

# Integrating *Chlamydia trachomatis* Control Services For Males in Female Reproductive Health Programs

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*Chlamydia trachomatis* is the most commonly reported infectious disease in the United States. Although more than 700,000 cases were reported in 2000, the total number of annual cases—reported and unreported—is estimated to be three million.<sup>1</sup> The majority of severe consequences of untreated chlamydia occur in women. Of women who are not treated, 30% will develop pelvic inflammatory disease (PID), and approximately one-third of these will become infertile, have ectopic pregnancies or develop chronic pelvic pain.<sup>2</sup> Prevention of these consequences is dependent upon screening to identify asymptomatic infection and effective partner management to decrease the risk of reinfection.

Expanded chlamydia screening has resulted in decreases in prevalence among women in sites monitored by the Centers for Disease Control and Prevention (CDC).<sup>3</sup> However, these decreases have not been consistently sustained, and current levels of prevalence may be associated with lack of chlamydia testing and treatment among males. Indeed, case-based reported chlamydia rates among women may be 4–5 times the rates among men, because women are more likely to obtain care and because guidelines exist for chlamydia screening among women. These data suggest that male sexually transmitted disease (STD) services need to be improved to ensure that partners of infected women are tested and treated. One approach is to expand strategies aimed at controlling chlamydia to males by integrating male services in programs serving women's reproductive health needs.

## RATIONALE FOR MALE CHLAMYDIA SERVICES

A number of reasons support the integration of male services for chlamydia into women's reproductive health services. By providing care to men who might otherwise not know they are infected or not seek services, integration provides opportunities to prevent reinfection in females, to decrease costs associated with repeat infection in females and to increase male awareness of chlamydia.

## Preventing Reinfection

Chlamydia is frequently asymptomatic, and this characteristic may lead to persistent and recurrent infections.<sup>4</sup> In fact, previous chlamydia infection is a good predictor of future chlamydia infection,<sup>5</sup> even after unsafe sexual behavior is taken into account.<sup>6</sup> Moreover, repeat infections carry an increased risk of hospitalization for ectopic pregnancy and PID.<sup>7</sup> A successful, long-term treatment of chlamydia infection must address ways to reduce exposure to untreated, potentially infected partners.

Partner management, in the form of partner notification or patient-delivered partner therapy, is an effective strategy that may provide one avenue for reducing subsequent infections in treated individuals.<sup>8</sup> Partner notification consists of contacting infected individuals' sexual partners and asking them to get tested and, if necessary, treated; it may be initiated either by the health care provider or by the local health department. Patient-delivered partner therapy, in which patients are given additional medication to administer to their partners, is an alternative that may be effective in situations where partners are unlikely or unwilling to come to the health care facility. Evidence from a randomized, controlled trial demonstrated that when women were the primary contact, the effectiveness of patient-delivered partner therapy in preventing reinfection was comparable to and possibly greater than that of partner notification.<sup>9</sup>

In general, reproductive health programs vary widely in their ability to conduct effective partner management, depending on available trained staff and resources. A study of four U.S. sites implementing partner notification found that the additional staff time required for that intervention varied with client characteristics.<sup>10</sup> The expansion and integration of male chlamydia control services in reproductive health settings will increase the need for trained staff and resources appropriate for serving men.

Several challenges need to be addressed to increase the effectiveness of partner management strategies. These include issues of confidentiality, the difficulty in reaching partners and the possibility that some individuals' partners will not comply or will respond with violence. For patient-delivered partner therapy, reimbursement issues and physicians' reluctance to prescribe treatment for patients they have not seen may pose additional challenges. Partner management may also be hindered by patients' reluctance to notify partners and by physicians' reluctance to notify their clients' partners. A patient's partners are more likely to go to a clinic for evaluation if they are referred by a physician than if they are referred by the patient,<sup>11</sup> yet physicians tend to rely on patients for partner notification.<sup>12</sup> Client characteristics such as age, gender, sexual orientation and the nature of partner relationships all affect whether a client is willing to notify a partner.<sup>13</sup> For example, males may be less likely than females, and adolescents less likely than adults, to inform their partner that they have had an STD diagnosed.

The expansion of testing, treatment and partner management services to male participants in reproductive health

programs, in combination with education for both health care providers and male clients regarding informing partners about infection and options for partner management, will likely result in reductions in the severe health consequences of untreated chlamydia infection in females.

#### **Decreasing Costs Associated with Untreated Infection in Females**

The largest economic benefits of programs that incorporate chlamydia control services for males will likely result from the effects of reduced transmission to their female partners—particularly, potential decreases in PID, ectopic pregnancy and infertility. These benefits may be substantial, considering that women with repeat infections have an elevated risk for these complications.<sup>14</sup>

Additional benefits may be realized if male chlamydia screening guidelines are established, although this is still a matter of debate. A number of investigators have concluded that screening men for chlamydia is not cost-saving when compared with treating the disease in the absence of screening.<sup>15</sup> Other analysts, however, have determined that screening is cost-effective if prevalence levels are close to 10%.<sup>16</sup>

These cost studies, which typically take the form of decision analytic models, have important limitations that may cause them to underestimate the importance of partner management. Although the assumptions in the models are typically well researched and supported by available data and literature, the models themselves are not necessarily complex enough to capture the repeat infections that are so common with chlamydia. In particular, many models ignore the potential for recurring infection. For the time being, these models can provide insights where controlled trials are unavailable, but we expect that a more sophisticated examination of female reinfection would reveal that integrating male screening with partner management lowers rates of reinfection and, thus, costs.

#### **Increasing Male Awareness of Chlamydia**

Men need to be aware of chlamydia and need to take responsibility for their role in prevention and in protecting their partners from infection. In 1995, only 50% of adolescent males knew that it was possible to be infected with chlamydia and have no symptoms.<sup>17</sup> At the very least, services for testing, diagnosis and treatment need to be available for men with symptoms. When males access these services, health care providers have an opportunity to perform risk assessment and provide STD counseling with risk reduction messages, as well as to encourage complete partner follow-up if necessary.

The expansion of male services and their integration with female reproductive health services promotes at least two educational objectives: First, it improves awareness of the prevalence of chlamydia and increases motivation to access care. These are necessary steps toward reducing risky sexual behavior. Second, it represents public acknowledgment that the responsibility for getting tested for chlamydia falls equally on males and females.

#### **A PROPOSED MODEL FOR INTEGRATING MALE AND FEMALE STD SERVICES**

To realize the potential benefits associated with integrating male STD control services into a female reproductive health setting, programs would ideally include the following:

- male-appropriate sexual risk assessment;
- counseling and education services delivered by staff trained in client-centered counseling and focusing on STD risk reduction, including contraceptive options and pregnancy planning;
- male examinations performed by specially trained providers;
- sensitive, noninvasive, urine-based chlamydia and gonorrhea tests that are acceptable to males;
- diagnostic guidelines appropriate for males (covering STDs, urinary tract infections, skin disorders, fertility, sexual dysfunction and scrotal masses);
- use of current CDC treatment guidelines for STDs;
- referral sources for follow-up male services;
- partner management services, including patient-delivered partner therapy;
- free or low-cost services for all teenage and low-income adult males; and
- ongoing provider training for improving, for males, the availability of chlamydia and other STD services, as well as other sexual and reproductive health education services.

Programs that include all of these components and are dedicated to providing culturally sensitive, nonjudgmental services for males through a variety of settings, from private doctors' offices to community-based clinics, may reduce a wide range of barriers to care—including men's attitudes toward reproductive health and preconceived notions about the types of tests that may be performed, lack of insurance coverage, the stigma associated with being tested for chlamydia or other STDs, and concerns about confidentiality.

Family PACT (Planning, Access, Care and Treatment), California's publicly funded reproductive health and family planning program, is an example of a program that has successfully integrated male STD services with its female family planning program. The program was inaugurated for women in 1997 and began adding HIV and other STD services for males in 1998. Males now have access to all the same reproductive health services as females. Men made up 4% of the enrolled population in 1997–1998 and 11% in 2000–2001.<sup>18</sup> Program services include information and education, counseling, preventive reproductive health care, all contraceptives (male and female) approved by the Food and Drug Administration, and clinical diagnosis and treatment through an expanded provider network of private practices, as well as publicly funded clinics.

#### **CONCLUSION**

It is clear that addressing chlamydia in males is necessary to effectively treat the disease in both males and females. The recent emphasis on reproductive health services for males, as well as the availability of more acceptable screening tests, suggests that there may be new opportunities to

improve services for both men and women. Expanding male services will also help to decrease rates of reinfection among females, decrease costs associated with untreated chlamydia infection in females, and improve male awareness of chlamydia and other STDs through education and counseling. Ultimately, the responsibility for preventing and controlling the transmission of chlamydia belongs to men, as well as women.

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