care providers remains a challenge. In January 1998, the Centers for Disease Control and Prevention released new treatment guidelines for the clinical management of sexually transmitted diseases.

**Objectives:** 1) to describe the challenges in disseminating clinical practice guidelines, and 2) to evaluate videoconference training of 247 health care professionals in North Carolina on the CDC's 1998 STD treatment guidelines.

**Method:** The North Carolina Coalition to Prevent STDs broadcast a one-day videoconference on February 9, 1999, to ten satellite sites to promote provider compliance with the 1998 STD Treatment Guidelines. Participants answered 10-item pre and post conference questionnaires on STD knowledge and completed a Likert scale evaluation of the program and training modality. The scores were stratified by occupation, work site, amount of time spent on STDs, work setting, geographical setting, previous STD training, previous videoconference training, and gender.

**Results:** Of the 247 participants, 176 (71%) completed both tests. Primary occupational categories included registered nurses (54%), nurse practitioners (14%), health educators (7%), and disease intervention specialists (6%). The average pre-test score of all the participants was 68.0 out of a possible 100 points. The average post-test score advanced 21.4 points to a total 89.4 ( $p < 0.001$ , paired t-test). Scores varied by occupation, work site, amount of work time spent on STDs, geographical setting, previous STD training, previous videoconference training, and gender.

**Conclusions:** This videoconference training on the 1998 CDC STD Treatment Guidelines increased short-term knowledge as measured by pre and posttests. The training reached a diverse group of mostly public health practitioners. Future evaluations of videoconference training should include assessments of application in practice of the knowledge gained. Self-reported skill assessments could be collected along with clinic preceptors' assessments of participants' clinical skills.

**Learning Objective:** Describe the uses and limitations of videoconference training for STD-related clinical practice guidelines.

P124

## Physicians' Knowledge about Human Papillomavirus in Relationship to External Genital Warts and Cervical Cancer

*Y Kerr<sup>1</sup>, M Williams<sup>2</sup>, B Stoner<sup>3</sup>*

1. Centers for Disease Control and Prevention, St. Louis, MO
2. St. Louis County Department of Health, St. Louis, MO,
3. Washington University School of Medicine, St. Louis, MO

**Background:** Human papillomavirus (HPV) is one of the most common STDs yet is not reportable to public health authorities. Despite being frequently encountered in clinical practice, little information is available regarding healthcare provider knowledge about HPV and treatment strategies.

**Objectives:** To assess health care provider knowledge about HPV and its clinical manifestations, in anticipation of developing public health interventions for HPV control.

**Methods:** A one-page survey was developed with questions regarding HPV biology, diagnostic tests, treatment, counseling messages and risk factors. The survey was faxed to a convenience sample of 800 healthcare providers in St. Louis County, MO. Providers were requested to complete the survey and fax responses back to the county health department.

**Results:** Evaluable surveys were voluntarily returned from 91 providers ( 11.4%). Compared with other physicians, OB/GYNs were more likely to use surgical excision ( $p < 0.01$ ) and less likely to use liquid nitrogen ( $p < 0.01$ ) to treat external genital warts. OB/GYNs were more likely than other physicians to proceed directly to colposcopy to evaluate high-grade squamous intraepithelial lesions (HSIL) ( $p < 0.05$ ). Non-OB/GYNs were more likely to incorrectly attribute cervical cancer to HPV types 1 and 70 ( $p < 0.05$ ) and to link HPV types 6 and 11 to HSIL ( $p < 0.05$ ). Differences in counseling messages were also identified.

**Conclusions:** Healthcare providers exhibited varying degrees of knowledge about HPV, with differences in diagnostic and therapeutic strategies. These data will assist public health officials in developing targeted interventions for provider education to enhance HPV control and prevention.

P125

## Assessing use of the 1994 HIV Counseling, Testing, and Referral Standards and Guidelines – How closely does practice conform to existing recommendations?

*BC Castrucci<sup>1</sup>, ML Kamb<sup>2</sup>, K Hunt<sup>2</sup>*

1. Division of Sociomedical Sciences, The Joseph L. Mailman School of Public Health of Columbia University, New York, NY,
2. Centers for Disease Control and Prevention, Atlanta, GA

**Background and Rationale:** To encourage consistent quality care of HIV counseling, testing, and referral, CDC has published standards and guidelines for publicly funded programs.

**Objective:** Compare published counseling, testing, and referral standards with actual practice in publicly funded HIV counseling and testing (C & T) sites.

**Methods:** From 6/15 to 7/15/1998, a structured telephone interview was administered to representatives from publicly funded HIV C & T sites, including HIV clinics, sexually transmitted disease clinics, drug treatment facilities, and family planning clinics. Site administrators chose representatives to be surveyed, allowing potential bias toward “best practices”.

**Results:** Interviews were completed for 73% (51/73) of targeted sites. Half (51%) of programs conducted client satisfaction surveys at least annually, and 40% required continuing education. Current guidelines recommend risk reduction plans be negotiated at pretest counseling; this was routinely done at 61% of sites. The guidelines also recommend that clients fully participate in sessions; this was done in post-test counseling for HIV-positive clients at 31% of sites and for HIV-negative clients at 23% of sites. Testing standards were usually met. All sites reported routine outreach for HIV-positive clients who did not return for their test results, and most (median, 90%) were found and notified. Outreach for high risk HIV-negative persons who did not return for results was rarely done. Nonetheless, many representatives (38%) did not support alternative methods for delivering test results apart from face-to-face interactions. Most sites (86%) met referral standards.

**Conclusions:** Even with significant bias toward “best practices,” the results indicate that publicly funded

HIV C & T programs have room for improvement in areas of counseling, providing HIV test results, and routine quality assurance of programs.

**Learning Objectives:** Compare actual practice to published guidelines for HIV counseling, testing, and referral in publicly funded clinics.

P126

### Sexual History Taking, Risk Assessment and Screening for Sexually Transmitted Infections (STIs): How Involved are Women's Health Care Providers?

*T Hogan<sup>1</sup>, WP Davis<sup>2</sup>, AM Rompalo<sup>3</sup>*

1. Region III STD/HIV Prevention Training Center (PTC), Baltimore City Health Department (BCHD), Baltimore, MD, 2. Howard University School of Medicine, Washington, DC and NIAID Summer Program in STDs, 3. Johns Hopkins Medical Institutions, Baltimore, MD

**Background:** The role of clinical health care providers (HCP) in the prevention and control of STIs is essential. HCPs need training to participate effectively. The first step toward developing such training requires a targeted needs assessment. The Region III PTC piloted a practice pattern survey to assess STI clinical training needs among clinicians, especially women's health care providers (WHCP) in Baltimore.

**Objectives:** To examine STI associated practice patterns and to identify critical training needs.

**Methods:** From July 1998 through June 1999, surveys were distributed to obstetrician/gynecologists, clinicians attending continuing education programs, and HCPs in the STD clinics. Completed surveys were entered into an EpiInfo database; items were measured on a 5-point Likert scale; clinic HCPs were used as controls; dichotomous variables were evaluated using a simple Chi square test; Likert mean scores were evaluated by using analysis of variance; and the Wilcoxon two sample test was applied to non-parametric data.

**Results:** Surveys from 67 clinicians in the Baltimore metropolitan area, 53 women's health care providers (WHCP) and 14 clinic HCPs, were included in this analysis. Although 94.3% of WHCPs reported access to CDC guidelines, only 69.7% of them reported

having formal protocols for the management of patients with STI related problems. Overall, WHCPs were less likely to conduct a directed sexual history and less likely to perform appropriate screening in asymptomatic individuals than the HCPs. Lack of insurance reimbursement was the most frequently identified barrier to performing STI screening tests.

**Conclusions:** Results suggest that WHCP in Baltimore would benefit from training in sexual history taking, compliance with state and local screening laws, and application of standard STI protocols.

P127

### Assessment Of STD And HIV Knowledge, Skills And Behaviors Among A Variety Of Clinical Providers and 1998 Recent Graduates

*JF Toney<sup>1</sup>, K Schmitt<sup>2</sup>, M Powelson<sup>2</sup>, J Dettis<sup>2</sup>, J Montero<sup>1</sup>*

1. University of South Florida, College of Medicine, 2. Florida Department of Health, Bureau of STD Prevention and Control

**Background:** Information published suggests that there is a difference among the training offered to physicians, nurse practitioners and other providers in the treatment of STDs and HIV/AIDS.

**Objectives:** To determine the knowledge, skills and abilities of recent graduates of medical and nurse practitioner programs and providers currently practicing in public health settings.

**Methods:** A Knowledge, Skills, Ability, Behavior Survey (KSAB) Survey was administered to 242 county health department clinicians, and recent graduates of medical schools and nurse practitioner programs concerning their knowledge and training in the treatment of STDs and HIV/AIDS.

**Results:** Attitudes on treating patients with STDs vary according to profession and training. Over 85% expressed ease in obtaining a sexual history, and 90% reported no difficulty in interacting with homosexuals/bisexuals and expressed ease in discussing sexual practices. A substantial percentage (33% - total, 62% - RNs) suggested that their training did not provide them with adequate instruction on obtaining a sexual

history; 70% of NP students had not been instructed in performing a male genital exam. Overall 26% (69% of NPs) were not aware of the state reporting STD laws. Overall 17% (39% NPs) felt they had not received adequate training in the treatment of STDs.

**Conclusions:** While a majority of clinical providers have been trained in the treatment of HIV and STDs, a significant minority still lacks training, awareness and/or sensitivity in treating patients with STDs. In particular, NP students appear to need the most instruction, since this group reported lacking the proper skills or training in the treatment of STDs. There should be an increased emphasis in these groups of providers given their increasing role in primary care settings.

**Learning Objective:** Describe differences among various types of practicing clinical providers and recent graduates in their attitudes, knowledge and skills in the treatment of STDs and HIV/AIDS.

## P128

### Are Routine Pelvic Exams Necessary Annually in Healthy Sexually Active Young Adults? STD Screening and Papanicolaou Smears in Military Recruits— an “Ideal” National Sample

*MA Shafer<sup>1</sup>, CB Boyer<sup>1</sup>, J Moncada<sup>1</sup>, K Flinn<sup>1</sup>, K Betsinger<sup>1</sup>, J Schachter<sup>1</sup>, S Brodine<sup>2</sup>, R Shaffer<sup>2</sup>*

1. University of California, San Francisco, CA, 2. Naval Health Research Center, San Diego, CA

**Rationale:** Most clinical protocols and policy regarding young women’s health are derived from clinic-based samples. In contrast, young women entering military service present a “near” ideal national cross-section since they are not seeking clinical care.

**Objective:** To determine the efficacy of routine pelvic exams to screen for STDs and cytopathology in healthy, sexually experienced young women.

**Methods:** All women entering the Marine Corps Recruiting Depot (the only recruit training center for women) have routine pelvic exams, STD screening (CT/GC LCx<sup>TM</sup>, Abbott-military lab) and

Pap smears. Prior to exam, all women were asked to participate in an intervention to prevent STDs and unintended pregnancy, to complete a survey about women’s health, and to provide a FCU for CT/GC LCx<sup>TM</sup>, and self-administered vaginal swabs for CT/GC LCx<sup>TM</sup> and trichomonas by In-Pouch TV<sup>TM</sup> (Biomed). Vaginal/urine specimens were processed in the author’s lab (JS). Paps were reviewed by 2 military pathologists.

**Results:** At baseline, 1550 Ss consented (95% participation); 1300 (85%) were sexually experienced (mean of 3 years), young (18.0 years median age), unmarried (91%), and diverse (C-55%, H-20%, AA-16%, As/Oth-9%). Some had a prior pregnancy (15%),  $\geq 1$  “casual” sexual partners in the prior 3 months (38%), STD-related symptoms (33%), and “usually” used contraception: condoms (41%); OCPs (33%), “Depo-Provera” (10%), and “withdrawal” (26%); 11% used no contraception. STD diagnoses included: CT (10%), GC (2%), TV (2%); 12% had  $>1$  STD. Pap smear results showed: 92% normal +/- benign changes, 7% “atypia”/LGSIL, 0.3% HGSIL, and no carcinoma.

**Conclusion:** Routine pelvic exams may not be efficacious to perform annually in all sexually active young women since CT and GC can now be identified without pelvic exams and because Papanicolaou (HGSIL) pathology requiring intervention appears rare.

**Learning Objective:** To examine the efficacy of using routine pelvic exams to screen for STDs and abnormal Pap smears in a normative population of young, sexually experienced women.

## P129

### Community Collaboration at the Buffalo John School

*J Andula, C Kohlmeier*

Erie County Health Department Preventive Health Services, Buffalo, NY

**Background and Rationale:** Complaints continued to Buffalo City Hall and the Police Department regarding prostitution in Buffalo. A program was developed to arrest Johns, and sentence them to attend a one-day program using this a deterrent to future solicitation. Many community organizations provide education in these classes including, The Erie County District

Attorney and Health Department, a sex addictions counselor, Project Reach, former prostitutes and a drug addictions counselor.

**Objective:** To provide education instead of incarceration to those arrested for solicitation.

**Methods:** The Buffalo Police Department operates Operation Johnny where a decoy is used to arrest those soliciting. Many of these Johns are then sentenced to the Buffalo John School where they receive education on sex and drug addiction, HIV, STD's, a prostitute's life and neighborhood concerns. They are offered testing for HIV, Syphilis, Hepatitis B and C. Many Johns are required to be examined at Preventive Health Services where they are tested for STD's and voluntarily HIV. The Johns complete an anonymous survey.

**Results:** The John School began on March 25, 1997. The school has had 587 attendees with four re-arrests. The recidivism rate is .0068%. Holding a John school every month has met with difficulty related to labor issues with the Buffalo Police Department and its union.

**Conclusions:** An alternative to incarceration of those arrested for solicitation has shown a very low recidivism rate. Methods to continue this program need to be examined as well as developing a similar program for prostitutes.

**Learning Objectives:** Identify alternative methods to reach those at high-risk for STD infection.

## P130

### Closing the Gap: Meeting the Sexual Health Needs of Women in Prostitution by Collaborating with Law Enforcement

*M Headlee, M Krempasky, K Dorian, D Coleman, W Collins, S Marion*

The Columbus Health Department Sexual Health Team,  
Columbus, OH

**Background:** The Columbus Health Department (CHD) in collaboration with the Franklin County Correctional Center (FCCC), community and law enforcement agencies began seeing need for STD testing for women charged with crimes relating to prostitution. Combined, these agencies realized gaps

in services existed for these women in large part because of the overburdened FCCC medical staff. Many women were released before they could be tested for STDs.

**Objectives:** To provide sexual health services for incarcerated women working in the sex industry field and determine the need for continued services based on positivity and client acceptance.

**Methods:** Members of the CHD Sexual Health Team working closely with the FCCC medical staff began offering on site testing for STD's in March of 2000. The CHD staff person is provided with a list of women who have been brought in on prostitution related charges, those women are brought to the medical area. Sexual health assessments are done with each client and they are offered LCR urine testing for chlamydia and gonorrhea and blood is drawn for syphilis. The results are returned to the client within one week and the FCCC medical staff does all necessary treatments.

**Results:** Our data is still being compiled but to date, we have tested 196 women discovering five syphilis cases and 30 women infected with chlamydia, gonorrhea or both. We have also been referred many women into our sexual health clinic and have helped some women address addiction issues.

**Conclusion:** The women have been very receptive to testing in such an efficient and non-threatening manner. The data shows these women are at high risk for STDs and continued collaboration and expansion of services are warranted.

#### Learning Objectives:

1. Identify the need for collaboration with the community and law enforcement personnel in addressing the sex industry.
2. Overcome barriers in the corrections setting.
3. Understand the importance of meeting this hard to reach population and providing services.

## P131

### STDs and Risk of HIV Infection among Male Transvestites in Jakarta, Indonesia

*MR Joesoef<sup>1</sup>, M Gultom<sup>2</sup>, Inong<sup>3</sup>, JS Moran<sup>1</sup>, JS Lewis<sup>1</sup>, T Muhaimin<sup>3</sup>, CA Ryan<sup>1</sup>*

1. Centers for Disease Control and Prevention, Atlanta, USA, 2. HIV/AIDS Prevention Project, Jakarta, Indonesia, 3. Ikatan Ahli Kesehatan Masyarakat Indonesia (IAKMI), Jakarta, Indonesia

**Background:** Many male transvestites (“waria”) in Indonesia engage in receptive anal and oral intercourse with multiple partners for pay. Although this behavior clearly puts them at risk of STDs, including HIV infection, little is known about the prevalence of STDs among them.

**Objectives:** To learn the prevalence of and risk factors for infection with *Neisseria gonorrhoeae* (NG), *Chlamydia trachomatis* (CT), and *Treponema pallidum* (TP) among waria in Jakarta, Indonesia.

**Methods:** We offered free primary health care services and health education at a clinic established to serve waria. From August to December 1999 we offered screening for rectal and pharyngeal infections with CT and NG by DNA probe (GenProbe PACE II) and for TP by a nontreponemal serological test.

**Results:** Of 296 participants (median age 28 years), 93% reported having been paid for sex, 73% reported having had anal sex (median 8 times/month), and 71% reported oral sex (median 10 times/month). Condom use was low, only 68% reported ever using a condom. With non-regular partners, only 11% reported always using a condom. Of 289 participants screened for STDs, NG was found in the rectum of 12.6% and the pharynx of 4.1%; CT was found in the rectum of 3.8% and the pharynx of 2.4%. Both infections were more common among younger warias: of those under 30 years of age, 25.0% were infected whereas only 9.1% of older warias were infected. Syphilis seroreactivity was very common; 49.1% had reactive nontreponemal tests of which 93.5% were confirmed by treponemal tests. Of the 129 with positive treponemal tests, 42.6% had nontreponemal test titers greater than 1:8. Reactive serology was most closely associated with years of paid sex experience: 70.8% of those with 20 or more years experience were reactive compared with 30.5% of those with less than 5 years.

**Conclusions:** Many warias in Jakarta report frequent, unprotected, receptive anal intercourse for pay and many are infected with NG or CT or have reactive serological tests for syphilis. Waria in Jakarta will be at risk of HIV infection unless they avoid unprotected receptive anal intercourse.

**Learning Objective:** Describe risk factors for STDs and demographic differences in STD prevalence among transvestites.

## P132

### STD Prevalence in Females Presenting to a University Emergency Department With Abdominal, Genitourinary or Pregnancy-Related Complaints

*LH Bachmann, H Peters, D Pigott, K Denninghoff, Marga Jones, T Terndrup, EW Hook III*

The University of Alabama at Birmingham, Birmingham AL

**Background and Rationale:** For many people, care provided by Emergency Departments (EDs) serves as the chief source of health care, including those without health insurance. Patients seeking care in hospital emergency rooms are also among those likely to be at high risk for STDs.

**Objectives:** To determine the prevalence of gonococcal and chlamydial infections in females presenting to a university EDs with complaints which are sometimes associated with the presence of treatable STDs, to explore other possible predictors of STD in this setting and to determine the proportion of infections that were detected and appropriately treated through standard ED care.

**Methods:** Females presenting to a university EDs with abdominal, genitourinary or pregnancy-related complaints were recruited to answer a questionnaire and submit urine for ligase chain reaction (LCR) testing for *N. gonorrhoeae* and *C. trachomatis*.

**Results:** In this ongoing study 50 females agreed to participate. The mean age was 24 (range 18-34). Forty-one patients were African-American, 8 patients were white and 1 was Hispanic. Fifty-nine percent of enrolled patients presented with abdominal pain, 28%

complained of vaginal symptoms (bleeding, itching or discharge) and 12% of patients had pregnancy-related or other genitourinary complaints. Fifty-eight percent of patients were pregnant. Nine of 50 women (18%) had gonorrhea and/or chlamydial infection at the time of presentation and of these, 53% left the EDs without appropriate treatment.

**Conclusions:** Substantial numbers of treatable STDs continue to go undetected by usual ED care. Opportunistic screening of at risk women seeking urgent care may be a useful addition to current STD control measures.

**Learning Objective:** Describe the prevalence and predictors of STDs in females seeking care in a university EDs.

### P133

## Screening for Chlamydia in Non-Traditional Settings in California: A Survey of Local Activities

*HM Bauer<sup>1</sup>, S Herbert<sup>2</sup>, G Bolan<sup>3</sup>*

1. University of California, San Francisco, CA, 2. Chlamydia Action Coalition, San Francisco, CA, 3. STD Control Branch, California Department of Health Services, Berkeley, CA

**Background and Rationale:** Screening for chlamydia in non-traditional settings provides an opportunity to reach at-risk youth who do not access clinical STD services.

**Objective:** To determine the scope and characteristics of innovative chlamydia screening activities throughout California.

**Methods:** A survey of STD Controllers in California's 61 local health jurisdictions was conducted in Spring 2000. Controllers were asked to provide information about local chlamydia screening projects carried out in non-traditional venues within the past 2 years. Specifics on the type of venue, duration of program, recruitment activities, participation, diagnostic tests, positivity rate, and treatment rates were also collected. In addition, Controllers were asked to comment on challenges involved in the different programs. Data were analyzed using SPSS.

**Results:** Nearly half of the Controllers described at least one screening project in the past 2 years. A total of 55 local projects were conducted in a variety of venues, including corrections (22), schools (15), community-based organizations (4), mobile vans (4), and others (10). The median duration of the projects was 1 year (range 1 day to 3.5 years). The majority of projects targeted both male and female adolescents and used urine-based amplified testing. Projects varied in size from 3 to 17,000 screened (median 200) and demonstrated a median chlamydia positivity of 5.4% (range 0-30%). Project challenges included obtaining funding, locating youth who test positive, providing partner services, and gaining the trust and cooperation of partner organizations and youth.

**Conclusions:** For many local health jurisdictions in California, screening in non-traditional venues has been an effective way to reach high-risk youth. Further, information collected on prevalence and feasibility can be useful in sustaining funding for the projects.

### P134

## STD Screening in Non-Clinical Sites: Outreach at a Bathhouse, Jail and HIV Anonymous Testing Site (ATS)

*H Calvet<sup>1</sup>, N DeAugustine<sup>1</sup>, M Arango<sup>1</sup>, I Puerta<sup>1</sup>, M Williams<sup>1</sup>, J Ketsdever<sup>1</sup>, G Bolan<sup>2</sup>*

1. Long Beach Department of Health and Human Services, Long Beach, CA, 2. California State STD Control Branch

**Background:** Urine-based ligase chain reaction (LCR) testing for gonorrhea (GC) and *Chlamydia trachomatis* (CT) infections has revolutionized STD screening. Recommendations encouraging screening in non-clinical settings and a recent outbreak of syphilis among men who have sex with men (MSMs) in our community prompted the initiation of 3 new screening programs (local bathhouse, jail and HIV ATS) in Long Beach, California.

**Objectives:** To determine the acceptability of confidential STD testing in a HIV ATS, and to determine the prevalence of HIV, CT, GC and syphilis among those accepting testing.

**Methods:** HIV/STD counselors are available at each site at pre-set times to offer confidential STD (urine LCR for GC and CT, serum syphilis serology) and HIV testing. Results are given the following week.

**Results:** Data are available from April 2000 to present. Confidential testing was well accepted at HIV ATS with 66% of clients (64% of men, 78% of women) consenting.

Result	Site			
	Bathhouse n = 49	Men's Jail n = 46	Women's Jail n = 29	HIV ATS n = 101
HIV+	3 (6%)	1 (2%)	1 (3%)	—
CT+	2 (4%)	1 (2%)	1 (3%)	1 (1%)
GC+	0	0	0	0
Syphilis+	1 (2%)	0	1 (3%)	0

**Conclusions:** Reaching these populations is challenging and initial prevalence of disease is low, so further study is needed to determine if such efforts are cost-effective.

## P135

### Chlamydia Prevalence and Contraceptive Use Among Migrant Farm Workers at California-Mexico Border

*J Miller*<sup>1</sup>, *KT Bernstein*<sup>1</sup>, *R Raecker*<sup>2</sup>,  
*A Binggeli*<sup>2</sup>, *G Bolan*<sup>1</sup>

1. Sexually Transmitted Disease Prevention and Control Branch, California Department of Health Services, Berkeley, CA,
2. Imperial County Department of Health, El Centro, CA

**Background and Rationale:** Migrant farm workers are an underserved population in California, with little known about their STD morbidity and health care behavior

**Objective:** (1) To determine the prevalence of *Chlamydia trachomatis* and (2) to describe the contraceptive utilization and health care seeking behavior among Southern California migrant workers.

**Methods:** In a cross sectional study design, participants were recruited from (1) packing sheds, (2) farms, and (3) community-based border stations set up along the Mexicali/Calexico border. They were interviewed regarding health care seeking behavior, sexual and contraceptive practices and supplied urine specimen containers by trained health care outreach workers and clinicians. Ligase Chain Reaction (LCR: Abbott Labs, Inc) was utilized to determine chlamydial infection.

**Results:** Between December 1999 and March 2000, 919 male and female migrant workers were

approached for participation; six percent (56) refused. Chlamydia screening was performed on 863 urine specimens, with data available on 854. 530 (62%) were male, median age was 38 and almost 90% were born in Mexico. Overall, the chlamydia positivity was 0.6% and did not differ significantly by gender. Over 85% reported one current sex partner and no new sex partners in the last three months. Approximately 50% reported no use of contraceptive methods.

**Conclusions:** Chlamydia prevalence is low in this sample of border migrant farm workers which is consistent with overall reported monogamy and age of participants. Further assessments are needed to better define the population at-risk for STD among migrant farm workers

**Learning Objectives:** Describe the migrant farm population in Southern California. Learn new methods of assessing STDs in migrant populations.

## P136

### Sexually Transmitted Diseases: Gonorrhea, Chlamydia, and Syphilis Trends in American Indian and Alaska Native Populations from 1989 - 1998

*S Pirio*<sup>1</sup>, *L Shelby*<sup>2</sup>, *J Cheek*<sup>3</sup>

1. University of New Mexico, Albuquerque, NM,
2. Indian Health Service, Albuquerque, NM,
3. Indian Health Service, Albuquerque, NM

**Background:** In a previous study, gonorrhea and syphilis case rates were found to be twice as high in American Indian and Alaska Native (AI/AN) populations compared to non-AI/AN populations from 1984-1988.

**Objective:** To determine if this disparity persists, gonorrhea, chlamydia, and syphilis rates were examined in 14 states using surveillance data from 1989-1998.

**Methods:** Health Departments in Alaska, Arizona, California, Colorado, Minnesota, Montana, New Mexico, North Carolina, North Dakota, Oklahoma, Oregon, South Dakota, Utah, and Washington provided numbers of gonorrhea, chlamydia, and primary and secondary syphilis cases. To determine crude rates per 100,000, general population data were

obtained from 1990 U.S. Census and AI/AN population data were acquired from Indian Health Service. Average annual case rates were determined.

**Results:** While gonorrhea rates declined in both groups, AI/AN rates ranged 1.1 to 1.9 times higher than rates in non-AI/AN. Alaska had the highest gonorrhea rate which was 3.61 times higher for AN than non-AN (321.59/100,000 vs. 86.63/100,000). Chlamydia rates increased for both groups with AI/AN rates 2.0 to 3.7 times higher than rates in non-AI/AN. South Dakota had the highest AI chlamydia rate which was 7.5 times higher than non-AI (730.93/100,000 vs. 97.44/100,000). Although initially syphilis rates declined for both populations, rates began to increase in 1996 with AI/AN rates up 67.2% (11.99 to 36.54/100,000) and non-AI/AN up 12.4% (20.28 to 23.18/100,000).

**Conclusions:** Disparities in chlamydia and gonorrhea case rates between AI/ANs and Non-AI/ANs have persisted. Average syphilis rates have declined in both populations although rates in AI/ANs have increased more quickly than in non-AI/AN since 1996.

**Learning Objectives:**

1. Describe STD Trends in AI/AN populations over the last 10 years.
2. Understand that health disparities exist between AI/AN populations and non-AI/ANs in 14 states.

## P137

### Race Misclassification of American Indians in Oklahoma State STD Surveillance Data

*D Thoroughman<sup>1</sup>, D Frederickson<sup>2</sup>, B Pierson<sup>2</sup>, M Crutcher<sup>2</sup>, D Cameron<sup>3</sup>, J Cheek<sup>4</sup>, L Shelby<sup>4</sup>*

1. Indian Health Service, Albuquerque, NM, 2. Oklahoma State Health Department, Oklahoma City, OK, 3. Indian Health Service, Oklahoma City, OK, 4. Indian Health Service, Albuquerque, NM

**Background:** Sexually transmitted diseases (STDs) are in epidemic proportions in the United States and the burden of disease is high in American Indian and Alaska Native (AI/AN) populations. Due to misclassification of race within STD surveillance data, the rate of occurrence of STDs such as chlamydia, gonorrhea, and syphilis, may be much higher than reported for minorities like AI/ANs.

**Objective:** To assess the extent of racial misclassification of AI/ANs existing in STD surveillance data.

**Methods:** The Oklahoma State STD surveillance data for calendar year 1995 was matched to the Oklahoma State Indian Health Service (IHS) Patient Registry to determine the number of AI/AN females who had chlamydia, gonorrhea, or syphilis, but were not listed in Oklahoma surveillance data as AI/AN.

**Results:** Accounting for racial misclassification increased the rate of chlamydia for AI/AN females in Oklahoma by 32% (342/100,000 vs. 452/100,000) in the overall population. For gonorrhea, the rate increased by 57% (94/100,000 vs. 148/100,000) and syphilis 27% (15/100,000 vs. 19/100,000). Misclassified AI/AN females were most likely to be classified as "white" and the likelihood of misclassification increased with lower percentage of AI/AN ancestry.

**Conclusions:** These findings indicate that rates of STDs may be underestimated for AI/AN populations nationwide and that racial misclassification on state surveillance data may be inaccurate in characterizing the burden of disease in minorities.

**Learning Objectives:** Describe the extent of racial misclassification of AI/ANs in STD surveillance data.

## P138

### STD Data Management in the New Millennium, Boldly Going Where No Program has Gone Before

*SJ Kowalewski*

Bureau of Communicable Diseases, STD Program, Pennsylvania Department of Health

**Background:** A quiet revolution is occurring on how the Sexually Transmitted Diseases (STD) are reported and managed in Pennsylvania. Since 1992, the STD Program has been actively involved in developing electronic solutions to the labor-intensive paper paradigm, a paradigm that the program has used for more than thirty years. At the heart of this shift, is the aggressive development of an electronic surveillance infrastructure at the central, district, and local county/municipal levels. Starting in 1992 with the installation of the STD MIS on a single standalone machine, Pennsylvania has seen the complexity of the

system expand to installation of the software onto a Local Area Network, then a Wide Area Network and eventually a fully integrated statewide system.

**Objective:** Provide an overview of Pennsylvania's STD Surveillance Infrastructure (SSI).

**Methods:** In this workshop we will present an overview of how the Pennsylvania STD Surveillance Infrastructure developed to its current placement.

**Results:** We will focus on the key developments of the system and the resultant challenges and opportunities that these new developments placed on both the local and State STD control programs.

**Conclusions:** With the statewide implementation of a STD Management Information System, the development of electronic laboratory reporting, and the development of a comprehensive STD Web site, we believe that the Pennsylvania STD Program has laid out a blueprint for an integrated SSI that other state STD Programs can follow. This blueprint, if properly followed, can allow states to develop a system where prevention strategies are based on the analysis of data rather than precedent or conjecture.

## P139

### The Reliability of Zip Codes Reported by Syphilis Patients to the State STD Registry

*Y Tang, M Whelan, W Levin, G Coman, W Dumas, P Etkind*

Division of STD Prevention, Bureau of Communicable Disease Control, Massachusetts Department of Public, Boston, Massachusetts

**Background:** Many public health studies use zip codes as geographic units to identify populations at risk, or to compare public health indicators. We tried to estimate the accuracy of zip codes reported by comparing them to actual zip codes. We also tried to find what caused the discrepancies.

**Methods:** We took all the syphilis cases from the Massachusetts STD registry from 1986 to 1998 for geocoding. The software we used was MapInfo. During the geocoding process, we retained the output zip codes, which accompanied the input street

addresses, and regarded them as the standard. We analyzed the differences between the reported zip codes and the output zip codes. Further analyses stratified by large cities with multiple zip codes, and by health facilities with large volumes of reported cases, were performed in order to see whether there was a pattern causing the discrepancies.

**Results:** Syphilis cases (N = 10,620) were geocoded. Similar zip codes were found in 5,350 cases (50.4%); 1,905 (17.9%) had reported zip codes different from output zip codes. Among the rest, 632 (6.0%) were jail inmates; 299 (2.8%) had addresses missing; 262 (2.5%) addresses could not be geocoded; hospitals, schools, detoxification facilities, etc. accounted for 77 (0.7%); homeless people 61 (0.6%); PO box numbers 62 (0.6%). No significant differences in distributions were found among cities, nor among big health care providers. 36% of the discrepancies in big cities were in adjacent zip code areas.

**Conclusion:** The reported zip codes by patients were not accurate in this syphilis registry. An evaluation of zip code accuracy is suggested before using zip code as an identifier for public health studies.

## P140

### NETSS Applications for Syphilis Elimination

*E Swint, E Magee, R Voigt, G Counts*

Centers for Disease Control and Prevention, Atlanta, GA

**Background and Rationale:** Two of the five strategies in Syphilis Elimination National Plan address enhanced surveillance and rapid outbreak response. While the primary responsibility for these two activities lies with local/state STD programs, it is imperative that the Division of Sexually Transmitted Diseases and Prevention (DSTD) be aware of current syphilis morbidity to ensure that appropriate activities are implemented to reduce syphilis morbidity and to prevent its re-emergence in other areas.

**Objective:** To describe tools using National Epidemiology Telecommunications Surveillance System (NETSS) data that keep CDC staff informed with national syphilis morbidity and to identify existing and newly emerging areas with infectious syphilis.

**Methods:** States use NETSS as a weekly electronic transmission surveillance system to submit new line-listed STD cases to CDC. This system is more rapid and complete than a hard-copy STD reporting system currently being phased out. Six activities designed around NETSS data include 1) data quality monitoring examining the timeliness, completeness of accuracy of incoming data; 2) weekly status describing syphilis morbidity at national, project and county levels; 3) profiles describing county-level demographic and programmatic trends over a 3-year period; 4) outbreak threshold detection algorithms applied to all counties uniformly to identify areas with increasing syphilis; 5) follow-up monitoring of cases submitted by targeted counties; and 6) special studies describing U.S. trends and patterns of syphilis.

**Results:** Activities are conducted on a routine basis and shared with epidemiologists and program consultants involved with syphilis elimination.

**Conclusions:** These NETSS activities supplement activities being performed at the state and local levels. They allow for a more complete and timely response to changing syphilis within the United States.

## P141

### Geospatial Analysis of Structural Predictors of HIV/AIDS Rates at the Census Tract Level

*RA Scribner<sup>1</sup>, DA Cohen<sup>1</sup>, A Bedimo<sup>1</sup>, TA Farley<sup>2</sup>*

1. LSU Health Sciences Center, New Orleans, LA,
2. Louisiana Office of Public Health, New Orleans, LA

**Background:** Several studies have noted the geographic association between structural characteristics of neighborhoods (i.e., alcohol outlet density, neighborhood deterioration) and gonorrhea rates in geospatial studies. If a theorized relation between neighborhood environment and gonorrhea rates is mediated by high-risk sexual behavior a similar association is expected for HIV/AIDS rates.

**Objective:** To determine the geographic distribution and the geospatial predictors of HIV/AIDS rates among various HIV risk groups at the census tract level in New Orleans, Louisiana.

**Methods:** All HIV cases reported in the HARS database between 1994 and 1998 in New Orleans were geocoded and aggregated by census tract (n=153). Ecologic analysis of five year HIV/AIDS incidence rates to identify census tract level predictors including socioeconomic status, alcohol availability, physical disorder, park density and transience were conducted.

**Results:** A total of 2,507 cases of HIV/AIDS were reported between 1994 and 1998 of which 1,729 (69%) were geocoded. Overall census tract HIV/AIDS rates were associated with high alcohol availability and physical disorder. Census tract HIV/AIDS rates among MSMs were associated with high socioeconomic status and high alcohol availability. HIV/AIDS rates among high-risk heterosexuals were associated with low socioeconomic status, high alcohol availability and physical disorder. Census tract HIV/AIDS rates for IDUs had a pattern similar to rates among high-risk heterosexuals.

**Conclusions:** HIV/AIDS cases are geographically distributed by risk category at the census tract level. The geographic distribution of HIV/AIDS cases among the risk groups can be predicted by structural factors that characterize neighborhoods including socioeconomic status, alcohol availability and physical disorder.

#### Learning Objectives:

1. Describe the geographic distribution of HIV/AIDS rates at the census tract level.
2. Identify the structural factors at the census tract level that predict HIV/AIDS rates among the various HIV/AIDS risk categories.

## P142

### Neighborhood Housing Associated with Sexually Transmitted Diseases in Louisiana

*J Painter<sup>1</sup>, T Farley<sup>2</sup>*

1. Epidemic Intelligence Service, CDC,
2. Tulane School of Public Health, New Orleans

**Background and Rationale:** Blighted and abandoned housing at the census block group level in New Orleans have been associated with gonorrhea after controlling for race and poverty. According to “broken windows” theory, living in deteriorated neighborhoods negatively influences health behaviors.

**Objective:** To determine whether rates of vacant and boarded-up housing at the census tract level are associated with gonorrhea and syphilis rates in the state of Louisiana.

**Methods:** We conducted an ecologic study of 1038 census tracts in Louisiana with >1,000 persons, analyzing the relationship between the rates of gonorrhea and syphilis (between 1993 and 1997) and 1990 census counts of: vacant or “boarded-up” housing units per square mile, percent black race, and percent persons in poverty.

**Results:** Gonorrhea in men correlated highest with percent black race ( $R=.59$ ) and with boarded-up housing units per square mile ( $R=0.57$ ). Neither vacant units per square mile ( $R=.14$ ), nor percent poverty ( $R=.14$ ) were strongly correlated with gonorrhea rates. In a multivariate model all variables except poverty were associated with gonorrhea ( $P<.0001$ , model  $R=.85$ ). Syphilis correlated highest with percent black race ( $R=.75$ ), followed by percent poverty ( $R=.66$ ), boarded-up housing units ( $R=.54$ ), and vacancy per square mile ( $R=.37$ ). In a multivariate model, all variables except boarded-up were associated with syphilis ( $P<.0001$ ,  $R=.82$ ).

**Conclusions:** Gonorrhea and syphilis rates statewide in Louisiana are associated with neighborhood housing conditions, independent of race and poverty. Deteriorated neighborhood conditions may be an important modifiable structural factor influencing STD rates.

**Learning Objective:** Examine association between housing and STD rates in Louisiana.

## P143

### Assuring Comprehensive Reporting of Positive Gonorrhea and Chlamydia Weekly Laboratory Data in Illinois Counties

*R Zimmerman, K Wood, C Rabins, E Renier*

Illinois Department of Public Health STD Section, Springfield, IL

**Background and Rationale:** Illinois laboratories are required to report weekly to local county health departments (LHDs) the number of chlamydia (CT), gonorrhea (GC) and syphilis tests; total number of positive tests; demographic information about infected

individuals; and medical provider information. LHDs forward aggregate laboratory data to the Illinois Department of Public Health STD Section (ISS). LHDs are responsible for ensuring adequate treatment of infected individuals and forwarding morbidity reports to the ISS documenting diagnosis and treatment. ISS tabulates incidence data from morbidity reports, not positive test results. Each positive chlamydia and gonorrhea test result should have a corresponding morbidity report or documentation that morbidity was assigned to another project area.

**Objectives:** 1) Determine the percent of positive chlamydia and gonorrhea tests from private and commercial laboratories that are not accounted for in morbidity/incidence data, 2) Determine the need and feasibility of conducting quality assurance audits of LHDs processing positive tests for chlamydia and gonorrhea.

**Methods:** Five LHDs forwarded to ISS copies of weekly laboratory reports from October-December 1999. ISS conducted a search in the morbidity database to determine if the LHD submitted a morbidity report for positive chlamydia and gonorrhea test results.

**Results:** LHD#1 submitted 169 morbidity reports for 228 (74%) positive chlamydia and gonorrhea laboratory test results; LHD#2-295 morbidity reports for 318 (93%) positive CT/GC test results; LHD#3-55 morbidity reports for 118 (47%) positive CT/GC test results; LHD#4-191 morbidity reports for 506 (38%) positive CT/GC test results; LHD#5-92 morbidity reports for 101 (91%) positive CT/GC test results. Overall, 802 morbidity reports submitted for 1271 (63%) positive CT/GC test results, thus 37% of positive tests are not reflected in incidence data publicized by IDPH.

**Conclusions:** The current reporting system needs to be revised to ensure that 100% of positive chlamydia and gonorrhea results are reflected in morbidity/incidence data.

**Learning Objectives:** Describe the chlamydia and gonorrhea morbidity and weekly laboratory reporting system. Describe measures on how to improve complete reporting of chlamydia and gonorrhea morbidity in Illinois.

P144

## Illinois STD Prevalence Monitoring

*A Studzinski, C Rabins*

Illinois Department of Public Health STD Section, Springfield, IL

**Background and Rationale:** Prevalence monitoring data can be used to determine and track the incidence of STDs in selected populations, monitor trends in volume and positivity of testing, document successful outcomes and cost benefits of new testing methodologies, monitor productivity of screening sites, establish and monitor implementation of screening protocols, and track the impact of screening programs. Denominator data (information on negative tests) are required for prevalence monitoring. Illinois is one of very few states which receive both numerator and denominator laboratory data.

**Objective:** To demonstrate the use and importance of prevalence data for documenting and tracking program objectives and activities.

**Methods:** The IDPH STD Section (ISS) receives summary numerator and denominator gonorrhea, chlamydia, and syphilis laboratory testing data from private laboratories and line-listed data, which include negative as well as positive results from the three IDPH Laboratories. Summary data are submitted by private laboratories to their local health department (LHD) and forwarded by the LHD to the ISS on scannable teleforms; the data are stored in an Access database. Line-listed data, including demographics, are electronically transmitted to the ISS by the IDPH Laboratories and imported into an Access database. Reports are produced monthly and ad hoc for internal use by the ISS and quarterly for distribution to local health departments.

**Results:** During 1999, 195,000 tests for chlamydia (6.9% positive) and gonorrhea (5.0% positive) were performed at IDPH laboratories; 542,000 chlamydia (4.6% positive) and 547,000 gonorrhea (2.5% positive) tests were performed at private laboratories, which are required to report weekly to the ISS. Gonorrhea and chlamydia prevalence monitoring data from private and public laboratories for the past five years will be presented.

**Conclusions:** Summary and line-listed STD testing data from private and public health laboratories which include information on negative as well as positive test

results are an important component of STD prevalence monitoring programs.

**Learning Objective:** Understand the usefulness of prevalence monitoring data for STD programs.

P145

## Progress in Electronic Laboratory Reporting for Infectious Diseases in Texas

*D Hamaker, M Thomas*

Bureau of HIV/STD Prevention, Texas Department of Health, Austin Texas

**Background:** The Texas Department of Health Bureau of HIV/STD Prevention has been working on the implementation of electronic laboratory reporting utilizing HL-7 and other technologies since 1997 to enhance STD reporting and surveillance.

**Objectives:** To describe the process of implementation of electronic laboratory reporting to date and discuss "lessons learned" and determine further needs to complete implementation.

**Methods:** The HIV/STD Prevention Surveillance Branch partnered with the Infectious Disease Epidemiology and Surveillance (IDEAS) program and local health departments to begin the development of an electronic laboratory reporting system in Texas. The programs approached the larger private laboratories that are major surveillance reporting sources and designed systems to provide an electronic laboratory reporting system for them that would allow the laboratories to report all public health notifiable conditions and diseases. As STD morbidity is 85% of all reportable conditions, an electronic laboratory reporting would significantly enhance STD reporting and surveillance.

**Results:** Progress to date includes the ability to gather data through a single point of contact from major national laboratories using HL-7 data format. Other laboratories are also reporting all public health conditions electronically via ASCII format.

**Conclusions:** Further work needs to be done to streamline and refine the electronic laboratory process, to broaden the scope to include public health laboratories in Texas and to the knowledge gained and the

conceptual process to other state and local health departments.

**Learning Objective:**

1. To identify the steps needed to begin implementation of an electronic laboratory reporting system to enhance STD reporting and surveillance.
2. To recognize the importance of the HL-7 data format for electronic laboratory reporting.

## P146

### Enhancing Collection of Race/Ethnicity Data for an STD Case Registry

*J Chen, P Etkind, G Coman, M Whelan, Y Tang*

Massachusetts Department of Public Health, Jamaica Plain, MA

**Background:** Missing demographic data, such as race/ethnicity, compromises the power of surveillance data analyses and the resultant delivery of services to higher risk groups. With 34% of such data missing in its morbidity database, the STD Division looked at ways to improve upon collecting race and ethnicity data.

**Objectives:** The objective was to investigate methods that might improve our ability to capture race and ethnicity data on reported cases.

**Methods:** Two methods were tried. The first was an intention to match cases with birth records. The second was to call reporting physicians to ask for missing information.

**Results:** The case/birth registry match was not useful for us. In MA, the Birth Registry is computerized since 1986. Data on only the youngest cases could be ascertained. Calling physicians on 343 cases yielded additional information on 143 cases (41.7%), which only increased the total of cases with complete information to 70%. Getting the information was laborious (an average of 2.1 calls per case).

**Discussion:** Calling reporters did not add much to our data. We will discuss the potential of the use of ethnic surname lists as another possible solution to this problem.

## P147

### Gonorrhea and Chlamydia Surveillance by A Major HMO in Massachusetts

*M Whelan<sup>1</sup>, Y Tang<sup>1</sup>, G Coman<sup>1</sup>, S Ratelle<sup>1</sup>, P Etkind<sup>1</sup>, D Yokoe<sup>2</sup>, G Tao<sup>3</sup>,*

1. Division of STD Prevention, Massachusetts Department of Public Health, Boston, MA, 2. Harvard Pilgrim Health Care, Boston, MA, 3. Centers for Disease Control and Prevention, Atlanta, GA

**Background:** Clinician reporting of STDs under-represents the true burden of infections in populations. Laboratory reporting may better reflect true incidence of laboratory-defined infections such as Chlamydia and Gonorrhea. A system of laboratory reporting supplemented by clinical information (“enhanced laboratory reporting”) was developed with a large staff-model HMO.

**Objective:** We determined the efficiency of enhanced laboratory reporting by matching positive laboratory tests for chlamydia and gonorrhea with the MSTD case registry.

**Methods:** The HMO provided named positive lab test data for gonorrhea and chlamydia from 1995-1997. MSTD matched this with case registry data. The criteria for matching were the last name, first name, gender, date of birth, with the same diagnosis dated within 30 days or less.

**Results:** 152 HMO duplicate records were excluded. 1,386 records, representing 1,222 HMO patients, were matched with 124,391 individuals in the MSTD registry. 1,025 out of 1,386 HMO records (74%), or 926 individuals out of 1,222, (76%) were matched with MSTD registry patients. Among the 361 unmatched records, 245 records belonged to patients who were not in the STD registry. The MSTD registry had 988 matched individuals with 1,207 records. Among them, 182 records did not match with HMO data.

**Conclusion:** In this study, 26% of cases with positive lab results were not reported to the State STD registry. Direct lab reporting can enhance surveillance dramatically.

**P148****Pelvic Inflammatory Disease—How Accurate are Incidence Estimates**

*SA Jones, M Beller*

State of Alaska, Section of Epidemiology

**Background and Rationale:** In the U.S., pelvic inflammatory disease (PID) is a major cause of female infertility, ectopic pregnancy, chronic pelvic pain, and dyspareunia. State and local public health agencies conduct surveillance for gonococcal and chlamydia infections but generally do not conduct surveillance for PID. The identification of PID cases is complicated by diagnostic uncertainty and attempts to estimate the magnitude of the problem is difficult.

**Methods:** Medical record review of patients that had received an International Classification of Disease, Ninth Revision (ICD-9 code) considered to be PID in Anchorage during 1994-1995, at three hospitals, a multi-facility urgent care center, and a large family practice clinic. Confirmed PID was defined using US Centers for Disease Control and Prevention criteria. For each record identified, the actual PID signs and symptoms, laboratory test and epidemiologic factors were compared to a standard PID case definition.

**Results:** Of the 513 records identified and reviewed, 280 (54%) either had a clinical diagnosis of PID (189) or met the definition of a confirmed case (91). The ICD-9 codes previously used to estimate PID incidence had predictive values positive for confirmed PID and clinical PID of 18% and 37% respectively.

**Conclusions:** The ICD-9 codes previously used to identify PID had poor performance. Previous estimates of PID incidence may have over estimated the burden of disease and distorted the characteristics of women with PID.

**Learning Objective:** Understand that PID estimates based ICD-9 codes alone may incorrectly classify women as having PID when they do not meet a standard case definition for PID.