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SIECUS

REPORT

EMERGING ISSUES IN STD PREVENTION

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ARTICLES

ALSO IN THIS ISSUE...

PREVENTING STDS REQUIRES THAT PEOPLE STAY INFORMED AND USE COMMON SENSE

Mac Edwards

I have spent many hours commuting on trains and subways for the past 30 years. I use this time to read—usually newspapers, magazines, and books to keep updated on as many subjects as possible. That's why friends rarely see me without a brown leather bag filled with everything from *The New York Times* to *O: The Oprah Magazine* to the new novel *The Corrections* and much more.

This issue of the *SIECUS Report* on "Emerging Issues in STD Prevention" reminds me of the importance of keeping updated on subjects. The writers in this issue tell us that if we are to protect ourselves from sexually transmitted diseases (STDs), we must understand what we are dealing with. We must use information and combine it with common sense.

IN THIS ISSUE

The question of whether condoms protect individuals from the Human Papilloma Virus (HPV) is a very hot topic as we go to press. *James Rothenberger,* a distinguished instructor in public health at the University of Minnesota, writes in his article "The HPV/Condom Controversy Provides Opportunities for Education" that by concentrating on the negatives of disease and trying to prevent sexual activity we are not helping our children to grow up to become citizens who are healthy and who can reach their full potential.

Megan Gottemoeller, program officer at the Program for Appropriate Technology in Health (PATH), tells us in her article "Microbicides: Expanding the Options for STD Prevention" that if current momentum continues, "microbicides may soon offer an additional strategy for preventing STDs in the United States and around the world."

Jo Valentine, a program manager at the Program Development and Support Branch of the Division of STD Prevention of the U.S. Centers for Disease Control and Prevention (CDC) in Atlanta, writes in her article "The National Plan to Eliminate Syphilis: Cooperation, Collaboration, and Commitment" of the organization's national call to action to make history of syphilis.

Silvia Terán, Cathleen Walsh, and *Kathleen Irwin* of the Health Services Research and Evaluation Branch of the Division of STD Prevention at the CDC write in their article "Chlamydia Infection in Women: Bad News, Good News, and Next Steps" that with recent advances in diagnosis, treatment, and screening strategies this sexually transmitted "quiet menace" may move from the headlines to the small print.

Mary Loftus, a freelance writer from Atlanta as well as a member of the inaugural class of the Knight Journalism Fellows at the CDC, has provided us with an update of the national *Frontline* television documentary titled *The Lost Children of Rockdale County* which investigated a cluster of teenage syphilis in suburban Atlanta several years ago. She found that the publicity has provided a series of well-intentioned but disjointed prevention efforts in the community itself.

Finally, sexuality educators *Judith Steinhart* of the *Alice!* Health Education Program at Columbia University and *Danene Sorace* of the Network for Family Life Education at Rutgers University tell us in "Sexuality Educators Talk About Their Career Paths" how a group of professionals chose this career, were trained, and stayed motivated.

ALSO IN THIS ISSUE

Stacy Weibley, SIECUS' senior public policy associate writes in "Vaccines May Give Sexuality Education Advocates the Shot They Need" that vaccine development for STDs is proliferating, as is made clear by the innovative work currently underway at the Dale and Better Bumpers Vaccine Research Center (VRC) located on the campus of the National Institutes of Health. She emphasizes that public health officials, advocates, and parents will have to revisit traditional STD-prevention and sexuality education messages in light of this new work.

Finally, SIECUS Librarian *Amy Levine* and Library Assistant *Darlene Torres* have updated our Fact Sheet on "Sexually Transmitted Diseases in the United States." It includes critical components of STD prevention and control as well as resources for additional information.

I hope you will use this *SIECUS Report* to update yourself on emerging issues in STD prevention, in the hope that we will eventually eliminate this significant health problem.

WE MUST ELIMINATE VULNERABILITY TO STDS

Tamara Kreinin, M.H.S.A.

The United States continues to have the highest rate of sexually transmitted diseases (STDs) among industrialized nations, with 15 new million infections each year.

Yet, according to the U.S. Centers for Disease Control and Prevention (CDC), certain populations are more vulnerable to STDs and their consequences. These include women and infants, adolescents and young adults, communities of color, persons entering correctional facilities, and populations in the Southern United States.

In addition, researchers have recently released several studies confirming reports of increased STD risk behaviors and infections among men who have sex with men.

CONTRIBUTING FACTORS

The reasons for these disparities are complicated and rooted in the complex social, economic, and political landscape of our nation. However, certain contributing factors are of particular significance, including poverty, availability and access to high quality health care, drug use, multiple sexual partners, and sexual networks with high STD prevalence.

Deborah Arrindell, senior director of public policy at the American Social Health Association (ASHA) provided us with additional insights into why such disparities continue to exist. She wrote:

> Fueled by poverty and shrouded in stigma and silence, STDs disproportionately affect communities of color in the United States. Race and STDs sit solidly in two of our national discomfort zones. As a nation we are not yet comfortable discussing issues related to race *or* sex. Talking about race *and* sex is high on the taboo list.

Add to those taboos society's discomfort in talking frankly with adolescents about issues related to sexuality and a reluctance to discuss sexual orientation, and we can begin to understand why this problem continues to exist.

WHAT WE CAN DO

This is not to say that these disparities are inevitable or that we cannot work to eliminate them. One good example is the *Know the Facts. Know for Sure* program developed by ASHA in Jackson, MS, and Rio Grande Valley, TX, to increase awareness of STDs among African Americans and Latinos 15 to 19 years of age.

The campaign ran advertisements, developed with input from young people and community leaders, in a variety of forums, including 60-second paid radio spots, outdoor advertising, mini-magazines, in-theater advertisements, and posters distributed through local community-based organizations.

Following the campaign, researchers used several approaches to guage its success, such as school-based surveys, focus groups, interviews with people on the street and over the phone, and tracking of calls to information hotlines.

They found that the campaign reached over half of the target audience at both sites. Sixty percent of the teens in Rio Grande Valley said they were aware of the campaign, and of this group, 70 percent said it made them think about the risks of STDs. In Jackson, over 70 percent of the teens correctly identified the main message of the radio spots, and over 65 percent identified the main message of the posters.

Researchers concluded that culturally appropriate electronic and print media can help us effectively reach young people of color with information about STDs and other sexual health issues. This ASHA program shows one way that we can help.

VISION FOR THE FUTURE

In the last issue of the *SIECUS Report* on "Sexuality Education in the United States," we highlighted U.S. Surgeon General David Satcher's *Call to Action to Promote Sexual Health and Responsible Sexual Behavior.* I think it is important to revisit some of his visions for the future.

"Strategies that cover three fundamental areas—increasing awareness, implementing and strengthening interventions, and expanding the research base—could provide a foundation for promoting sexual health and responsible sexual behavior in a manner that is consistent with the best available science," he said.

"Communities must necessarily approach such a dialogue in different ways, according to their diverse composition and norms," he continued. "But all must participate so that all voices are heard." This is our call to action.

THE HPV/CONDOM CONTROVERSY PROVIDES OPPORTUNITIES FOR EDUCATION

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A recent report from the National Institutes of Health (NIH)[1] has once again stirred the long-smoldering coals of controversy over condom use. This time, the stated issue is the effectiveness of condoms in preventing Human Papilloma Virus (HPV) infection, but the underlying issue for the last 100 years has in general been sexual activity outside of marriage, and in particular sexual activity among young people.

The fires of controversy are fanned from many different directions, and we need to understand that this is not a new debate. Each time science presents a new finding about sexual activity, it appears that the scientists and the abstinence-only groups have opposing ideas regarding the appropriateness and application of that finding. For example, in the mid-1940s, the argument was made that newly discovered antibiotics should not be made available because the best argument against sex outside of marriage would be lost if syphilis and gonorrhea could be easily treated.[2]

Now, once again, the risk of contracting a sexually transmitted infection (STI) is being used to promote abstinence, and the center of the controversy is the following statement in the NIH report summary:

> For HPV, the Panel concluded that there was no epidemiological evidence that condom use reduced the risk of HPV infection, but study results did suggest that condom use might afford some protection in reducing the risk of HPV-associated diseases, including warts in men and cervical neoplasia in women.[3]

Some groups have interpreted this statement as bolstering abstinence-only programming. Others have countered by saying that some protection is better than no protection.

While the political center of the controversy is often viewed to be within the context of governmental processes, the real center is where the impact moves from the abstract to the concrete every day—through those who attempt to provide health education.

This article will look at the problems and opportunities involved in STI education, facing—rather than avoiding—the condom issue. It will make the point that health education tries to present suggestions and personal strategies to help people sort through information, so that they can find those pieces that are most helpful in their own lives. And since in the real world we are all health educators for someone, we will need to think through the points before we attempt to educate someone, whether that be our child, someone else's child, or our friendly local politician.

ASSUMPTIONS ABOUT INFORMATION AND EDUCATION

First, we must realize that most people do not seek out and read original documentation. Rather, we rely on news summaries or testimony of people who say that they have read a report or, even better, have participated on a committee that wrote the report. Just as witnesses in a courtroom often present conflicting information after seeing the same event, so, too, will the observers of a scientific report. This does not necessarily mean that they are less than truthful; people simply tend to view information encumbered by their own experiences. What that means is that we should encourage people to read original sources or at least give them verifiable quotes in complete context.

The NIH report does not say that "condoms are useless," that "if you use a condom you will get cervical cancer," or any number of other things that have been suggested by people who have read only a newspaper account of the report.

Second, it is often human nature to go beyond the information that is presented in reports. When we try to simplify very complex information, we often find it easy to make jumps of logic that simply do not hold up. For example, when some people found that there were microscopic holes in latex rubber gloves, they jumped to the conclusion that condoms were not effective against HIV.

Two important points were missed. One, condoms are "double-dipped" and any holes are filled in. Two, HIV is not found as a free-floating virus. It is in a liquid and none of the droplets of liquid are smaller than the holes in latex gloves. We should always be wary of the simple explanation.

Third, we tend to seek information that supports our beliefs. Keeping an open mind is just as much a problem in science as it is in any field. However, if one seeks and examines various perspectives, truth gradually emerges for that individual. It is doubtful that very many true believers will

be converted. However, most people do not fall into the true believer category; truth for them is what makes sense in their lives.

Fourth, it is imperative that we help all learners, but especially young people, develop the tools to sort through an overload of information. By using real examples such as condom efficacy to teach how to evaluate a source, how to analyze arguments, and how to rate the quality of arguments, one teaches skills and also provides useful information. This is what education is really all about. Unfortunately, much of what we do with sex and drug education in schools is closer to propaganda than education.

Fifth, the scare approach seldom works. Even if young learners believe a scary inaccuracy for a while, they will eventually see evidence among their peers that the previous information was wrong. If this occurs during adolescence, when there is a necessary separation from adults, it can erode confidence in any similar information given by an adult. While it does serve to reinforce those people who have already made a strong commitment to avoid the behavior, those are not the primary targets of behavior change. The highest priority is to reach those who are about to engage in, or are already engaging in, the targeted behavior.

HUMAN PAPILLOMA VIRUS (HPV)

Although clinicians have been aware of numerous strains of HPV for years, the general public has become aware only in the last 10 years of HPV in the context of cervical cancer and genital warts. HPV is not a simple subject, but it is this very complexity which allows careful educators to help learners develop skills of analysis that will cross over into other subject areas and become mutually reinforcing.

First, learners and educators need to determine the level and extent of information that learners need at a certain point in time. Learners do not need a full medical school lecture if they simply want to see pictures of genital warts to determine if they need to see a doctor. Far too often, we tend to give too much information too soon. A good question is, "What do you need to know right now?" Just because there are more than 100 subtypes of HPV does not mean that everyone would find all of that information useful.

Second, learners need to determine their risk in whatever context is meaningful to them. A simplistic statement such as, "If you get HPV, you will get cervical cancer and you will die," is fraught with inaccuracies and yet it is a statement used by some educators. At one level, educators can say that most HPV infection does not lead to cancer, and that even if it does, early diagnosis and treatment greatly reduce the chance of death. Or, depending on learners' interest levels and their ability to comprehend, educators can discuss the association with cervical cancer, which HPV types have a higher likelihood of producing cancer and so forth. The "Will I get it?" question is central to most health questions.

Third, educators should not assume that learners are starting from scratch. A very important question regarding HPV is the one that asks the difference between "infection" and "disease." With HPV, infection appears to be very common while a small percentage of people progress to the disease state.

Since 1985, we have taught a similar concept relating to HIV/AIDS. Most people know that HIV "infection" is usually without symptoms for up to 10 years and that then there is a chance of contracting the "disease" AIDS.

HPV: A DEFINITION

Genital HPV infection is an STD that is caused by Human Papilloma Virus (HPV). HPV is the name of a group of viruses that includes more than 100 different strains or types. Over 30 of these are sexually transmitted, and they can infect the genital area, like the skin of the penis, vulva, labia, or anus, or the tissues covering the vagina and cervix.

Some of these viruses are considered "high-risk" types and may cause abnormal Pap smears and cancer of the cervix, anus, and penis. Others are "low-risk," and they may cause mild Pap smear abnormalities and genital warts. Genital warts are single or multiple growths or bumps that appear in the genital area and sometimes form a cauliflower-like shape.

There is no "cure" for HPV, although the infection usually goes away on its own. Cancer-related types are more likely to persist.

Abstinence is the most effective strategy to prevent HPV infection. Two uninfected individuals who have no other sex partners besides each other cannot get genital HPV infection. The following practices for sexually active people will help prevent infection:

- Do not have sex with anyone who has genital sores or unusual growths in the genital area or the anus
- Be aware that condoms can reduce, but do not eliminate, the risk for transmission to uninfected partners
- If you are a sexually active woman, you should have a regular Pap smear to screen for cervical cancer or other precancerous conditions.

—U.S. Centers for Disease Control and Prevention

Similarly, most people will never know the "disease" state of HPV; in fact, unlike people infected with HIV, some people infected with HPV may actually clear the virus.

Any time a learner can apply concepts across topics, useful skills are enhanced. This is further reinforced when we use the more accurate term "sexually transmitted infection" (STI) rather than "sexually transmitted disease" (STD). As a result, learners can more accurately discuss the key point of the NIH document: that condoms may not reduce the risk of infection but that they reduce the risk of disease.[4]

Fourth, educators need to assess the preferred learning style of learners. Most times it is a different style than that of educators. Our education systems stress lectures and learning from books (pedagogy) while many people remember and learn better when they are active rather than passive learners. Showing people how to access a Web site such the American Social Health Association site[5] or the *Go Ask Alice!* site at Columbia University[6] involves learners and helps them retain information.

Fifth, educators and learners sometimes have to unlearn previously learned concepts. For example, the common knowledge for years was that direct mucus membrane contact was required for an STI to pass from one person to another. With increasing evidence that digital (i.e., finger) transmission is possible with HPV, we need to rethink many of our messages about sex organ contact, condom effectiveness, et cetera. One of our greatest pitfalls as teachers is continuing to teach something that once was true but is no longer true. How many health textbooks are still used that mention syphilis but not chlamydia because the publication is 25 years old?

CONDOMS

The concept of a condom is both old (sheep intestines) and complex. The simple concept of placing a rubber or plastic barrier between a portal of exit and a portal of entry is classic infectious disease public health. One minimizes the transmission of semen or mucus membrane contact and thereby minimizes the risk of pregnancy or STIs. The complexity is more in the appropriateness of using condoms than the technical aspects of how they work.

Of course, all of the learning concepts mentioned in the section on HPV in this article also apply in this section. Learners must, however, move beyond science and begin to venture into ethics, morals, religion, and a host of other topics. On one hand, this is sometimes the start of a liberal education. On the other hand, this is sometimes a headache for parents and teachers.

First, let's start with science. Do condoms work? Here the learner has to determine the meaning of "work" on both a community and a personal level. Condoms are effective when they are used consistently and correctly. Learners can find studies that show that pregnancy, STIs, and HIV are reduced when large numbers of people in a community "consistently" and "correctly" use condoms. It is important that educators help learners differentiate between "risk reduction" and "risk elimination." Risk reduction is relatively easy to explain, but risk elimination is nearly impossible to explain. Further, is there an acceptable level of risk for a given activity in a community? Statistically, driving a car has a higher risk level than using public transportation. Yet, our communities primarily promote individual car use because they usually subsidize highways at a higher level than mass transit.

What does the phrase "consistent and correct condom use" mean for individuals in the community?

First, we need to make clear that some people do not experience desired benefits even though they try their best. This provides us with an opportunity to teach about "relative risk." If learners are grounded in basic probability theory in primary schools, they should understand and accept "risk reduction" rather than "risk elimination." Most public health measures are risk reduction measures. Seat belts do not prevent all deaths and injuries. But you don't hear people suggesting that we should never wear seat belts because they are not 100 percent effective.

Second, we need to understand that condom use is one of the most personal of all risk reduction strategies promoted in health education. Advocating that people should or should not apply condoms to their sex organs is not the same as advocating that they reduce fat in their diets, stop smoking, or wear seat belts.

Few people are comfortable talking about sexual activity in a health promotion context. In part, this is because it is difficult to separate the sex act from a plethora of religious, ethical, and moral connections. STIs simply add a large component of shame to the discussion.

Allen Brandt uses a mid-1940s quote from Philip Mather of the American Social Hygiene Association: "When you get into venereal diseases, you get into sex and when you get into sex, you get into the most fundamental thing in the human race. We can't cure it."[7] Just as Mather was equating sexuality with disease more than 50 years ago, so does much of today's debate have similar undertones. It should force us to question our goal. Do we want to prevent HPV infection? Do we want to prevent condom use? Do we want to prevent sexual activity? Each goal requires different strategies.

CONDOMS AND HPV

Now let's look more specifically at condom use and HPV. To do so, we need to go back to the original NIH document and read more of the conclusion from the full report as opposed to the summary:

> The Panel found interpretation of the studies on condom use and HPV infection/disease to be more

difficult than for the other STDs. This is due, in part, to the conflicting evidence reported by different studies and the various different outcomes requiring evaluation. Furthermore, most of the reviewed studies did not obtain sufficient information on condom use to allow careful evaluation of the association between correct condom use without breakage and HPV infection or disease. For retrospective studies that focused on the long-term disease outcomes, this was also complicated by the difficulty in ascertaining condom use at relevant time points (i.e., years preceding the diagnosis of disease).

The HPV data were evaluated separately for the various outcomes of interest (HPV infection, genital warts, and cervical neoplasia). There was no evidence that condom use reduced the risk of HPV infection, but study results did suggest that condom use might afford some reduction in risk of HPV-associated diseases, including genital warts in men and cervical neoplasia in women.[8]

First, this conclusion is a much more complete explanation of the term "no evidence" than we read in the document summary. It explains that there are not hundreds of good studies that clearly show that condoms are ineffective in preventing HPV. Rather, it explains that there are a few studies that present conflicting evidence because of methodological problems. In reality, it would be very difficult to design and implement a prospective study to look at this relationship. Therefore, retrospective studies are used. But they have their own host of problems, which usually result in hints of correlations rather than causational evidence.

Second, "no evidence" simply means that the definitive study does not yet exist. It does not mean that the protective relationship of condoms to HPV does not exist. It is interesting that supporters of abstinence-only education programs become upset when researchers such as Douglas Kirby of ETR Associates state that there is "no evidence that abstinence-only curricula have any impact on adolescent sexual behavior" while they fully support the statement that there is "no evidence" about condom effectiveness and HPV. In reality, Kirby states that abstinence-only curricula may work, but that at this point in time quality research has not yet been done or published.[9] "No evidence" often means that there are not definitive studies. This is why individuals always need to read full reports and not rely on quick summaries or the impressions of others.

Third, it is important to note that the report differentiates between "infection" and "disease." HPV infection is very common, with estimates that more than 20 percent of the population is infected. That infection seems, however, to have very little impact on most of those infected. The vast majority will not develop a disease such as cervical cancer or genital warts, and many may actually clear the virus. The widespread prevalence of HPV infection with minimum morbidity indicates that the most effective public health prevention strategy would be a vaccine.

Looking at the smaller subset of those who develop disease as a result of HPV infection, it is vital for relative risk purposes to note that the numbers of people with disease is actually a small percentage of those infected. For example, the number of cervical cancer cases each year is measured in the thousands. If we were to report HPV infections (which we don't), the number would be measured in the millions.

While we most likely cannot prevent HPV infection, we could set a goal to prevent disease occurrence and progression. Genital/anal HPV disease is usually internal (HPV on the cervix, for example) and external (external genital warts). Since it is usually easier to prevent the progression of a disease that people can see, we should develop strategies to protect the cervix. Two common strategies would include using a barrier to protect the cervix and conducting regular PAP screenings.

The NIH report does indicate that there may be some reduction in HPV diseases resulting from the use of condoms. From a public health perspective, even a small reduction in a very common disease means that substantial numbers are being prevented. This is an encouraging finding, but we need to conduct more research to determine just how that reduction is achieved.

Fourth, an issue that was not addressed in the NIH report needs study. Assuming that large numbers of people will become infected with HPV, is it "better" to have HPV infection at a young age or an older age? Most cervical cancer occurs in middle-aged and older women, not young women. While it is unlikely that there is any protection resulting from having an HPV infection at a young age, we might eventually learn that the course of HPV disease progression is different in people infected at different ages. Until that is clear, we should put a much higher priority on the protection of cervical tissue of younger women.

POLITICIZATION OF HPV DISEASE

When we politicize a disease instead of treating it as a public health or medical problem, the disease usually ends up having a more serious impact on our population. I wonder, for example, how many HIV infections we could have prevented if the Centers for Disease Control and Prevention had been allowed to question the safety of the blood supply before 1985 or if the United States had implemented needle exchange in the same year that Australia did. While it is too early to tell what will happen to HPV in this climate, we can draw some tentative assumptions from experience with other diseases.

First and foremost, by stigmatizing HPV, using it as a "poster child" to make an argument for a particular pattern of sexual behavior, we also stigmatize and shame those people who are already infected and those who will become infected through no fault of their own. People who feel stigmatized and shamed are less likely to seek treatment when disease does occur. And since HPV is most likely transmitted from the disease state, the spread of the disease is enhanced. The result may be more morbidity and mortality. Do we really want to stigmatize and shame almost one out of five of people aged 15 to 50?

Second, while it is usually more difficult to obtain funding for research and work on diseases that are stigmatized, the funding that is obtained is often channeled into areas that are politically popular but not very effective. If we assume that the current goal is to prevent HPV infection, we can speculate about the result during the past several years if the millions of dollars set aside for abstinence-only-until-marriage education had been used to find a vaccine for HPV.

Third, it is difficult to educate in a politicized environment. People choose sides and education becomes propaganda supporting a belief system rather than an intellectual process. Both educators and learners become trapped in the middle and often choose to do nothing rather than offend either side.

Fourth, by concentrating on the negatives of disease and trying to prevent sexual activity, we avoid facing the underlying important issues of what we really want to promote in terms of sexuality. Basically, we want our children to grow up to become citizens who are healthy and who can reach their full potential. Few would see this as a political objective. But are we asking the right questions to help us achieve that goal?

CONCLUSION

As I read and studied the landmark Institute of Medicine's report *The Hidden Epidemic: Confronting Sexually Transmitted Diseases,* I asked myself a question that I feel we never reach in the United States[10]: What should a sexually healthy community look like and how can we achieve it? If we could move away from the "don't do that" syndrome and ask questions from a more positive perspective, we might move forward in less contentious environments.

ABOUT THE AUTHOR

James H. Rothenberger has taught more than 60,000 students since joining the University of Minnesota faculty in 1972. Rothenberger is a consultant on HPV to the Minnesota Department of Children, Families, and Learning. He is a Fellow of the American College Health Association (ACHA) and has served on the ACHA Task Force on HPV for more than a decade.

REFERENCES

1. Department of Health and Human Services, National Institutes of Health, National Institute of Allergy and Infectious Diseases, *Workshop Summary: Scientific Evidence on Condom Effectiveness for Sexually Transmitted Disease (STD) Prevention*. (Presented June 12-13, 2000, Herndon, VA.)

2. A. M. Brandt, *No Magic Bullet: A Social History of Venereal Disease in the United States Since 1880* (New York: Oxford University Press, 1985), p. 172.

3. Department of Health and Human Services, *Workshop Summary: Scientific Evidence on Condom Effectiveness,* p. ii.

4. Department of Health and Human Services, *Workshop Summary: Scientific Evidence on Condom Effectiveness,* pp. 25-6.

5. http://www.ashastd.org/

6. http://www.alice.columbia.edu/

7. Brandt, *No Magic Bullet,* p. 172

8. Department of Health and Human Services, *Workshop Summary: Scientific Evidence on Condom Effectiveness,* pp. 25-6.

9. D. Kirby, *A Review of the Science Base for School-Based Interventions.* (Presented at the 2001 National HIV Prevention Conference, August 12-15, 2001, Atlanta, GA.)

10. T. R. Eng and W. T. Butler, editors, *The Hidden Epidemic: Confronting Sexually Transmitted Diseases* (Institute of Medicine, Division of Health Promotion and Disease Prevention, Committee on Prevention and Control of Sexually Transmitted Diseases. Washington DC: National Academy Press, 1997.)

CALL FOR SUBMISSIONS

The *SIECUS Report* welcomes articles, reviews, or critical analyses from interested individuals. Upcoming issues of the *SIECUS Report* will have the following themes:

Pregnancy Issues
February/March 2002 issue
Deadline for final copy: January 4, 2002

The Politics of Sexual Pleasure
April/May 2002 issue
Deadline for final copy: March 4, 2002

International Issues Relating to Sexual Health
June/July 2002 issue
Deadline for final copy: May 3, 2002

Sexuality Education in America
August/September 2002 issue
Deadline for final copy: July 5, 2002

MICROBICIDES: EXPANDING THE OPTIONS FOR STD PREVENTION

Megan G. Gottemoeller, M.P.H.
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Washington, DC

Ever heard of topical microbicides? If not, you're not alone. Microbicides are a perennial "Miss Congeniality" in a sexually transmitted disease (STD)-prevention pageant that awards its crowns to vaccines and diagnostics.

After a long history of being overlooked and undervalued, however, the promising research on microbicides for STD prevention is coming into its own. If current momentum continues, microbicides may soon offer an additional strategy for preventing STDs in the United States and around the world.

"Microbicides" are topical substances applied vaginally or rectally to reduce the risk of STD transmission. Microbicides have various formulations—creams or gels, suppositories, lubricants, dissolving film, or devices—that deliver the active ingredient to the vulnerable area.

The two common features of this class of diverse substances are (1) they are "chemical barriers" applied topically, and (2) they are user-controlled. This last feature is crucial to understanding the potential "value-added" impact of microbicides as an additional tool for STD prevention.

Currently, state-of-the-art HIV and STD prevention consists of recommendations to be abstinent, mutually monogamous, or to use condoms every time you have sexual intercourse. And while all of these are excellent strategies for protection from infection, they only go so far.

Abstinence is not really a viable strategy within marriages and long-term relationships, although the risk of infection still exists. And it is inaccurate to say that being monogamous or using condoms enables an individual to "protect himself or herself," when both strategies require the cooperation of a partner in order to be effective.

The very fact that condom use must often be "negotiated" suggests a barrier to the consistent and correct use crucial to condoms' effectiveness as a prevention method. Ironically, the man who ultimately refuses to wear a condom is more likely to transmit an STD than to become infected with one during unprotected sexual intercourse. Women are at a particular disadvantage, due to gender norms that may disempower them in sexual decision-making or social circumstances that make it difficult to leave a partnership that puts their health at risk.

User-controlled prevention options, such as microbicides, represent an additional prevention strategy for individuals and couples for whom existing methods are inadequate.

Despite their potential contribution to fighting the STD epidemic, microbicides are not yet available. Most of the scientific research and product development is happening in small biotech companies and nonprofit or academic laboratories, and is almost exclusively dependent on public funding through the National Institutes of Health (NIH).

For the last several years, the NIH investment in microbicides research has barely reached one percent of the overall budget for AIDS research,[1] even though microbicides could help prevent HIV and other STDs. Funding has not kept pace with the accelerating science, and many promising leads are languishing for lack of public or private investment. Meanwhile, the epidemics soar.

NOT JUST YOUR AVERAGE SPERMICIDES

Technically, the term "microbicide" means "something that kills microbes," but there are actually several mechanisms of action through which microbicidal products could work to prevent STDs.

Some would literally kill or destroy any pathogens present in semen or vaginal fluid by disrupting the cell or viral membrane. This class of products, known as surfacants, includes traditional spermicides with anti-microbial activity, the best known of which is nonoxynol-9 (N-9).

However, data released in July 2000, at the Thirteenth International AIDS Conference in Durban, South Africa, suggested that in high or frequent dosages, N-9 can do more harm than good by causing micro-lesions in the vaginal epithelium that facilitate rather than prevent the transmission of HIV.[2]

Since the Durban conference, the general consensus is that N-9 should not be pursued or recommended as a stand-alone microbicide. This general consensus was further emphasized by data from the U.S.-based nongovernmental organization (NGO) the Population Council, showing that N-9 is a disaster as a rectal microbicide and that people using over-the-counter lubricants containing N-9 for anal sex could be at serious risk.[3]

This research showed that 15 minutes after application, lubricants and spermicides containing N-9 caused severe exfoliation of rectal epithelium. Though the tissue repaired

itself within eight to 12 hours, the immediate risk of exposure of vulnerable cells in the rectum to potentially infective semen was alarming.

Unfortunately, this observation has not received the attention that the Durban data did, and the response in the public health community has been muted. It is crucial that this important information about the risks of N-9 for anal sex be more widely publicized, since N-9 is an ingredient in several over-the-counter lubricants that are directly marketed to gay men as providing additional protection for anal sex.

The fact that N-9 failed as a microbicide was not, however, a setback for the overall field. Other novel surfacants and over-the-counter products like lubricants are being investigated for their safety and effectiveness as microbicides.[4] And several other candidate microbicides representing the range of potential mechanisms of action are poised to take N-9's place at the head of the class.

Some microbicides work by boosting the vagina's natural defense system. A healthy vagina hosts lactobacillus, a "good" bacteria that helps maintain an acidic pH of about 4.5. Most pathogens, including HIV, cannot survive in such an acidic environment. Even sperm don't last long, which is why semen is alkaline, to neutralize the vaginal environment long enough for sperm to fertilize a female egg. Enhancing the lactobacillus present in the vagina can "reinforce" this natural defense, and scientists are pursuing a lactobacillus suppository.[5] Also, microbicides can act as buffering agents, keeping the vagina acidic even in the presence of semen, and therefore inhospitable to STD pathogens. A candidate product called Buffer-gel works this way.[6]

Other microbicides are designed to interfere with the specific pathogen. For example, Pro-2000 Gel contains a substance that binds with the receptor sites on target CD-4 cells, preventing HIV from attaching and infecting those cells. By blocking this process, the microbicide inhibits the infective potential of HIV.[7] Other microbicide research is investigating existing anti-retroviral compounds that could be reformulated as topical agents, delivering the active ingredients directly to the site of possible infection.[8]

THE "PUBLIC HEALTH PERSPECTIVE"

How would a new method like microbicides fit into our current approaches to prevent STDs?

It is important to recognize that microbicides will probably not be as effective in preventing STD transmission as condoms are when used correctly every time. However, social science research and epidemiological data indicate that many people, particularly women, are simply not able to use condoms every single time they have sexual intercourse.

Rates of HIV and STD incidence are dramatically higher among women in communities where economic and cultural barriers may prevent them from insisting that their partners use condoms, or from leaving the relationship if he refuses. For many people in the United States and around the world, even the best condom counseling, negotiating skills, and free supplies will not overcome those barriers in time to prevent millions of STD and HIV infections.

Though condoms can be highly efficacious in preventing STDs, this depends on consistent and correct use. A method that is less efficacious, like microbicides, but that people can use with higher frequency, could actually protect more sex acts than a highly efficacious method that is used inconsistently. This "prevention equation" has been demonstrated by mathematical models showing that a method that is 90 percent efficacious but used only 20 percent of the time offers less protection than a method that is 50 percent efficacious used 40 percent of the time.[9] Though less efficacious, it is likely that microbicides could be used more consistently, and therefore would protect more sexual acts from STD transmission.

This prediction helps inform our prevention messages as new technologies like microbicides become available on the market. Certainly, we would continue with current messages emphasizing abstinence or mutual monogamy and consistent and correct condom use. When we add microbicides, the recommendations first focus on an adjunct to condoms, a "belt and suspenders" approach, to quote one microbicide researcher. The next layer of the message, however, would be to use microbicides as a back-up when condom use is not possible. And lastly, for people who are simply not using condoms for one reason or another, microbicides represent a method providing some protection, which is better than none at all.

As the scientific research on microbicides proceeds, it should be accompanied by social science research and policy development, so that the public health field can understand the implications of adding this new technology to the STD-prevention method mix and develop meaningful and understandable messages about microbicides for STD prevention.

MICROBICIDES FOR REAL PEOPLE

While the theoretical value of microbicides for STD prevention is clear, their actual impact will depend almost exclusively on use. Despite the difficulty of predicting the acceptability and potential market for a class of products that does not yet exist, there is a growing body of research that provides insight into the eventual adoption and use of microbicides for STD prevention in the population.

In 1998, The Alan Guttmacher Institute calculated the potential market for topical microbicides among sexually active women in the United States.[10] Of this nationally representative sample of women aged 18 to 44, 23 percent felt that they were at some risk of contracting an STD and

were interested in a microbicide as possible prevention. In addition, another 17 percent of women surveyed felt that they would be interested using a microbicide if they did feel that they were at risk of getting an STD. Based on this data, the authors estimate that about 12.6 million women in the United States would be interested in using a microbicide for STD prevention.

An often-overlooked niche for microbicides is among married couples who are dealing with a recurring STD. As the rates of viral infections continue to grow in this country, this is becoming a more common scenario. What do you do if you contracted herpes 10 years ago, suffer infrequent recurrences, and you and your partner want to have a child?

Current recommendations to use condoms to avoid passing the STD to your partner are not very useful if you want to start a family. However, non-contraceptive microbicides could represent an effective way to reduce the risk of transmission so that couples would not have to face a trade-off between getting pregnant and getting infected. Several microbicides under research do not have spermicidal or contraceptive properties. One of these is Carra-guard™, developed by The Population Council. Based on carrageenan, an inexpensive seaweed extract already commonly used as a food additive, this molecule inhibits the ability of HIV and HSV2 (genital herpes) to bind with target cells, thereby preventing infection.[11] In laboratory tests, Carraguard appears to be non-contraceptive and non-spermicidal.[12]

Recently, data have shown that traditional STDs are rising among men who have sex with men in many parts of the country.[13] This trend has been accompanied by growing interest in microbicides for rectal use. Men who have sex with men have expressed both the need for and interest in microbicides or microbicidal lubricants for anal sex.[14]

The microbicide products furthest along in the research pipeline are undergoing safety studies for rectal use. However, the scientific challenges of developing a rectal microbicide are different from those of a vaginal product. Several researchers are pursuing these types of products.

THE ADVOCACY AGENDA

Perhaps the most difficult thing to understand about microbicides is why they are not yet available in pharmacies and clinics everywhere.

Though the scientific research presents certain challenges, there is every indication that microbicides are feasible as an STD prevention method. The variety of products and mechanisms for use is a good indication of the potential for success. Much of the ongoing research is based on straightforward principles, and several of the active ingredients are well-known compounds approved for other uses.

And yet, progress is too slow. Over 60 microbicide product concepts exist, including more than 20 that are in or ready for human trials. But very few microbicides have advanced to Phase Three efficacy trials, the large-scale trials with thousands of people that prove the product works in addition to being safe.

Because these trials must enroll thousands of people in order to capture sufficient data to determine the microbicide's effect, they cost tens of millions of dollars. An independent consulting group recently estimated that a single Phase Three microbicide trial could cost up to 46 million dollars.[15] These upper estimates for a single trial exceed the U.S. government's total annual investment in microbicide research in fiscal year 2000.[16]

Large pharmaceutical companies, the usual engines of health technology development, have not taken up microbicide research, primarily because their potential profit margin on a product that would have to be low-tech, low-cost, and widely available over-the-counter is not sufficient incentive.

As with other prevention technologies such as vaccines or contraceptives, public sector funding must fill the gap where the market fails. Most microbicide research currently takes place in academic or non-profit institutions or in small biotech companies, all of which are primarily dependent on federal funding through the NIH to finance their work.

However, the percentage of funding through NIH and other government agencies is grossly inadequate for the urgent need and the scientific promise of microbicides. Though microbicides and vaccines for HIV and STD prevention would be complementary, at least seven times as much federal funding is invested in vaccine research than in microbicides.

Because federal funding is crucial to accelerating the research and the timeline when a safe, effective microbicide can be added to our STD-prevention tools, advocacy is critical. Congress allocates resources for NIH and other agencies; advocates can play a role in educating their representatives about the need for expanding STD-prevention options and ask that more resources be dedicated to this important field.

This type of advocacy goes hand in hand with efforts to improve the U.S. government's response to the STD epidemic overall, both through direct funding and supportive policies for sexuality education as well as access to information and treatment.

Another important area for advocacy is in raising the awareness of professionals in STD prevention and public health, and in health care providers. These individuals will be on the front lines recommending and delivering microbicides once they exist, and their familiarity with and support for the concept can make a difference in how quickly microbicides become a regular part of STD-prevention programs.

With sufficient investment and political will, we could have a first generation microbicide for STD and HIV prevention within five years. It is up to us to decide

whether that will happen or not—whether we will expand our prevention strategies to make them more relevant and useful for more people, to prevent more infections, and ultimately, improve people's sexual and reproductive health.

REFERENCES

1. Alliance for Microbicide Development, 2001. For more information visit www.microbicide.org.

2. L. van Damme, *Advances in Topical Microbicides*. (Presented at the Thirteenth International AIDS Conference, Durban, South Africa, July 2000.)

3. D. Phillips, et al., "Nonoxynol-9 Causes Rapid Exfoliation of Sheets of Rectal Epithelium," *Contraception,* vol . 62, pp. 149-54.

4. S. Baron, et al., "Practical Prevention of Vaginal and Rectal Transmission of HIV by Adapting the Oral Defense: Use of Commercial Lubricants," *AIDS Research and Human Retroviruses,* vol. 17, no. 11, pp. 997-1002.

5. Alliance for Microbicide Development, *Products Database; Global Campaign for Microbicides.* For more information, visit www.microbicide.org or www.global-campaign.org

6. Ibid.

7. Ibid.

8. Ibid.

9. C. Watts, W. Thompson, and L. Heise, *The Impact of Microbicides for HIV Prevention: Results of a Mathematical Modeling Exercise.* (Presented at the Twelfth International AIDS Conference, Geneva, Switzerland, July 1998.)

10. J. Darroch and J. Frost, "Women's Interest in Vaginal Microbicides," *Family Planning Perspectives,* vol. 31, no. 1, pp. 16-23.

11. The Population Council, *The Case for Microbicides: A Global Priority, Second Edition* (New York: The Population Council, 2001).

12. P. Witwatwongwana, et al., *A Randomized Clinical Trial of Safety and Acceptability of a Carrageenan Gel as a Vaginal Microbcide.* (Presented at Sixth International Congress on AIDS in Asia and the Pacific, October 9, 2001, Abstract 1026.)

13. Centers for Disease Control and Prevention, *Tracking the Hidden Epidemics; Trends in STDs in the United States 2000* (Atlanta: CDC, 2001).

14. A. Carballo-Diéguez, et al., "Frequent Use of Lubricants for Anal Sex Among Men Who Have Sex With Men: The HIV Prevention Potential of a Microbicidal Gel," *American Journal of Public Health,* vol. 90, pp. 1117-21.

15. Boston Consulting Group, Microbicide Initiative, *Pharmaco-Economics Summary Results,* June 29, 2001.

16. "The National Institutes of Health Spent $34 Million in Microbicide Research, USAID Spent $5 Million and CDC Less Than $3 Million in FY 2000." (Source: Alliance for Microbicide Development, 2001.)

For more information on advocacy activities, contact: The Global Campaign for Microbicides. Phone: 202/822-0033. E-mail: Info@global-campaign.org or Alliance for Microbicide Development, Attn: Polly Harrison. Phone: 301/588-8031. E-mail: Pharrsio@aol.com —*Editor*

SURVEY SHOWS NEED FOR STD KNOWLEDGE

A new survey of more than 500 sexually active African-American teenage girls from "high-risk, low-income" neighborhoods found that many do not know the basics about most sexually transmitted diseases (STDs) and how they are spread.

Speaking at the Annual Meeting of the American Public Health Association, Dr. Richard Crosby of Emory University in Atlanta said that the survey, which he conducted with his colleagues, indicates that "further school-based and community-based efforts to correct adolescents' misconceptions about HIV/STD prevention are warranted."

"All of us as health educators need to do a better job in helping sexually active adolescents to adopt more protective behaviors," he concluded.

Some of the survey's findings show that:

- More than 50 percent of respondents thought all STDs were curable, that STDs do not increase the odds of HIV transmission, and that douching after sex can protect against STD infection
- Less than 33 percent of those surveyed knew that women are more susceptible to STD infections, including HIV
- Nearly 66 percent of the girls incorrectly said sheepskin condoms were more effective at preventing STD transmission that latex condoms
- Slightly less than half of the respondents incorrectly thought that oil-based lubricants would reduce their HIV risk when used in conjunction with condoms
- One-third of those asked said they thought they "could always tell" if a partner had an STD
- Forty percent of the girls did not know that STDs can lead to infertility if left untreated.

—*Reuters Health, October 24, 2001*

THE NATIONAL PLAN TO ELIMINATE SYPHILIS: COOPERATION, COLLABORATION, AND COMMITMENT

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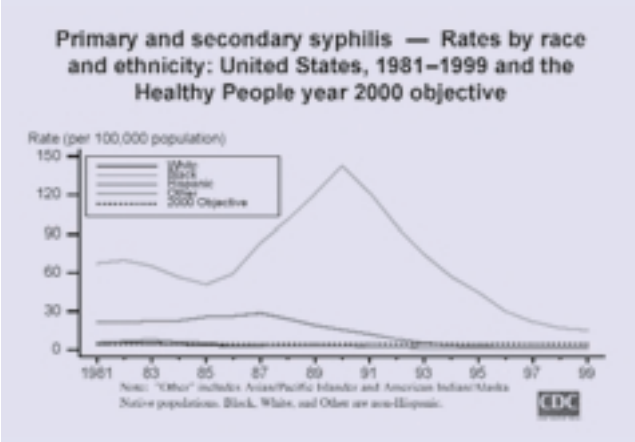
The persistence of infectious syphilis in the United States is an important indicator of the nation's health. The disease is linked to increased transmission of HIV, and it contributes significantly to poor infant health outcomes.

In the 1990s, at the height of the U.S. infectious syphilis epidemic, the rate for African Americans was more than 50 times greater than the rate for whites; and although the rates are decreasing, even reaching historic lows, the burden of syphilis remains one of the nation's most glaring racial disparities in health.[1]



In January 2000, the U.S. Department of Health and Human Services published *Healthy People Objectives for the Year 2010*. This document declared two over-arching goals: increasing the quality and years of healthy life for all Americans, while at the same time eliminating racial and ethnic minorities' health disparities.[2]

The Division of STD Prevention of the Centers for Disease Control and Prevention (CDC) was already actively engaged in this new call to action for public health. In October of 1999, the CDC launched the *National Plan to Eliminate Syphilis from the United States.*

THE GOAL

The National Plan, developed in consultation and collaboration with local and state health departments, other federal agencies, private interests, and the communities most affected by syphilis, has as its chief goal the reduction of infectious syphilis to 1,000 or fewer cases in the United States by 2005.

At the national level, syphilis elimination is defined as the absence of *sustained transmission* in the United States. At the local level, it is defined as the absence of transmission of new cases within a jurisdiction beyond 90 days of report of an imported index case. Ultimately the plan is intended to lead to a point where 90 percent of U.S. counties are actually syphilis-free.

A TARGETED EFFORT

At present, approximately 84 percent of U.S. counties report being syphilis-free, and this is in light of intensified surveillance efforts and, in many cases, increased screening activities.

Infectious syphilis continues to prove to be a highly focal public health problem. For the most part, it is a disease concentrated in the southeastern United States and in a limited number of larger urban centers throughout the rest of the country.

The national plan focuses on bringing increased fiscal and technical resources to those areas with high rates of infectious syphilis (High Morbidity Areas) and those with significant potential to experience emerging or reemerging syphilis epidemics (Potential Reemergence Areas).

In the national plan, a High Morbidity Area (HMA) is defined as an area with continuing syphilis transmission,

which is often indicative of a need to improve STD prevention and control program infrastructure in general, and syphilis prevention and control in particular. A Potential Re-emergence Area (PRA) is defined as an area that is currently experiencing little or no infectious syphilis but is nonetheless at increased risk for an outbreak due to such factors as: having a history of high syphilis rates during the 1990s, being a port or border jurisdiction, or being a jurisdiction with residents that are disproportionately affected by syphilis.

A COMPREHENSIVE APPROACH

As a result of extensive work with communities affected by syphilis, local and state health departments, and other federal agencies, the CDC developed a national plan to eliminate syphilis centers that incorporates two essential kinds of strategies: those that are cross-cutting, and those that are intervention-focused.[3]

The cross-cutting strategies, *Enhanced Surveillance* and *Strengthened Community Involvement* and *Organizational Partnerships,* were developed to ensure data-driven guidance and promote long-term support for the effort.

The intervention strategies of *Rapid Outbreak Response, Expanded Clinical and Laboratory Services,* and *Enhanced Health Promotion* are intended to address primary prevention services (for example, individual behavioral risk reduction) and increase access to quality syphilis screening and treatment services.

High Morbidity Areas are required to address all five strategies in their syphilis elimination activities. Potential Reemergence Areas are encouraged to focus on enhanced surveillance, develop an outbreak response plan, and foster collaboration with communities affected by syphilis.

Cross-Cutting Strategies. Improved surveillance will not only assist with effectively targeting prevention and control resources, but will also provide an important means of measuring the outcome of elimination program efforts. *Enhanced Surveillance,* as a cross-cutting strategy, is aimed at assuring that there is complete, accurate, and timely reporting of positive syphilis tests, and at promoting effective, timely, and regular data analyses. The national plan specifically calls for the development and implementation of a syphilis surveillance framework to support ongoing evaluation of syphilis morbidity.

Infectious syphilis disproportionately affects the same communities that are also disproportionately affected by such social issues as racism, social discrimination, poverty, and inadequate health care.[4] These issues often act as impediments to maintaining healthy sexual lifestyles, in addition to creating barriers to accessing health care and health information.

The strategy of *Strengthened Community Involvement* and *Organizational Partnerships,* as it is described in the national plan, is intended to address these issues and overcome the barriers they may pose to achieving syphilis elimination. This second cross-cutting strategy reflects a renewed commitment to actively involve persons who are members of the communities most affected by syphilis in the development and delivery of syphilis elimination interventions.[5] Moreover, the imperative to develop partnerships with other health and social service agencies, organizations, and institutions is aimed at expanding the availability of sexual health care and health education in underserved communities by enlisting vital additional support from partners who have access to and credibility with persons who are at risk for syphilis and other STDs. As a means of improving access to STD health care services, while at the same time mobilizing community action and cooperation, the national plan endeavors to not only eliminate syphilis but also to promote sexual health and improve health status in general.

Intervention Strategies. The expansion of clinical and laboratory services for persons at risk for syphilis is one of the three key intervention strategies. In addition to basic screening and treatment services, the national plan calls for the provision of quality client-centered counseling services in sites and venues regularly frequented by those persons at risk for infectious syphilis.

The *Rapid Outbreak Response* intervention requires local areas to develop plans that ensure immediate action to shorten outbreaks as they occur. These plans are to be based upon area-specific threshold criteria, and inclusive of community-based partners.

The third intervention strategy is aimed at enhancing local health promotion activities such as the provision of

SYPHILIS: A DEFINITION

Syphilis is a complex STD caused by the bacterium *Treponema pallidum*. It has often been called "the great imitator" because so many of the signs and symptoms are indistinguishable from those of other diseases.

Syphilis is passed from person to person through direct contact with a syphilis sore. Sores occur mainly on the external genitals, vagina, anus, or in the rectum. Sores also can occur on the lips and in the mouth. Transmission of the organism occurs during vaginal, anal, or oral sex.

—U.S. Centers for Disease Control and Prevention

individual and group risk reduction services and the development of general health communication and public information campaigns.[6]

Federal Rapid Response Teams and Program Assessments. To augment local syphilis elimination efforts, the CDC also provides two additional means of program support: federal Rapid Response Team (RRT) assistance and comprehensive syphilis prevention and control program assessments.

State and local health department STD programs can request RRT assistance to support their own disease investigation and partner referrals efforts. RRT assistance is also available to aid local surveillance, health promotion, and epidemiology activities. RRT teams are not limited to deployment only in the case of syphilis outbreaks, but are available to respond to endemic situations as well.

Deployments may be as short as one week or as long as three months. This kind of flexibility allows for federal support to build local capacity and infrastructure over time. Instituted in January 2001, there have been three RRT deployments to three HMAs to date.

Another source of federal direct assistance for syphilis elimination is the comprehensive Syphilis Elimination Program Assessment. This involves the deployment of a multi-disciplinary team whose members are prepared to assess a broad range of critical syphilis elimination activities.

Although, in most instances, technical guidance and training actually begin during the assessment itself, approximately 30 days following each of the assessments a tailored technical assistance plan is prepared as a result of the program assessment, and additional support is provided accordingly. Initiated in March 2000, 27 Syphilis Elimination Program Assessments had been completed by September 2001.[7]

CALL TO THE NATION

In *Call to the Nation,* the American Public Health Association declared:

> As we experience the longest economic expansion in U.S. history, we believe the elimination of racial and ethnic disparities in health is a worthy, ground-breaking, and achievable goal for our prosperous and energetic nation.

The *National Plan to Eliminate Syphilis from the United States* provides a comprehensive framework to respond to this call. Infectious syphilis is an old disease. For decades, it has waxed and waned, but never gone away. Still, it remains an easily preventable and readily curable infection.

Twice before, in the 1940s and again in the 1960s, the disease has been targeted for elimination. Both times, the rates of disease were greatly reduced. Now, perhaps more than ever in these times of slowing economic growth, the costs of persistent syphilis cause a burden to society, taxing what still remains a fragmented health care delivery system and undermining the nation's health status.[8]

In a number of ways, the new *National Plan to Eliminate Syphilis from the United States* demonstrates a commitment to the basic elements of past eradication initiatives. It calls for better surveillance systems to track the disease and target intervention efforts. It requires more access to clinical care and improved case investigation. However, it also includes the wisdom of recent lessons learned from such public health initiatives as HIV prevention and cardiovascular health promotion.

The new plan relies on broader partnerships and involved communities. It seeks to build stronger, sustainable public health capacity for all Americans by combining traditional methods with innovative approaches to eliminate syphilis in the United States.

There can be no better time to marshal the cooperation, the collaboration, and the commitment to improve the nation's health. And it is this synergistic approach that best prepares STD-prevention and control programs to effectively respond to the call for action to eliminate one long-standing health disparity by eliminating infectious syphilis.

REFERENCES

1. Division of STD Prevention, *Sexually Transmitted Disease Surveillance, 1999* (Department of Health and Human Services, Atlanta, GA: Centers for Disease Control and Prevention, September 2000).

2. U.S. Department of Health and Human Services, *Healthy People 2010* (Washington, DC, January 2000).

3. Division of STD Prevention, *The National Plan to Eliminate Syphilis from the United States* (Department of Health and Human Services, Atlanta, GA: Centers for Disease Control and Prevention, October 1999).

4. S. O. Aral and K. K. Holms, "Social and Behavioral Determinants of Epidemiology of STDs: Industrialized and Developing Countries" in K. K. Holmes, et al., editors, *Sexually Transmitted Diseases, Third Edition* (New York: McGraw Hill, 1999), pp. 39-76.

5. J. Hatch, et al., "Community Research: Partnership in Black Communities," *American Journal of Preventive Medicine, Supplement,* vol. 9, no. 6, pp. 27-34; L. Finelli, et al., "Syphilis Outbreak Assessment," *Sexually Transmitted Diseases,* vol. 28, no. 3, pp. 131-35.

6. Division of STD Prevention, S*yphilis Elimination Communication Plan* (Department of Health and Human Services, Atlanta, GA: Centers for Disease Control and Prevention, August 2000).

7. American Public Health Association, *Call to the Nation to Eliminate Racial and Ethnic Disparities in Health* (Boston, MA: November 2000).

8. H. W. Chesson, et al., *Direct Medical Costs of Syphilis in the United States: The Potential for a Cost-saving National Elimination Program* (1998 National STD Prevention Conference, Poster Display 30).

CHLAMYDIA INFECTION IN WOMEN: BAD NEWS, GOOD NEWS, AND NEXT STEPS

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The epidemic of Chlamydia trachomatis infection is a quiet menace. This largely asymptomatic infection affects more than three million people a year in the United States.[1] Women may not know they were ever infected until such well-established complications as infertility, chronic pelvic pain, or ectopic pregnancy arise many years later. The stigma associated with this sexually transmitted disease (STD) makes it tough for patients and providers to discuss.[2]

In this review, we will summarize the bad news of a highly prevalent infection that leads to serious and costly complications and transmission to others if untreated. We will also describe the good news—recent advances in diagnosis, treatment, and screening strategies. We will close with recommendations on future directions that may move this epidemic from the headlines to the small print.

THE BAD NEWS

Chlamydia trachomatis is the most commonly reported infectious disease in the United States.[3] Unlike many other STDs, chlamydial infection is prevalent among all socioeconomic groups, and prevalence is highest among people under 25.

The Centers for Disease Control and Prevention (CDC) estimated in 1993 that about 10 percent of young women 15 to 19 years of age and at least five percent of those 20 to 24 years of age were infected.[4] More recent data reported rates of five percent among 15- to 19-year-old girls in one commercial managed care plan (Kaiser Permanente, Northern California, unpublished data, June-December 1999) and more than seven percent of female college students.[5] Some of these estimates, if based on older, less-sensitive tests than those now available, may have underrepresented actual infection rates.

Fifteen percent to 40 percent of women with untreated *Chlamydia trachomatis* infections will later develop pelvic inflammatory disease (PID).[6] More than one million U.S. women develop symptomatic PID each year, of whom about 120,000 are hospitalized.[7]

An estimated 78,000 cases per year of treated infertility are believed to be PID related.[8] Repeated PID episodes increase a woman's risk of infertility: about 11 percent of women are infertile after one and 23 percent are infertile after two PID episodes.[9] An 11 percent prevalence of tubal occlusion has been found in women with infertility living in developed countries.[10]

In addition, nearly 10 percent of first pregnancies following PID are ectopic.[11] There were an estimated 108,800 ectopic pregnancies in 1992, almost twice as many as in 1980.[12] A retrospective cohort study of 11,000 women found that those who had had two chlamydial infections were twice as likely to be hospitalized for ectopic pregnancies as were women who had had one infection.[13]

Chlamydial infection has also been associated with a two-to-four-fold increased risk of acquiring and transmitting human immunodeficiency virus (HIV) infection.[14] Chlamydia-associated inflammation increases the number of cells susceptible to HIV infection (for instance, CD4 receptor cells) and the amount of HIV shedding in genital tracts of HIV-infected women.[15]

Chlamydial infections in pregnant women are also serious. Twenty percent to 40 percent of infants born to mothers with untreated chlamydial infections will develop neonatal conjunctivitis,[16] and up to 22 percent will develop pneumonia.[17]

Adolescent girls may be at greater risk for acquiring chlamydia than older women for two reasons. First, the adolescent cervix has a larger area of ectopy. Because *Chlamydia trachomatis* organisms may preferentially infect columnar cells,[18] large ectopy areas may increase the number of cells at risk for infection.[19] Second, adolescence is characterized by low perceived vulnerability to danger and a high frequency of such risk behaviors as multiple (sequential or concurrent) sex partners.[20]

One retrospective study of more than 38,000 women found that 54 percent of girls under age 15 were reinfected with chlamydia within 12 months of a positive test.[21] A prospective study of 3,200 inner-city adolescent girls found that the median interval between an initial negative test and the first positive test were seven months; the median interval to the next positive test was six months.[22] Clinically significant reinfection is possible because immunity is thought to be serovar-specific and temporary.[23]

Although America's adolescent and young women bear the heaviest burden of the epidemic, all Americans pay for its high costs. One study estimated that the direct and indirect cost of chlamydia infection in 1994 was $2.1 billion.[24] Another analysis reported that the direct medical cost of PID and its major sequelae was $1.9 billion in 1998 dollars.[25] These studies did not address the intangible costs of pain and suffering, which can be especially high for chlamydia-associated infertility or chronic pelvic pain.

THE GOOD NEWS

So, what can counter the bad news of this highly prevalent, serious, and costly infection? The good news is found in new sensitive, specific, and acceptable diagnostic tests; new tools to guide the development of cost-effective screening strategies; and a relatively inexpensive one-dose treatment.

Because about three of four infected women do not develop symptoms,[26] and untreated infection can lead to serious and costly complications, routine screening is a critical control strategy. Marked reductions in the prevalence of chlamydia in women have followed the implementation of routine screening programs in publicly funded clinics.[27]

One study of young women attending a family planning clinic found that universal chlamydia screening was cost-effective for populations with a prevalence of at least three percent.[28] A recent randomized, controlled trial of 2,607 women conducted in a large managed care organization (MCO) found that the PID incidence was 56 percent lower among high-risk women offered chlamydia screening and treatment through mail outreach than among women who did not receive the mailing.[29]

Similarly, an ecological analysis of rates of chlamydia infections and ectopic pregnancy between 1985 and 1995 suggested that aggressive efforts to reduce chlamydia infection in Sweden have shown impressive declines in infection rates, which may have contributed to declining rates of ectopic pregnancy.[30] Screening efforts appear to decrease chlamydia prevalence and its sequelae.

The U.S. Preventive Services Task Force (USPSTF) recently published updated guidelines for chlamydia screening that strongly recommend routine screening for all sexually active women 25 years old and younger.[31] They also recommend screening asymptomatic women at increased risk for infection, all asymptomatic pregnant women 25 years old and younger, and all pregnant women at increased risk for chlamydia infection.

These recommendations are supported in whole or part by the American College of Obstetricians and Gynecologists (ACOG), the American Academy of Pediatrics, the American Medical Association, and the CDC.[32] The CDC and ACOG also recommend screening high-risk pregnant women of all ages.[33]

In many clinical settings that serve sexually active women at moderate to high risk of STDs (such as family planning, prenatal, and STD clinics), chlamydia screening is routine and rates of annual screening are roughly 55 percent.[34] Current levels of screening by primary care providers in MCOs are low, however.

The National Committee for Quality Assurance (NCQA) recently released 1999 data on screening rates in 15- to 25-year-old women among MCOs participating in the Health Plan Employer Data and Information Set (the leading measurement system used by health care purchasers and consumers to compare MCO performance). Less than 20 percent of eligible women were screened in the plans that released their data during the first year of the measure.[35] Screening rates of plans that declined public reporting are presumed to be lower.

Low screening rates may be due to several factors, including insufficient provider awareness of the high prevalence of chlamydia,[36] providers' lack of comfort with pelvic examinations, lack of facilities to do pelvic examinations, patients' resistance to testing that requires pelvic examinations, and concerns about confidentiality.

A recent innovation in testing—nucleic acid amplification tests (NAATs)—may help overcome some patient and provider barriers. Until the mid-1990s, chlamydia screening tests required an endocervical specimen. The sensitivity of these conventional tests based on antigen detection ranged from 65 to 85 percent.[37] NAATs are more sensitive (more than 90 percent) have specificity (98 to 100 percent) similar to culture and other non-NAAT tests,[38] and can use endocervical, urethral, or urine specimens.[39]

With urine tests, women can be screened in settings where gynecological examination rooms are unavailable,[40] such as correctional facilities and schools. Urine testing is also popular among patients who dislike pelvic examinations and among providers who lack the comfort, skill, or resources to do them.

Recent research highlights the value of urine testing. A cross-sectional study in an urban clinic that offered urine chlamydia tests to 315 randomly selected adolescent girls in the waiting room found that only 40 percent of infected girls had had pelvic examinations and chlamydia testing as part of their clinical assessment. Without the benefit of

urine testing, the infections among the remaining girls would have gone undetected.[41]

In one juvenile detention center that lacked gynecological examination facilities, 28 percent of girls (and 99 percent of boys) of a total of 263 adolescents tested with urine-based NAATs in a cross-sectional study were infected.[42] A recent national study calculated the cost-effectiveness of a universal chlamydia screening program of adult women in jails. Assuming use of urine-based NAATs, a chlamydia prevalence of eight percent, and azithromycin treatment of 50 percent of infected inmates before release, the program was cost saving.[43]

The CDC is now funding research on the feasibility and acceptability of urine-based screening of young men and the cost-effectiveness of this screening in preventing sequelae in men and their female partners.[44] Because up to 40 percent of infected men lack symptoms,[45] they may unknowingly transmit chlamydia infection to their female sex partners. The cost-effectiveness of male screening will depend largely on the averted costs of sequelae in women, in whom most long-term complications occur.

Another testing innovation is the rapid point-of-care test, which uses endocervical or urethral specimens and allows patients to receive test results in about 30 minutes. Although these tests are less sensitive and specific than NAATs, they allow for rapid notification and treatment[46] and thus may be a useful option for patients who have severe symptoms or may be difficult to recontact.[47]

Other testing innovations, such as self-collected swabs and pooling of specimens, may be sensitive, convenient, and cost saving,[48] but are not currently approved for use by the U.S. Food and Drug Administration (FDA).

The CDC soon will publish new laboratory guidelines for chlamydia testing that will describe the performance of various FDA-approved tests, including NAATs and rapid tests, and the benefits of certain tests for specific clinical situations.

Providers should consider test performance, cost, provider and patient acceptance, and logistics of specimen collection and transportation when selecting a test for routine screening.

Performance depends on the test's sensitivity (probability of test being positive if infection is present) and specificity (probability of test being negative if infection is absent), as well as on disease prevalence.[49] The best test would be acceptable, highly sensitive and specific, and inexpensive, but available tests generally present a trade-off between test performance and cost.

Chlamydia tests with lower sensitivity will fail to identify some infected women who may develop complications without treatment. Tests with lower specificity will incorrectly classify some uninfected women as infected, which may be especially troubling to women in committed relationships. To reduce the adverse consequences of false-positive or false-negative tests, providers should be aware that the tests are imperfect and counsel patients accordingly.

The positive predictive value (probability that a positive test truly reflects the presence of disease)[50] of screening tests and cost-effectiveness of screening decline as disease prevalence declines. Screening with nonculture tests in low-prevalence populations, such as older or married women, may yield a significant number of false-positive results. Confirmatory testing of positive non-NAAT screening tests in low-prevalence populations is recommended.[51] There are no guidelines for confirmatory tests on NAATs; if confirmation is needed, a polymerase chain reaction NAAT can be used to confirm a ligase chain reaction NAAT, and vice versa.[52]

CHLAMYDIA: A DEFINITION

Chlamydia is an STD that is caused by the bacterium *Chlamydia trachomatis.* Because approximately 70 percent of women and 50 percent of men have no symptoms, most people infected with chlamydia are not aware of their infections and therefore may not seek health care.

When diagnosed, chlamydia can be easily treated and cured. Untreated, chlamydia can cause severe, costly reproductive and other health problems with short- and long-term consequences, including pelvic inflammatory disease (PID), which is the critical link to both infertility and potentially fatal tubal pregnancy.

Up to 40 percent of women with untreated chlamydia will develop PID. Undiagnosed PID caused by chlamydia is common. Of those with PID, 20 percent will become infertile; 18 percent will experience debilitating, chronic pelvic pain, and nine percent will have a life-threatening tubal pregnancy. Tubal pregnancy is the leading cause of first-trimester, pregnancy-related deaths in American women.

Chlamydia may also result in adverse outcomes of pregnancy, including neonatal conjunctivitis and pneumonia. In addition, recent research has shown that women infected with chlamydia have a three- to five-fold increased risk of acquiring HIV, if exposed.

Chlamydia is also common among young men, who are seldom offered screening. Untreated chlamydia in men typically causes urethral infection, but may also result in complications such as swollen and tender testicles.

— U.S. Centers for Disease Control and Prevention

Choosing the most effective and cost-effective screening strategy is complex because it depends on infection prevalence in the screened population, the performance and costs of screening tests, and the effectiveness and costs of treatments used. No single strategy is appropriate for all clinical settings.

The CDC has developed a free, interactive software program to help providers choose a screening strategy. It calculates the impact (number of cases of PID averted) and cost-effectiveness (cost per case of PID averted) of a given screening strategy (www.cdc.gov/nchstp/dstd/HEDIS.htm). Users simply enter the age distribution of the population to be screened and the local cost of various test and treatment options, and the program evaluates various alternatives, allowing providers to tailor strategies to their own practices.

The availability of effective, single-dose treatment for chlamydia offers more good news. The CDC's most recent STD treatment guidelines[53] recommend a single dose of azithromycin or a seven-day course of doxycycline as first-line regimens; alternative regimens include a seven-day course of erythromycin or ofloxacin. No tests of cure are recommended for patients who have taken azithromycin or a full course of doxycycline because of the high efficacy of both regimens. Abstinence until seven days after the azithromycin treatment or completion of the doxycycline course is encouraged.

The CDC recommends a seven-day course of erythromycin base or amoxicillin for pregnant women; alternative regimens include erythromycin ethylsuccinate or a single dose of azithromycin. Tests of cure three weeks after treatment completion are recommended. Recent data indicate that 90 percent of primary care providers in two MCOs followed the CDC's treatment recommendations for uncomplicated chlamydia infection.[54]

Although azithromycin is more expensive than doxycycline, the CDC recommends azithromycin if complicance is of concern or if contact with health care providers is erratic.[55]

One randomized, controlled study of 196 women attending public clinics showed that doxycycline and azithromycin had cure rates of 95.9 percent and 94.9 percent, respectively, based on followup chlamydia testing results.[56] Ninety-four percent of the women who received doxycycline reported taking this medication for at least five days.

Two prospective studies in STD clinics using electronic medication monitoring systems found doxycycline compliance rates as low as 16 percent, although 94 percent of patients in one study had negative test results at followup.[57] These studies suggest that even an incomplete doxycycline course may be effective in curing infection in immunocompetent women; the minimum amount of doxycycline required for cure is currently unknown.[58] Clinically significant resistance of *Chlamydia trachomatis* to commonly used antibiotics has been reported, but is believed to be rare.[59] Drug resistance should be considered if repeated or persistent infections are documented.

One issue under review by the expert panel updating the CDC's STD treatment guidelines is recent evidence of gonococcal resistance to azirhromycin.[60] Widespread use of azithromycin for chlamydia infections, and other indicated diseases may promote azithromycin resistance in *Neisseria gonorrhoeae* by inadequate treatment of concurrent, undiagnosed gonococcal infections.

The treatment plan for an infected woman with chlamydia infection does not stop with antibiotics. Risk-reduction counseling and services for sex partners are critical next steps to prevent reinfection and ongoing transmission, because a high percentage of partners may be infected.[61] Risk-reduction counseling should include information about chlamydia transmission and sequelae and methods to prevent repeat infection.[62]

Partner services involve identifying and contacting sex partners of the infected person and referring them for testing, treatment, and counseling. Referral may be initiated by the patient herself, clinical staff, or local health department staff.

The most effective methods of partner services remain unclear,[63] and studies are underway at the CDC. Modeling studies indicate that the cost-effectiveness of different strategies depends on the model assumptions, including the rate of partner referral.[64]

A recent national survey of more than 5,000 randomly selected primary care physicians found that few offered partner services; less than 20 percent of physicians reported sending information elicited about sex partners to the local health department, and less than 10 percent gave patients medication for their sex partners or contacted the patients' sex partners.[65]

The CDC is now evaluating barriers to initiating partner services to guide future recommendations for providers and health systems such as MCOs.

NEXT STEPS IN PREVENTION

Several new tools can speed our efforts to reduce the enormous human and financial burden of chlamydia infection and its sequelae: highly sensitive, specific, and noninvasive screening tests; simple, effective treatment; and new decision-making and policy incentives for implementing routine screening of women served by the public and private sectors. As we take advantage of these innovations, we must address several unanswered questions.

- What are the barriers to and facilitators of routine screening of women at risk for chlamydia infection from the perspective of patients, providers, health

care systems, and policy makers? For example, would training providers raise their awareness of the value and cost-effectiveness of chlamydia screening? Would modifying billing methods that protect patients' confidentiality about STD testing increase acceptability of screening? Would adequate reimbursement for screening tests and coverage of single-dose therapy promote screening? Would clinic-based reminder and tracking systems such as those used for Pap smears facilitate periodic screening?

- As chlamydia screening of women increases and identifies more infected women, how can we determine the importance of screening in keeping prevalence rates low?
- Will mass media campaigns to increase awareness about the high prevalence of chlamydia infection increase consumer demand for risk assessment and screening and the sense of responsibility among men and women for preventing reinfection?
- What is the effectiveness and cost-effectiveness of routinely screening young men as a method to treat male infections and prevent infection of their female sex partners?

Finding the answers to these questions will require the input of clinicians, researchers, consumers, and experts in service delivery, public health, and health policy. Together their creative ideas can shift the balance of chlamydia prevention from bad news to good.

REFERENCES

1. Kaiser Family Foundation, *Sexually Transmitted Diseases in America: How Many Cases and at What Cost?* (Research Triangle Park, NC: American Social Health Association, 1998) p. 16.

2. Institute of Medicine, "Factors that Contribute to the Hidden Epidemic" in T. R. Eng and W. T. Butler, editors, *The Hidden Epidemic: Confronting Sexually Transmitted Diseases* (Washington, DC: National Academy Press, 1997), pp. 86-88.

3. Centers for Disease Control and Prevention, Division of STD Prevention, *Sexually Transmitted Disease Surveillance, 1998* (Atlanta, GA: Centers for Disease Control and Prevention, 1999); W. E. Stamm, "*Chlaymdia Trachomatis* Infections of the Adult," in K. K. Holmes, et al., editors, *Sexually Transmitted Diseases* (New York: McGraw Hill, 1999), pp. 407-11.

4. Centers for Disease Control and Prevention, "Recommendations for the Prevention and Management of *Chlamydia Trachomatis* Infections, 1993," *Morbidity and Mortality Weekly Report,* vol. 42, no. 2.

5. L. Finelli, et al., "Selective Screening versus Presumptive Treatment Criteria for Identification of Women with Chlamydial Infection in Public Clinics: New Jersey," *American Journal of Obstetrics and Gynecology,* vol. 174, pp. 1527-33.

6. W. M. McCormack, et al., "Fifteen Month Follow-up Study of Women Infected with *Chlamydia Trachomatis," New England Journal of Medicine,* vol. 300, pp. 123-25; E. Reees, "The Treatment of Pelvic Inflammatory Disease, *American Journal of Obstetricians and Gynecologists,* vol. 138, p. 1042; W. E. Stamm, et al., "Effect of Treatment for *Neisseria Gonorrhoeae* on Simultaneous Infection with *Chlamydia Trachomatis*," *New England Journal of Medicine,* vol. 310, pp. 545-49.

7. D. Rein, et al., "Direct Medical Cost of Pelvic Inflammatory Disease and Its Sequelae: Decreasing but Still Substantial," *American Journal of Obstetricians and Gynecologists,* vol. 95, p. 397.

8. Ibid.

9. L. Westrom, "Incidence, Prevalence, and Trends of Acute Pelvic Inflammatory Disease and Its Consequences in Industrialized Countries," *American Journal of Obstetricians and Gynecologists,* vol. 138, pp. 880-92.

10. World Health Organization, "Infections, Pregnancies, and Infertility: Perspectives on Prevention," *Fertility, Sterility,* vol. 47, p. 962.

11. L. Westrom, et al., "Pelvic Inflammatory Disease and Infertility," *Sexually Transmitted Diseases,* vol. 19, pp. 185-92.

12. Centers for Disease Control and Prevention, "Ectopic Pregnancy—United States, 1990-1992," *Morbidity and Mortality Weekly Report,* vol. 44, p. 46.

13. S. D. Hillis, et al., "Recurrent Chlamydial Infections Increase the Risks of Hospitalization for Ectopic Pregnancy and Pelvic Inflammatory Disease," *American Journal of Obstetricians and Gynecologists,* vol. 176, 103-7.

14. D. T. Fleming and N. J. Wasserheit, "From Epidemiological Synergy to Public Health Policy and Practice: The Contribution of Other Sexually Transmitted Diseases to Sexual Transmission of HIV Infection," *Sexually Transmitted Infections,* vol. 75, pp. 3-17.

15. Ibid.

16. J. Schachter, et al., "Prospective Study of Perinatal Transmission of *Chlamydia Trachomatis*," *Journal of the American Medical Association,* vol. 255, pp. 3374-77; J. R. Harrison, at al., "*Chlamydia Trachomatis* Infant Pneumonitis," *New England Journal of Medicine*, vol. 298, pp. 702-8.

17. M. R. Hammerschlag, "Chlamydia Infections in Infants and Children," in K. K. Holmes, et al., editors, *Sexually Transmitted Diseases, Third Edition* (New York: McGraw Hill, 1999), pp. 1155-64.

18. R. C. Brunham and G. McClarty, "Chlamydia," in L. R. Stanberry, D. I. Bernstein, editors, *Sexually Transmitted Diseases: Vaccines, Prevention, and Control* (San Diego: Academic Press, 2000), p. 349.

19. W. E. Stamm, "*Chlaymdia Trachomatis* Infections of the Adult," pp. 407-11; W. Cates Jr., "Epidemiology and Control of Sexually Transmitted Diseases in Adolescents," in M. Scydlower, M. A. Shafer, editors, *AIDS and Other Sexually Transmitted Diseases* (Philadelphia: Hanly & Belfus, 1990), pp. 409-24.

20. R. J. DiClemente, et al., "Determinants of Condom Use Among Junior High School Students in a Minority, Inner-city School District," *Pediatrics,* vol. 89, pp. 197-202.

21. S. E. Hillis, et al., "Risk Factors for Recurrent *Chlamydia Trachomatis* Infections in Women," *American Journal of Obstetricians and Gynecologists,* vol. 170, pp. 801-6.

22. G. R. Burstein, et al., "Incident *Chlamydia Trachomatis* Infections Among Inner-city Adolescent Females," *Journal of the American Medical Association,* vol. 280, pp. 521-26.

23. J. Schachter, "Biology of *Chlamydia Trachomatis*," in K. K. Holmes, et al., editors, *Sexually Transmitted Diseases, Third Edition* (New York: McGraw-Hill, 1999), pp. 391-401; C. M. Black, "Current Methods of Laboratory Diagnosis of *Chlamydia Trachomatis* Infections," *Clinical Microbiology Reviews*, vol. 10, pp. 160-84; B. P. Katz, et al., "Effect of Prior Sexually Transmitted Disease on the Isolation of *Chlamydia Trachomatis*," *Sexually Transmitted Diseases*, vol. 14, pp. 160-64; J. T. Graston, et al., "Importance of Reinfection in the Pathogenesis of Trachoma," *Review of Infectious Diseases*, vol. 7, pp. 717-25; R. B. Jones and B. E. Batteiger, "*Chlamydia Trachomatis* (Trachoma, Perinatal Infections, Lymphogranuloma Venereum, and Other Genital Infections), in G. L. Mandell, et al., editors, *Principles and Practice in Infectious Diseases, Fifth Edition* (Philadelphia: Churchill Livingstone, 2000), p. 1991.

24. Institute of Medicine, "The Neglected Health and Economic Impact of STDs" in T.R. Eng and W. T. Butler, editors, *The Hidden Epidemic: Confronting Sexually Transmitted Diseases* (Washington, DC: National Academy Press, 1997), p. 59.

25. D. Rein, et al., "Direct Medical Cost of Pelvic Inflammatory Disease and Its Sequelae," p. 397.

26. Centers for Disease Control and Prevention, "Recommendations for the Prevention and Management of *Chlamydia Trachomatis* Infections."

27. Centers for Disease Control and Prevention, "*Chlamydia Trachomatis* Genital Infections—United States, 1995," *Morbidity and Mortality Weekly Report,* vol. 46, pp. 193-98; D. J. Mosure, et al., "Region X Chlamydia Project. The Impact of Screening and Treatment on Chlamydia Positivity in Women Attending Family Planning Clinics," *American Journal of Epidemiology*, vol. 151, p. S10.

28. J. M. Marrazzo, et al., "Performance and Cost-effectiveness of Selective Screening Criteria for *Chlamydia Trachomatis* Infection in Women," *Sexually Transmitted Diseases*, vol. 24, pp. 131-41.

29. D. Scholes, et al., "Prevention of Pelvic Inflammatory Disease by Screening for Cervical Chlamydial Infection," *New England Journal of Medicine,* vol. 334, pp. 1362-66.

30. M. Egger, et al., "Screening for Chlamydial Infections and the Risk of Ectopic Pregnancy in a County in Sweden: Ecological Analysis, *British Medical Journal*, vol. 316, pp. 1776-80.

31. U.S. Preventive Services Task Force, "Screening for Chlamydial Infection: Recommendation and Rationale," *American Journal of Preventive Medicine,* vol. 20, pp. 90-94.

32. U.S. Preventive Services Task Force, *Guide to Clinical Preventive Services, Second Edition* (Baltimore: Williams & Wilkins, 1996), pp. 325-34.

33. Centers for Disease Control and Prevention, "Recommendations for the Prevention and Management of *Chlamydia Trachomatis* Infections"; U.S. Preventive Services Task Force, "Screening for Chlamydial Infection," pp. 90-94.

34. W. E. Levine, et al., *Chlamydia Screening Coverage of Sexually Active Adolescent Females in the United States.* (Presented at the 13th Meeting of the International Society for Sexually Transmitted Disease Research, Denver, CO, 1999.)

35. *NCQA's State of Managed Care Quality—2000* (www.ncqa.org)

36. Institute of Medicine, "Prevention of STDs," in T. R. Eng and W. T. Butler, editors, *The Hidden Epidemic: Confronting Sexually Transmitted Diseases* (Washington, DC: National Academy Press: 1997), p. 162; K. Chillag, *Provider Acceptance of Federal Practice Guidelines.* (Presented at Society for Applied Anthropology Annual Meeting, San Francisco, CA, March 29-April 2, 2000.)

37. C. M. Black, "Current Methods of Laboratory Diagnosis of *Chlamydia Trachomatis* Infections," *Clinical Microbiological Reviews,* vol. 10, pp. 160-84.

38. C. M. Black, "Current Methods of Laboratory Diagnosis of *Chlamydia Trachomatis* Infections," pp. 160-84; C. Black, et al., *Head-to-Head Comparison of Cervical and Urine LCR and PCR with a DNA Probe Test for* Chlamydia Trachomatis *Infection in Women*. (Presented at a joint meeting of the American Sexually Transmitted Disease Association and Medical Society for Study of the Venereal Diseases, Baltimore, MD, May 3-7, 2000.)

39. C. M. Black, "Current Methods of Laboratory Diagnosis of *Chlamydia Trachomatis* Infections," pp. 160-84.

40. Ibid.

41. M. K. Oh, et al., *Utility of PCR-based Urine Screening for Chlamydia in Adolescent Clinic Setting: Prevalence among Females Not Having Indication for a Pelvic Examination*. (Presented at the American Pediatric Society and the Society for Pediatric Research, Washington, DC, May 6-10, 1996.)

42. M. K. Oh, et al., "Urine-based Screening of Adolescents in Detention to Guide Treatment for Gonococcal and Chlamydial Infections: Translating Research into Intervention," *Archives of Pediatric and Adolescent Medicine,* vol. 152, pp. 52-56.

43. J. R. Kraut, et al. , *Cost-effectiveness of Universal Screening for STDs in U.S. Corrections Facilities.* (Presented at 2000 National STD Prevention Conference, Milwaukee, WI, December 4-7, 2000.)

44. U. S. Department of Health and Human Services, Centers for Disease Control and Prevention, "Request for Cooperative Agreement Number 99104," *Federal Register,* vol. 64, pp. 26761-5.

45. M. A. Urban, et al., "Results of a Screening Program for *Chlamydia Trachomatis* Infection in Men Attending a Sexually Transmitted Diseases Clinic, *Sexually Transmitted Diseases,* vol. 24, p. 587; G. H. Karam, et al., "Symptomatic *Chlamydia Trachomatis* Infections among Sexually Active Men, *Journal of Infectious Diseases,* vol. 154, pp. 900-03.

46. C. M. Black, "Current Methods of Laboratory Diagnosis of *Chlamydia Trachomatis* Infections," pp. 160-84.

47. T. L. Gift, et al., "The Rapid Test Paradox: When Fewer Cases Detected Leads to More Cases Treated. A Decision Analysis of Tests for *Chlamydia Trachomatis*," *Sexually Transmitted Diseases,* vol. 26, pp. 232-40.

48. H. C. Wisenfeld, et al., "The Vaginal Introitus: A Novel Site for *Chlamydia Trachomatis* Testing in Women," *American Journal of Obstetricians and Gynecologists*, vol. 174, pp. 1542-6; M. Domeika and O. Drulyte, "Use of PCR for the Detection of Genital *Chlamydia Trachomatis* Infection on Self-Obtained Mailed Vaginal Samples," *Acta Obstetrics and Gynecology Scandinavia,* vol. 79, pp. 570-75; M. Domeika, et al., "Evaluation of Vaginal Introital Sampling As an Alternative Approach for the Detection of Genital *Chlamydia Trachomatis* Infection in Women," *Acta Obstetrics and Gynecology Scandinavia* vol. 78, pp. 131-36; J. Krepel, et al., "The Impact on Accuracy and Cost of Ligase Chain Reaction Testing by Pooling Urine Specimens for the Diagnosis of *Chlamydia Trachomatis* Infections," *Sexually Transmitted Diseases*, vol. 26, pp. 504-7.

49. C. H. Hennekens and J. E. Buring, *Epidemiology in Medicine* (Boston: Little, Brown, 1987), p. 232.

50. Ibid.

51. Centers for Disease Control and Prevention, "Recommendations for the Prevention and Management of *Chlamydia Trachomatis* Infections, 1993."

52. C. M. Black, "Current Methods of Laboratory Diagnosis of *Chlamydia Trachomatis* Infections," pp. 160-84.

53. Centers for Disease Control and Prevention, "1998 Guidelines for Treatment of Sexually Transmitted Diseases," *Morbidity and Mortality Weekly Report,* vol. 47, pp. 53-6.

54. K. L. Irwin, et al., *Adherence to CDC Guidelines for STD Treatment in Managed Care Organizations: Preliminary Results from Two Mixed Model Health Plans.* (Presented at Proceedings of the 13th Meeting of the International Society for STD Research, Denver, CO, July 11-14, 1999.)

55. Centers for Disease Control and Prevention, "1998 Guidelines for Treatment of Sexually Transmitted Diseases," pp. 53-6.

56. S. D. Hillis, et al., "Doxycycline and Azithromycin for Prevention of Chlamydial Persistence or Recurrence One Month after Treatment in Women," *Sexually Transmitted Diseases,* vol. 26, pp. 5-10.

57. L. H. Bachmann, et al., "Measured versus Self-reported Compliance with Doxycycline Therapy for Chlamydia-associated Syndromes: High Therapeutic Success Rates Despite Poor Compliance," *Sexually Transmitted Diseases,* vol. 26, pp. 272-78; M. Augenbraun, et al., "Compliance with Doxycycline Therapy in a Sexually Transmitted Disease Clinic," *Sexually Transmitted Diseases,* vol. 25, pp. 1-4.

58. J. Schacter, "What Is the Minimally Effective Treatment for *Chlamydia Trachomatis* Infection? The Compliance Paradox," *Sexually Transmitted Diseases,* vol. 26, pp. 279-80.

59. J. Somani, et al., "Multiple Drug-resistant *Chlamydia Trachomatis* Associated with Clinical Treatment Failure," *Journal of Infectious Diseases,* vol. 181, pp. 1421-7.

60. Centers for Disease Control and Prevention, "Fluoroquinolone-resistance in *Neisseria Gonorrhoeae,* Hawaii, 1999, and Decreased Susceptibility to Azithromycin in *N. Gonorrhoeae,* Missouri, 1999," *Morbidity and Mortality Weekly Report,* vol. 49, pp. 833-37.

61. T. C. Quinn, et al., "Epidemiologic and Microbiologic Correlates of *Chlamydia Trachomatis* Infection in Sexual Partnerships," *Journal of the American Medical Association,* vol. 276, pp. 1737-42.

62. Centers for Disease Control and Prevention, "Ectopic Pregnancy—United States, 1990-1992," p. 46.

63. B. A. Macke and J. E. Maher, "Partner Notification in the United States. An Evidence-based Review," *American Journal of Preventive Medicine,* vol. 17, pp. 230-42.

64. R. Welre, et al., "Cost-effectiveness of Screening Programs for *Chlamydia Trachomatis*," *Sexually Transmitted Diseases,* vol. 27, pp. 518-29; M. R. Howell, et al., "Partner Notification to Prevent Pelvic Inflammatory Disease in Women: Cost-effectiveness of Two Strategies," *Sexually Transmitted Diseases,* vol. 24, pp. 287-92.

65. J. S. St. Lawrence, et al., *National Survey of U.S. Physicians' STD Screening, Testing, Case Reporting, Clinical and Partner Notification Practices.* (Presented at 2000 National STD Prevention Conference, Milwaukee, WI, December 4-7, 2000.)

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THE LOST CHILDREN OF ROCKDALE COUNTY: TEENAGE SYPHILIS OUTBREAK REVISITED

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Two years have passed since the national airing of *Frontline: The Lost Children of Rockdale County,* a documentary that investigated a cluster of teenage syphilis in suburban Atlanta in 1996 and discovered an underground world of experimental sex and drug and alcohol abuse among a group of Rockdale teens whose parents appeared too busy or preoccupied to notice.

COMMUNITY REACTIONS

Community reaction in Rockdale has varied, from deeply personal responses to a host of well-intentioned but disjointed prevention efforts. A Georgia Public Television program manager who screened the PBS documentary before it ran on her station resigned shortly afterward, saying she wanted to spend more time with her children. A local church established a $1 million hangout, Teen Planet, in a Rockdale County shopping center, where kids can play video games while listening to gospel music. And students at Rockdale County High invited a week's worth of speakers, from experts at the Centers for Disease Control and Prevention (CDC) to HIV-positive young adults, for discussions on teen pregnancy, rape, and sexually transmitted diseases (STDs).

The Coalition for Children and Families in Rockdale County was formed by concerned residents, and it organized programs for teens and parents of teens. And the Health Department that serves Rockdale County received extra funding from the state that allowed them to hire a new staff member to work with teens full time.

"There have been some steps taken," says Julie Sosebee, a county nurse manager with the Rockdale County Public Health Department for seven years, "but the response is not what we expected after we had the town hall meetings. It's been more fragmented."

Repeated airings of the Peabody-award-winning documentary, first shown nationally in the fall of 1999, and follow-ups by local stations and newspapers, have been draining to the residents of Rockdale County, a rural farming area that evolved into a sprawling network of mostly white, middle-class suburbs southwest of Atlanta, where the schools routinely achieve test scores well above the national average.

While the media maelstrom was called a "clear wake-up call" by some residents, others said it was an unfair characterization of a community no different than countless others around the country, where teens engage in risky behaviors, sexual and otherwise, without their parents' knowledge.

"I think the documentary was a good thing for every community except Rockdale County," says Sosebee. "What happened here made a lot of people aware of these problems. But this community was more embarrassed than anything else." One positive note: Sosebee says the Health Department didn't see another case of teen syphilis in Rockdale for close to three years.

The documentary's emotional impact—and the residents' and students' defensiveness—was compounded by the fact that a few months before the documentary's broadcast, a teenager at the academically lauded Rockdale's Heritage High School shot and wounded six of his fellow students.

Students say they have been shunned by peers outside Rockdale County who "say things like 'You're an STD and you shoot each other, go away,'" said Zach Moore, a Heritage student, to reporters at a town hall meeting taped to accompany a re-broadcast of *The Lost Children*. "We've been totally harassed, but the documentary is about something that happened six years ago, way before we got here."

WAKE-UP CALL

Other residents say the documentary led to town hall meetings, a new openness between teachers and students, and a renewed commitment among parents.

Indeed, a week after the first showing of the documentary, more than 300 Rockdale County parents, grandparents, and neighbors gathered at the Nancy Guinn Library in Conyers to talk about how to respond. This was in stark contrast to an earlier community forum in 1997, shortly after the syphilis outbreak was diagnosed but before the documentary was shown, where about 50 residents showed up.

At the later gathering, students were invited to speak, and pastors, law enforcement officers, and counselors were available to talk with troubled parents and teens. Several residents said aloud that the documentary should have been titled, *Where Are the Parents of Rockdale County?*

Babette Davidson, a former program manager for Georgia Public Television and mother of four, said she "cried all the way through" her first viewing of the documentary. Davidson quit her job a few months later and took a new position that would allow her to work from her home and spend more time with her children. "When I saw

all these things happening between three and six [p.m.], I decided I had to make a change. I have a responsibility to be there…," Davidson said after her resignation. "I have to have my priorities in order."

THE PROBLEM

Beth Ross, director of student services for Rockdale County Schools, said in a follow-up interview with *Frontline* that many of the students she worked with in the schools lacked structure and clear limits. "No one had ever sat down and specifically said to them, 'This is how far you go,'" she said. Some students, she said, were more likely to confide in the school counselors than their parents. And parents, when approached, were resistant to advice because, "they don't want another adult to know more about what their child is doing than they know."

Ross said she learned of students who were sneaking out of the house in the middle of the night, driving without a license, and attending parties where there were drugs and drinking. Inundated with sexual material through movies, television, and the Internet, the students she saw were glibly knowledgeable about the mechanics of sex, but not fully aware of the ramifications.

"They didn't in the end get what they wanted, which was to be liked or loved," Ross said. "They don't have the maturity. They don't have the experience. And they don't understand the consequences."

The idea for the documentary, which was produced by husband-wife team Barak Goodman and Rachel Dretzin Goodman, began when the Rockdale County Health Department reported that a high incidence of girls and boys under 18 were coming in with a variety of STDs, including 17 cases of teen syphilis, an uncommonly high incidence given that there were about 7,000 cases that year in the entire country.

Interviews with the students and an epidemiological investigation revealed that a small core of white females, most younger than 16, were responsible for the many sexual contacts spreading the diseases, including syphilis. "There was a nucleus, a small number of young people who were having…as much as 50 sexual contacts with other young people…and that's how the diseases were spreading so rapidly in the community," Ross said.

The survey the CDC uses has a category for "four or more" lifetime sexual partners, said Kathleen Toomey, director of the Georgia Division of Public Health. "This rendered our survey almost comical," Toomey told *Frontline.* "Because they weren't in any way capturing the magnitude of the risk behavior that these kids were experiencing."

Syphilis, the most serious of the STDs being spread, also raised the risk of congenital syphilis in infants if any of the girls were to become pregnant. While 15 pregnancies were later reported in the total group involved, none resulted in congenital syphilis, says Sosebee.

THE TEENAGERS

The Rockdale teens involved in the outbreak, some of whom were interviewed with their families for the *Frontline* documentary, were a cross-section: working class, upper class, good students, poor students, athletes, loners, African-American, white. Perhaps most striking was the way the documentary juxtaposed the innocence and promiscuity of the young teens: study groups who were watching, then re-enacting, scenes from The Playboy Channel in their bedrooms; shy preteen girls who had group sex—anal, vaginal, and oral, sometimes with multiple partners at once—at parties.

Claire Sterk, a professor with the Emory University School of Public Health, was a member of the team that investigated the syphilis outbreak, and described for *Frontline* the girls she met in the Health Department clinic as "sweethearts." "They had soft faces, soft expressions, their voices were very soft. They acted insecure. Had shy smiles. At times, they would blush if they were talking about things that had been happening.… And so here you had the tension between the way they looked and the kinds of things that had been happening in their lives."

Later conversations with these girls, however, revealed they were not victims who had been forced or coerced into participating—most admitted they had done so willingly. "The girls would talk about going to these sex parties as if they were going to the movies, or going to meet and have pizza together someplace," Sterk said. The girls said that they were bored, that there wasn't much to do at home or in the community, and they thought the sexual activities would be a way to claim their independence and have some fun. What the girls found, Sterk said, was just the opposite. "They ended up feeling out of control, feeling lonely, and feeling powerless," she said. "They were in over their heads. They didn't know what to do, and there was nobody to talk to."

YOUTH-PARENT DISCONNECT

Even after some of the girls were diagnosed with STDs, many of their parents refused to admit that their child was sexually active. They would tell public health workers their daughter must have gotten the disease "some other way." In follow-up interviews between six months and a year after the initial interviews, most said their parents had not taken action in response to the outbreak. Also, even after diagnosis, many of the girls continued to be sexually active. "Saying no for many of them, at least from their perspective, meant losing all their friends…," Sterk said.

Experts who have viewed *The Lost Children* documentary say it is especially disturbing because of the obvious dis-

connect it revealed between youth and their parents, especially in matters concerning sex.

"Over and over, throughout the documentary, we see parents who are either clueless or blatantly unconcerned about their children. We see parents who have replaced caring and personal involvement with the purchase of material goods and we see parents who are afraid to discipline their children," says Robert Blum, a professor and director of the Division of General Pediatrics and Adolescent Health at the University of Minnesota, in analyzing the *Frontline* findings. "We see young people who even three years after the event don't fully understand the magnitude of the behaviors in which they were participants. And we see a community that has changed little or not at all…."

In fact, a few years after the outbreak, the state initiated a special adolescent health teen pregnancy prevention program, Teen Plus, for communities with high rates of teenage pregnancy. Rockdale was set to get funding for the program, which would have included clinical services, youth mentoring, and after school programs. Vocal protestors, led by a conservative county commissioner and state legislators, opposed the program, saying that it "promoted sex," says Sosebee, and Rockdale didn't get the funding.

NATIONAL RESPONSE

Response to the documentary has extended far beyond Rockdale County. Viewers from across the country wrote *Frontline* producers to say that these problems weren't isolated to one Atlanta suburb. "We come from a generation that teaches our children they need no rules and that rules limit creativity," wrote Pamela Bolton from Baton Rouge, LA. "We should teach them self-discipline, responsibility, and respect. Without communication, we leave our children powerless."

The culture of workaholism was cited by several viewers. "We have been conditioned to accept work weeks of 60 or even 70 hours as 'normal.' Is it any wonder that parents lack the energy and time to put into the work of raising children and young adults? Is it any surprise that children raised in such an atmosphere would value 'things' above relationships and perhaps even come to regard their bodies as a thing?" asked Stephen Healy of Amherst, MA.

The antidote, agreed several viewers, is to make children a part of an active family life, keep them engaged, and give them limits. "Regardless of how many of my contemporaries lessen the grip on their children, I will continue strictly supervising my own with more resolve than ever," wrote Trish Thompson of Tallahassee, FL.

SOLUTIONS

To help prevent sexual risk behavior among teens, Blum and other experts say communities must create:

- Safe places for young people to congregate with adult supervision
- Opportunities for young people to actively contribute to their family, neighborhood, and community
- Opportunities for active recreation and for young people to have fun and enjoy themselves
- An adult in the life of every young person who is "crazy about them"

"All of these things that we're seeing in adolescence: sexual promiscuity, violence, they all have the same root cause," says the documentary's coproducer, Barak Goodman. "Which is that people, parents, but also others, are not stepping in and taking control of children. Giving them limits. And giving them boundaries. And giving them a direction."

About the Author

Mary Loftus, an editor and freelance writer in Atlanta, GA, was among the inaugural Class of 2000 Knight Journalism Fellows at the Centers for Disease Control and Prevention, and spent her fellowship with epidemiologists and health communication specialists on the CDC's Syphilis Elimination team.

OUR SYMPATHIES TO THOSE AFFECTED BY SEPTEMBER 11 EVENTS

SIECUS would like to extend our sympathies to all those affected by the tragic events of September 11. Our hearts go out to the victims and their families, the rescue workers, and the entire nation.

NEW VACCINES MAY GIVE SEXUALITY EDUCATION ADVOCATES THE SHOT THEY NEED

Stacy Weibley, M.P.A.
SIECUS Senior Public Policy Associate

Unprecedented attention has recently been given to vaccine development for STDs. The new, innovative $34 million Dale and Betty Bumpers Vaccine Research Center (VRC), located on the National Institutes of Health campus in Bethesda, MD, is testimony to this heightened interest.

VRC is the first federal facility devoted entirely to vaccine research and production. By integrating the capacities of a biotech company, a major academic institution, and a federal agency, the center is designed to streamline the development of lifesaving vaccines. VRC's first task is to target HIV, but this will just be the beginning of its efforts.[1]

NEW HERPES VACCINE

A new vaccine created by SmithKline Beecham has proved effective against genital herpes (HSV-2) in certain groups. Public health officials have recently sounded the alarm about the rapid spread of the disease, as the incidence of infections in the United States rose 82 percent from the early 1970s to the mid 1980s and has remained relatively stable throughout the 1990's.[2] In fact, approximately one in five adults in the United States has genital herpes, although only one-third of those are aware that they have the virus.[3]

The preventative value of this particular vaccine, Simplirix, extends only to women who are seronegative for HSV-2 and have never had cold sores (HSV-1). There is hope, nonetheless, that a similar vaccine with a broader scope is not far behind. Researchers also note that widespread use of the vaccine would likely reduce genital herpes for both sexes, since it would lower the chance of men coming in contact with other infected persons.[4]

TARGET IS YOUTH

As STD vaccine development proliferates, public health officials, advocates, and parents will be forced to revisit traditional STD-prevention and sexuality education messages. Indeed, current research indicates that the majority of herpes infections are contracted during adolescence and young adulthood. Dr. Lawrence Stanberry of the University of Texas at Galveston suggests that the herpes vaccine might be most useful in pre-pubescent girls. "You are going to have to target the youngest group of women you can—maybe 10 to 13-year-old girls, " he said. He added that in some areas as many as five percent of girls in that age group are already infected with genital herpes.[5]

NEW PREDICAMENT

Parents, in particular, will face a new predicament: to accept the possibility that their child will engage in behaviors that may place them at risk for genital herpes or other STDs and vaccinate him or her at an early age, or deny the possibility and expose their child to risk. Will the choice not to vaccinate fuel efforts to promote abstinence-only-until-marriage education? If widespread vaccines are available and parents do choose to vaccinate their children, will they feel that the onus is no longer on them to continue a dialogue about sexuality?

The dynamic of the battle over abstinence-only-until-marriage education will also likely be transformed. Efforts to undermine public confidence in condoms with the "condoms don't work anyway" message of abstinence-only-until-marriage proponents will ultimately be a moot point. These tactics may morph into attacks on birth control, which has long been viewed by many conservatives as the locus of sexual permissiveness.

In any event, advocates of responsible, accurate sexuality education must continue to be flexible and aware, prepared to be called to task in a public health environment that is in constant flux.

REFERENCES

1. S. Squires, "The First Shot," *The Washington Post,* October 9, 2001.

2. L. Gregory, et al., "Incidence of Herpes Simple Virus Type 2 Infection in the United States," *American Journal of Epidemiology,* vol. 153, no. 9, pp. 912-20.

3. "Herpes: Get the Facts," The American Social Health Association, http://www.ashastd.org/hrc/educate.html.

4. D. Q. Haney, "Vaccine Prevents Herpes in Women," *The Associated Press,* September 18, 2000.

5. M. Fox, "Herpes Vaccine Works for Women, Not Men," *Reuters.*

SEXUALLY TRANSMITTED DISEASES IN THE UNITED STATES

More than 25 diseases are primarily spread through sexual activity. The trends for each disease vary considerably, but together these infections comprise a significant public health problem.[1]

In the United States, more than 65 million people are currently living with an incurable sexually transmitted disease (STD). An additional 15 million people become infected with one or more STDs each year, roughly half of whom contract lifelong infections. Yet, STDs are one of the least recognized health problems in the country today.[2]

While extremely common, STDs are difficult to track. Many people with these infections do not have symptoms and remain undiagnosed. Even diseases that are diagnosed are frequently not reported and counted. These "hidden" epidemics are magnified with each new infection that goes unrecognized and untreated.[3]

INCIDENCE AND PREVALENCE

- In 2000, 14,707 adult and adolescent males from the 36 areas of the country with confidential HIV-infection reporting were diagnosed as HIV positive. In total, 97,712 cases among adult and adolescent males have been reported through December 2000.[4]
- In 2000, 6,769 adult and adolescent females from the 36 areas of the country with confidential HIV-infection reporting were diagnosed as HIV positive. In total, 38,154 cases among adult and adolescent females have been reported through December 2000.[5]
- In 2000, 31,501 adult and adolescent males were diagnosed with AIDS. In total, 635,451 cases among adult and adolescent males have been reported through December 2000.[6]
- In 2000, 10,459 adult and adolescent females were diagnosed with AIDS. In total, 130,104 cases among adult and adolescent females have been reported through December 2000.[7]
- Not including HIV, the most common STDs are chlamydia, gonorrhea, syphilis, genital herpes, human papilloma virus (HPV), hepatitis B, trichomoniasis, and bacterial vaginosis. While bacterial vaginosis is a genital infection that is not sexually transmitted, it is associated with sexual intercourse.[8]
- Chlamydia is the most commonly reported infectious disease in the United States. Reported chlamydia rates in women greatly exceed those in men, largely because screening programs have been primarily directed at women. True rates are probably far more similar for women and men.[9]
- An estimated three million people become infected with chlamydia each year in the United States and an estimated two million Americans are currently infected.[10]
- In 1999, 659,441 chlamydial infections were reported to the Centers for Disease Control and Prevention (CDC) from 49 states, the District of Columbia, and New York City (for the state of New York, only cases in New York City were reported).[11]
- In 1999, the overall rates of chlamydial infection among women in the United States was four times higher than the reported rate among men, reflecting the large number of women screened for this disease.[12]
- For women, the highest age-specific reported rates of chlamydia in 1999 occurred among 15- to 19-year-olds and 20- to 24-year-olds.[13]
- 75 percent of women and 50 percent of men with chlamydia have no symptoms. The majority of cases therefore go undiagnosed and unreported.[14]
- An estimated 650,000 people become infected with gonorrhea each year in the United States.[15]
- In 1999, 360,076 cases of gonorrhea were reported in the United States.[16]
- In 1999, among women, 15- to 19-year-olds had the highest reported rate of gonorrhea, while among men, those 20 to 24 years of age had the highest rate.[17]
- The reported gonnorrhea rate in the United States remains the highest of any industrialized country: roughly 50 times that of Sweden and eight times that of Canada.[18]
- Ten to 20 percent of women with gonnorrhea and chlamydia develop one of the most serious complications, pelvic inflammatory disease (PID).[19]
- An estimated 70,000 people become infected with syphilis each year in the United States.[20]
- In 1999, 6,657 cases of primary and secondary syphilis were reported to the CDC, a decline of 22.2 percent from 1997, when 8,556 cases were reported.[21]

- In 1999, the reported rate of primary and secondary syphilis among men was 1.5 times greater than the rate among women.[22]
- In the United States, the reported rate of syphilis is at the lowest level since reporting began in 1941. The unprecedented low rate of syphilis overall, combined with cases concentrated in only 20 percent of U.S. counties, has created a unique but narrow window of opportunity to eliminate syphilis in the United States.[23]
- An estimated 1 million people become infected with herpes each year in the United States, and an estimated 45 million Americans are currently infected.[24]
- An estimated 5.5 million people become infected with HPV each year in the United States, and an estimated 20 million Americans are currently infected.[25]
- There are 30 distinct types of HPV that can infect the genial area. Of these, some types cause genital warts and others cause subclinical infections.[26]
- An estimated 120,000 people become infected with hepatitis B each year in the United States, and an estimated 417,000 Americans are currently infected.[27]
- Hepatitis B vaccinations have been recommended for people with risk factors since the vaccine became available in 1981.[28]
- An estimated 5 million people become infected with trichomoniasis each year in the United States.[29]
- No recent surveys of the estimated number of people currently infected with gonorrhea, syphilis, trichomoniasis, or bacterial vaginosis have been conducted.[30]
- Approximately 25 percent of all new STD infections are in teenagers.[31]
- Young women are biologically more susceptible to chlamydia, gonorrhea, and HIV.[32]
- An estimated 75 percent of the reproductive-age population have been infected with sexually transmitted HPV.[33]
- Infection with certain types of HPV place women at increased risk for cervical cancer.[34]
- Research indicates that approximately one percent of sexually active adults in the United States have genital warts.[35]
- More than one in five Americans—45 million people—are infected with genital herpes.[36]
- Herpes is more common in women, infecting approximately one out of four, versus one out of five men.[37]
- Women who are infected with an STD while pregnant can have early onset of labor, premature rupture of the membranes, or uterine infections before and after delivery.[38]
- Researchers estimate that men who have sex with men (MSM) still account for 42 percent of new HIV infections annually in the United States and for 60 percent of all new HIV infections among men.[39]
- Race and ethnicity in the United States are risk markers that correlate with other more fundamental determinants of health status, such as poverty, access to quality health care, health care seeking behavior, illicit drug use, and living in communities with high prevalence of STDs.[40]
- Multiple studies and surveillance projects have demonstrated a high prevalence of STDs in persons entering jails and juvenile detention facilities.[41]
- Compared to older adults, adolescents 10 to 19 years of age and young adults 20 to 24 years of age are at higher risk for acquiring STDs: they may be more likely to have multiple (sequential or concurrent) sexual partners rather than a single, long-term relationship; they may be more likely to engage in unprotected intercourse; and they may select partners at higher risk.[42]

ATTITUDES

The Kaiser Family Foundation and *Seventeen Magazine* conducted a national survey of over 500 teens to examine their knowledge and attitudes about STDs.[43] Findings included:

- Among young people 12 to 17 years of age, 56 percent say that STDs and 50 percent say HIV/AIDS are a big problem facing people their age.
- Among young people 15 to 17 years of age, more than two thirds are personally worried about becoming infected with HIV/AIDS and other STDs, like herpes or gonorrhea.
- Twenty percent of all young people surveyed know someone who has an STD, and one in 10 knows someone that is HIV positive.
- Among those young people who are sexually active, half say they know someone with an STD.
- Among teens who have had sexual intercourse, 50 percent realize their risk.

CRITICAL COMPONENTS OF STD PREVENTION AND CONTROL**

Communities need critical prevention and control services to help reduce costly complications of STDs. They should include both these patient-based and population-based approaches:

- ***Screening high-risk populations for prevalent STDs.*** Because the prevalence of STD infections varies from place to place, private sector providers may benefit from consulting with public health professionals on disease prevalence in their community in order to select cost-effective strategies for providing relevant STD-screening services.

- ***Treating individuals with diagnosed and presumptive infections.*** Recommendations of STD experts on treatment regimens for STDs should be readily available to health care providers. Quality assurance programs should be implemented to ensure that STD treatment is consistent with state-of-the-art medicine.
- ***Providing prevention counseling and education.*** Both public and private sources are needed to provide STD-prevention counseling and education to individual patients to reach those affected by STDs. Such services are essential to reach sexual partners, to address future infections, and to ensure that medication is taken properly and patients return for followup care. Community education about STD prevention is also important for changing risky behavior before infection occurs.
- ***Notifying, treating, and educating partners of persons diagnosed with STDs.*** A sexual partner who has been exposed to an STD should be informed of his or her potential infection by the infected person, his or her health care provider, the provider's staff, or public health staff trained in partner notification. In most states, the law protects public health personnel in the notification process but does not protect other persons. Private providers and public health personnel may work together to provide sexual contacts with information on all aspects of needed care. Notification is a key step to prevent reinfection and further spread of STDs.
- ***Reporting STD cases to assist in planning, evaluating, resource allocating, and coordinating efforts.*** Health departments monitor and analyze reported STDs to identify problems in specific communities, to evaluate the effects of control measures, and to detect changes in trends. Complete and accurate reporting is essential so that the partnership of private providers and public health personnel can appropriately address STD problems. Laws in every state require providers to report some STDs. Most states require reporting of gonorrhea, syphilis, chlamydia, and AIDS. Several require reporting of herpes, HIV infection, or STD complications such as PID. Under-reporting of STDs results in failure to note disease trends and inadequate planning to address STD problems.

WHY COMPONENTS ARE NEEDED

These components are needed because:

- ***Screening and treatment will prevent significant future complications.*** When left untreated, STDs can result in severe consequences, including infertility, tubal pregnancy, chronic pain, cancer, premature births, low birth weight, congenital infections in newborns, and even death. In addition, HIV transmission is much more likely when other STDs are present, making STD treatment an important intervention for prevention of HIV infection.
- ***Screening and early treatment are cost-effective.*** The cost of untreated STDs far exceeds the cost of prevention services.
- ***These approaches will result in a healthier population.*** STDs are strongly linked to long-term health complications and are one of the most important preventable causes of adverse outcomes of pregnancy, including low birth weight/prematurity, congenital infection, stillbirth, and postpartum infection. The two leading causes of preventable infertility are chlamydia and gonorrhea.

  Women, adolescents, and people of color are disproportionately affected by STDs and their consequences. STD prevention services could dramatically lower the incidence of STDs, their long-term consequences, and their significant cost.

  The overall health of Americans would improve with the routine availability of these components of STD prevention.

RESOURCES

Alan Guttmacher Institute (AGI)
This organization's mission is to protect the reproductive choices of women and men in the United States and around the world. AGI seeks to inform individual decision-making, encourage scientific inquiry, enlighten public debate, and promote the formation of sound public- and private-sector programs and policies.
120 Wall Street, 21st Floor
New York, NY 10005
Phone: 212/248-1111
Fax: 212/248-1951
Web site: http://www.agi-usa.org

American Social Health Association
This organization is dedicated to stopping STDs and their harmful consequences to individuals, families, and communities.
P.O. Box 13827
Research Triangle Park, NC 27709
Phone: 919/361-8400
Fax: 919/361-8425
Web site: http://www.ashastd.org

Centers for Disease Control (CDC)
National STD/AIDS Hotline
This hotline provides anonymous, confidential information on STDs and how to prevent them. It also provides referrals to clinical and other services. Service is available in English 24 hours a day, seven days a week; in Spanish 8 A.M. until 2 A.M., Eastern Time, seven days a week; and via TTY for the Deaf and Hard of Hearing 10 A.M. until 10 P.M., Eastern Time, Monday through Friday.

Phone: 800/342-AIDS (English)
800/344-7432 (Spanish)
800/243-7889 (TTY)

CDC National Prevention Information Newtork (NPIN)
This is the U.S. reference, referral, and distrubution service for information on HIV/AIDS, STDs, and tuberculosis (TB).
P.O. Box 6003
Rockville, MD 20849-6003
Phone: 800/458-5231; International: 301/562-1098
Fax: 888/282-7681; International Fax: 301/562-1050
E-mail: info@cdcnpin.org

The Henry J. Kaiser Family Foundation
This foundation is an independent philanthropy focusing on the major health care issues facing the nation. The Foundation is an independent voice and source of facts and analysis for policymakers, the media, the health care community, and the general public. It publishes fact sheets, issue updates, and research.
2400 Sand Hill Road
Menlo Park, CA 94025
Phone: 650/854-9400
Fax: 650/854-4800
Web site: http://www.kff.org

National Herpes Hotline (NHH)
This hotline provides information and referrals to anyone concerned about herpes. Trained Health Communication Specialists are available to address questions related to transmission, prevention, and treatment of herpes simplex virus (HSV). The NHH also provides support for emotional issues surrounding herpes, such as self-esteem and partner communication. The hotline is open from 9 A.M. to 7 P.M., Eastern Time, Monday through Friday.
Phone: 919/361-8488

National HPV and Cervical Cancer Prevention Hotline
This hotline provides up-to-date information on the virus and its link to cancer through free information to the public about risk reduction, diagnosis and treatment of HPV, and the prevention of cervical cancer, including the most up-to-date FDA-approved technologies. The hotline is open from 2 P.M. to 7 P.M., Eastern Time, Monday through Friday.
Phone: 919/361-4848

Sexuality Information and Education Council of the United States (SIECUS)
SIECUS' mission is to affirm that sexuality is a natural and healthy part of living; to develop, collect, and disseminate information; to promote comprehensive education about sexuality; and to advocate the right of individuals to make responsible sexual choices.
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New York, New York 10036-7802
Phone: 212/819-9770
Fax: 212/819-9776
Web site: http://www.siecus.org

REFERENCES

1. Centers for Disease Control and Prevention, *Tracking The Hidden Epidemics: Trends in STDs in the United States,* 2000 (Atlanta, GA: Centers for Disease Control and Prevention, 2000), p. 2.

2. Centers for Disease Control and Prevention, *Tracking The Hidden Epidemics: Trends in STDs in the United States,* 2000 (Atlanta, GA: Centers for Disease Control and Prevention, 2000), p. 1.

3. Ibid.

4. U. S. Department of Health and Human Services, *HIV/AIDS Surveillance Report* (Atlanta, GA: Centers for Disease Control and Prevention, 2000), vol. 12, no. 2, p. 15.

5. Ibid.

6. U. S. Department of Health and Human Services, *HIV/AIDS Surveillance Report* (Atlanta, GA: Centers for Disease Control and Prevention, 2000), vol. 12, no. 2, p. 18.

7. U. S. Department of Health and Human Services, *HIV/AIDS Surveillance Report* (Atlanta, GA: Centers for Disease Control and Prevention, 2000), vol. 12, no. 2, p. 20.

8. Centers for Disease Control and Prevention, *Tracking The Hidden Epidemics: Trends in STDs in the United States, 2000* (Atlanta, GA: Centers for Disease Control and Prevention, 2000), p. 2.

9. Centers for Disease Control and Prevention, *Tracking The Hidden Epidemics: Trends in STDs in the United States, 2000* (Atlanta, GA: Centers for Disease Control and Prevention, 2000), p. 6.

10. Centers for Disease Control and Prevention, *Tracking The Hidden Epidemics: Trends in STDs in the United States, 2000* (Atlanta, GA: Centers for Disease Control and Prevention, 2000), p. 2.

11. U. S. Department of Health and Human Services, *Sexually Transmitted Disease Surveillance, 1999* (Atlanta, GA: Centers for Disease Control and Prevention, September 2000), p. 7.

12. U. S. Department of Health and Human Services, *Sexually Transmitted Disease Surveillance,* 1999 (Atlanta, GA: Centers for Disease Control and Prevention, September 2000), p. 8.

13. U. S. Department of Health and Human Services, *Sexually Transmitted Disease Surveillance,* 1999 (Atlanta, GA: Centers for Disease Control and Prevention, September 2000), p. 8.

14. Centers for Disease Control and Prevention, *Tracking The Hidden Epidemics: Trends in STDs in the United States, 2000* (Atlanta, GA: Centers for Disease Control and Prevention, 2000), p. 6.

15. Centers for Disease Control and Prevention, *Tracking The Hidden Epidemics: Trends in STDs in the United States, 2000* (Atlanta, GA: Centers for Disease Control and Prevention, 2000), pp. 2, 9.

16. U. S. Department of Health and Human Services, *Sexually Transmitted Disease Surveillance, 1999* (Atlanta, GA: Centers for Disease Control and Prevention, September 2000), p. 15.

17. U. S. Department of Health and Human Services, *Sexually Transmitted Disease Surveillance, 1999* (Atlanta, GA: Centers for Disease Control and Prevention, September 2000), p. 16.

18. Centers for Disease Control and Prevention, *Tracking The Hidden Epidemics: Trends in STDs in the United States, 2000* (Atlanta, GA: Centers for Disease Control and Prevention, 2000), p. 9.

19. Centers for Disease Control and Prevention, *Tracking The Hidden Epidemics: Trends in STDs in the United States, 2000* (Atlanta, GA: Centers for Disease Control and Prevention, 2000), p. 3.

20. Centers for Disease Control and Prevention, *Tracking The Hidden Epidemics: Trends in STDs in the United States, 2000* (Atlanta, GA: Centers for Disease Control and Prevention, 2000), p. 2.

21. Centers for Disease Control and Prevention, *Tracking The Hidden Epidemics: Trends in STDs in the United States, 2000* (Atlanta, GA: Centers for Disease Control and Prevention, 2000), p. 14.

22. U. S. Department of Health and Human Services, *Sexually Transmitted Disease Surveillance, 1999* (Atlanta, GA: Centers for Disease Control and Prevention, September 2000), p. 26.

23. Centers for Disease Control and Prevention, *Tracking The Hidden Epidemics: Trends in STDs in the United States, 2000* (Atlanta, GA: Centers for Disease Control and Prevention, 2000), p. 14.

24. Centers for Disease Control and Prevention, *Tracking The Hidden Epidemics: Trends in STDs in the United States, 2000* (Atlanta, GA: Centers for Disease Control and Prevention, 2000), p. 2.

25. Centers for Disease Control and Prevention, *Tracking The Hidden Epidemics: Trends in STDs in the United States, 2000* (Atlanta, GA: Centers for Disease Control and Prevention, 2000), p. 18.

26. Ibid.

27. Centers for Disease Control and Prevention, *Tracking The Hidden Epidemics: Trends in STDs in the United States, 2000* (Atlanta, GA: Centers for Disease Control and Prevention, 2000), p. 2.

28. Centers for Disease Control and Prevention, *Tracking The Hidden Epidemics: Trends in STDs in the United States, 2000* (Atlanta, GA: Centers for Disease Control and Prevention, 2000), p. 22.

29. Centers for Disease Control and Prevention, *Tracking The Hidden Epidemics: Trends in STDs in the United States, 2000* (Atlanta, GA: Centers for Disease Control and Prevention, 2000), p. 2.

30. Centers for Disease Control and Prevention, *Tracking The Hidden Epidemics: Trends in STDs in the United States, 2000* (Atlanta, GA: Centers for Disease Control and Prevention, 2000), p. 2.

31. Centers for Disease Control and Prevention, *Tracking The Hidden Epidemics: Trends in STDs in the United States, 2000* (Atlanta, GA: Centers for Disease Control and Prevention, 2000), p. 2.

32. Centers for Disease Control and Prevention, *Tracking The Hidden Epidemics: Trends in STDs in the United States, 2000* (Atlanta, GA: Centers for Disease Control and Prevention, 2000), p. 4.

33. Centers for Disease Control and Prevention, *Tracking The Hidden Epidemics: Trends in STDs in the United States, 2000* (Atlanta, GA: Centers for Disease Control and Prevention, 2000), p. 18.

34. Centers for Disease Control and Prevention, *Tracking The Hidden Epidemics: Trends in STDs in the United States, 2000* (Atlanta, GA: Centers for Disease Control and Prevention, 2000), p. 3.

35. Centers for Disease Control and Prevention, *Tracking The Hidden Epidemics: Trends in STDs in the United States, 2000* (Atlanta, GA: Centers for Disease Control and Prevention, 2000), p. 19.

36. Centers for Disease Control and Prevention, *Tracking The Hidden Epidemics: Trends in STDs in the United States, 2000* (Atlanta, GA: Centers for Disease Control and Prevention, 2000), p. 20.

37. Centers for Disease Control and Prevention, *Tracking The Hidden Epidemics: Trends in STDs in the United States, 2000* (Atlanta, GA: Centers for Disease Control and Prevention, 2000), p. 20.

38. Centers for Disease Control and Prevention, *Tracking The Hidden Epidemics: Trends in STDs in the United States, 2000* (Atlanta, GA: Centers for Disease Control and Prevention, 2000), p. 3.

39. Centers for Disease Control and Prevention, *Tracking The Hidden Epidemics: Trends in STDs in the United States, 2000* (Atlanta, GA: Centers for Disease Control and Prevention, 2000), p. 4.

40. U. S. Department of Health and Human Services, *Sexually Transmitted Disease Surveillance, 1999* (Atlanta, GA: Centers for Disease Control and Prevention, September 2000), p. 59.

41. U. S. Department of Health and Human Services, *Sexually Transmitted Disease Surveillance, 1999* (Atlanta, GA: Centers for Disease Control and Prevention, September 2000), p. 65.

42. U. S. Department of Health and Human Services, *Sexually Transmitted Disease Surveillance, 1999* (Atlanta, GA: Centers for Disease Control and Prevention, September 2000), p. 51.

43. The Henry J. Kaiser Family Foundation and *Seventeen Magazine, Sexually Transmitted Disease: A Series of National Surveys of Teens About Sex* (Menlo Park, CA: The Henry J. Kaiser Family Foundation, 2001).

** *Critical Components of STD Prevention & Control* is a document published by the STD Prevention Partnership, a group of national organizations with shared concern about the continuing spread of STDs, including HIV, and with a mission to support and encourage partnerships among the private, voluntary, and public sectors in developing and implementing strategies to reduce the incidence and impact of STDs. Detailed references for *Critical Components of STD Prevention & Control* are available from the Division of STD Prevention of the U.S. Centers for Disease Control and Prevention.

SEXUALITY EDUCATORS TALK ABOUT THEIR CAREER PATHS

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Few young people consider becoming sexuality educators when they grow up. So, at a recent retreat, it was intriguing to hear a group talk about the paths that led them to this unique career: how they learned about sexuality education, how they obtained teaching and training skills, and how they stay motivated.

Their reflections spurred us to contact a number of sexuality educators and ask them these same three questions. Perhaps their answers will inspire others to become sexuality educators, too.

THE START

Some people knew from the time they entered college that they wanted to become sexuality educators—but they were a rarity. For most, the decision evolved by happenstance—being in the right place at the right time.

Robert Becker, associate vice president of education at Planned Parenthood of New York City, found and "inhaled" his sister's college human sexuality textbook when he was 12. Intrigued with the subject and the opportunity to "discuss issues that other people had trouble with," he later decided to take the same undergraduate college course, eventually abandoning his business major and working toward a degree in psychology.

Joe Fay, health educator at the York (PA) City Health Bureau, received a master's degree in psychology and subsequently enrolled in a federal job-training program, where he landed a job as sexuality educator for Planned Parenthood. He credits his career to the federal government.

Maureen Kelly, who has a bachelor's degree in history and women's studies, taught in pre-kindergarten for four years before she accepted the position as director of education at Planned Parenthood of Tompkins County, NY. Her work with three- and four-year-olds helped her see that sexuality was "in the broad brush" of everyday activities. One of her experiences involved her student, Jonathan, whose penis was often erect when he woke from a nap. Although her coteacher did not know how to respond, Kelly simply told Jonathan to put his penis away and come to snack time.

Bernice Humphrey, who has a master's degree in health administration, became the director of the Healthy Girls Initiative for Girls, Inc., after working on programs to reduce infant mortality and prevent teen pregnancy. During those early years, she learned that people could make healthy decisions for themselves only if they had the necessary knowledge and skills—a goal that is central to her work at Girls, Inc.

Konnie McCaffree, who is an adjunct associate professor at Widener University as well as a sexuality education consultant, started her career as a high school science and physical education teacher. She was quickly exposed to the issues the young women in her classes faced: relationships, feelings, pregnancy, abortion, rape, and related subjects. She realized, however, that she didn't have many of the answers they needed, so she enrolled in a human sexuality class at Trenton State College taught by Dr. Donald Brown. And that was the start of her career.

Monica Rodriguez, who has a bachelor's degree in psychology, is director of information and education at the Sexuality Information and Education Council of the United States (SIECUS). She started college with the intention of becoming a doctor. Soon realizing that this would involve too much laboratory time, she switched her major to psychology. The following semester she became a peer sexuality educator, training students to talk with others about birth control, STDs, alcohol, and sexuality. She instantly realized that she loved the work. From that point, there was no turning back.

Peggy Brick, who has a master's degree in education, went from being a high school teacher to a sexuality education consultant to the director of the Center for Family Life Education at Planned Parenthood of Greater Northern New Jersey. Early in her career, she volunteered to teach a psychology and sociology course with a visiting sexuality educator. As years passed, she expanded the course and her career. Today she is a respected author and trainer.

THE AUTHORS' OWN CAREER STORIES

The authors of this article have their own personal stories to tell about what led them to their current positions: working on two of the most successful sexual health Web sites in the nation—*Go Ask Alice!* and *SEX, ETC.*

Judith Steinhart is the senior health educator for *Alice!,* Columbia University's Health Education Program in New York City. *Go Ask Alice!* is one of the world's first health question-and-answer Internet sites.

Danene Sorace is the program manager for the Network for Family Life Education at Rutgers University in New Brunswick, NJ, which produces the national Web site for youth called *SEX, ETC.*

JUDITH STEINHART

Steinhart, who has been a sexuality educator for over 20 years, was a student teacher in Albany, NY, when a ninth grade boy approached her after class and asked if she knew where he could buy "rubbers" (and not the kind you put on your feet). At that time, it was illegal for anyone under 21 to buy condoms in New York State. He said that this weekend was his church retreat. Because she respected his desire to be prepared and responsible, she referred him to the only resource she knew—the local Planned Parenthood. They took good care of him even though they routinely offered services only to women.

While continuing to teach, Steinhart volunteered at a nearby Planned Parenthood and enrolled in a graduate course in human sexuality at the State University of New York at Stony Brook. This determined her career path.

When she moved to San Francisco, Robert Hawkins, associate dean of Stony Brook's Allied Health Program, encouraged her to seek additional education. She started by working as an intern at the National Sex Forum (NSF). She also volunteered with the San Francisco Sex Information (SFSI) hotline.

When the NSF formed a graduate school to train professionals in human sexuality, Steinhart was there. In fact, she was a member of their first graduating class. Her first goal after graduating was to become certified by the American Association of Sex Educators, Counselors, and Therapists (AASECT).

When she returned to New York City, she met SIECUS Board Chair Michael Carrera, who subsequently helped her in her successful quest to fill the vacancy created by Dr. Ruth Westheimer when she left her position at Brooklyn College. This solidified her career.

At Columbia, Steinhart helps students by making presentations on sexuality topics in their residence halls, at their student group meetings, or at fraternities and sororities. She also provides related training for dormitory residential assistants and coordinates *Safer Sex Plus!,* a week of campus events related to safer sexuality, relationships, and communication coinciding with Valentine's Day and National Condom Week.

Her *Go Ask Alice!* work involves reading questions from young people and adults in over 65 countries. In response, she edits, critiques, and updates answers with the *Alice!* team of health professionals.

DANENE SORACE

Danene Sorace has been a sexuality educator for five years. She attributes her start to Dr. Karen Hicks, her undergraduate human sexuality professor, who introduced her to Dr. Elizabeth Casparian and Dr. Eva Goldfarb, colleagues of Hicks's at the University of Pennsylvania.

Oddly enough, Sorace started her career by responding to a "help wanted" advertisement for a teen program coordinator with only a Post Office box number attached to it. Luckily, through that ad she landed a job with a regional family planning provider in Pennsylvania. From that point, she knew she was hooked on helping teens learn more about sexuality and sexual health.

Through her work coordinating conferences, state and local teen pregnancy prevention coalitions, and various research projects, Sorace met many people who helped to shape her career. She counts among them Pam Wilson, Joe Fay, Carol Flaherty-Zonis, Olivia Susskind, Peggy Brick, and Susan Wilson.

Before moving to New Jersey, Sorace called Susan Wilson for assistance with her job search. That phone call turned into a job at the Network for Family Life Education, where she manages the day-to-day operations of the National Teen-to-Teen Sexuality Education Project, which includes the *SEX, ETC.* Web site.

Sorace recently received her master's degree in public policy after learning early on that politics are key to ensuring information and access to health care and to ensuring that sexuality education will continue to grow and flourish.

—Mac Edwards

Susan Wilson, who has a master's of science in education, is executive coordinator for the Network for Family Life Education, where she launched the nationally recognized *SEX, ETC.* newsletter written by teens, for teens. Prior to working in the field of sexual health, she was a member of the New Jersey Board of Education. At one meeting, the state's Commissioner of Health asked the Board what it was doing about sexuality education. Wilson was the only member to speak up and ask questions. As a result, the Board President named her to chair a new Subcommittee on Sexuality Education. The next morning, Wilson began her own sexuality education by reading the Time-Life archives to learn everything she could about the subject, thus altering her life forever.

Even Baptist ministers are not immune. ***Bill Stayton,*** sexuality educator, sex therapist, and ordained Baptist minister, was asked by his youth group to offer some sessions on sexuality education. The news spread, and 650 young people attended the first session. It was not long before Stayton was invited to facilitate similar sessions in other communities and churches. He still loves and is challenged by the work.

THE SKILLS

After graduating from college and deciding to enter the field of sexuality education, these professionals built their careers through other formal training, such as related undergraduate and graduate courses, and less traditional training, such as retreats and workshops. Through their teachers and mentors, they learned about sexuality-related issues, teaching strategies, and themselves—their values and their beliefs about sexuality.

Joe Fay benefited primarily from mentors—generous trailblazers in the field of sexuality education, like Peggy Brick; Pam Wilson, a sexuality consultant; Deborah Roffman, author and educator at the Park School in Baltimore, MD; the late Mary Steichen Calderone, SIECUS founder; and Sol Gordon, author and educator. With their help, he prospered as an innovative sexuality educator and trainer. Among his most recent successes is a popular workshop about love.

Maureen Kelly remembers a particular professional education program that improved her skills and clarified her focus. She participated in a European Study Tour sponsored by Advocates for Youth and the University of North Carolina at Charlotte, where she studied and observed adolescent sexuality education programs in The Netherlands, France, and Germany. Upon her return home, she revived a community-based Campaign for Sexual Literacy. As a result, families, school boards, and faith-based organizations in the county where she works in Upstate New York are developing a media campaign to help parents and their children learn to talk about sexuality.

After assuming her position at Girls, Inc., ***Bernice Humphrey*** helped develop HIV-prevention and comprehensive sexuality education training, technical assistance, and resources in local communities. This involved retaining Pam Wilson to conduct a train-the-trainer session on HIV prevention. "Working with Pam—watching and listening—I knew that I needed to pay attention to this kind of person. She was always 'on,'" she explained. "Along the way, I learned from her."

Konnie McCaffree learned about the health education program at New York University from Don Brown, her professor at Trenton State. As part of her doctoral studies at the university, she lived abroad for six summers, learning about sexuality education in Sweden, Denmark, Kenya, Japan, and Thailand. Her peers—including Jean Levitan, Pat Koch, Bob Hawkins, and Jim Achtzehn—were also mentors who helped her learn new teaching techniques when she felt her own work was getting too routine.

As ***Monica Rodriguez*** continued her work as a peer educator at Penn State, she met professionals in the field of sexuality education at conferences. At one meeting of the Society for the Scientific Study of Sexuality (SSSS), she met Peggy Brick and decided on the spot she wanted to work with her at Planned Parenthood. When Rodriguez graduated, Brick offered her a job. Several years later, Brick helped her secure her position at SIECUS, where she managed a program working with education and health care professionals on HIV/AIDS initiatives and sexuality education. Those who have influenced her career include Carolyn Patierno, former SIECUS director of program services; Bobbie Whitney and Debra Haffner, former SIECUS presidents; Pat Koch, a professor at Penn State; Michael Carrera, director of the National Adolescent Sexuality Training Center; Pam Wilson; and Wayne Pawlowski, director of training for Planned Parenthood Federation of America.

As ***Bill Stayton's*** name became synonymous with sexuality education, Pat Schiller, the founder of the American Association of Sexuality Educators, Counselors, and Therapists (AASECT), urged him to do more. After obtaining his doctorate, Stayton received a postdoctoral fellowship at the University of Pennsylvania. It was here that he became director of the university's Family Life and Sex Education Program, where he has trained thousands of people. He is now involved in a similar program at Widener University in nearby Chester, PA.

THE ENERGY

Sexuality educators are known for their energy. And, on the whole, they say they build their enthusiasm from their successes—and that usually means helping people grow by sharing knowledge.

While at the University of Pennsylvania, ***Bill Stayton*** worked to refine the Sexual Attitude Reassessment (SAR). The workshop's purpose is to help people clarify their attitudes, knowledge, behavior, and self-concept regarding sexuality.

Facilitating SARs continues to be one of his favorite projects.

Both ***Bernice Humphrey's*** and ***Susan Wilson's*** work continues to focus on adolescents. Humphrey regularly draws on the energy and viewpoints of teens through the 90-plus nationwide affiliates of Girls Inc. Wilson keeps fresh through her daily work with the *SEX, ETC.* Editorial Board—17 high school students who drive the content for the newsletter and Web site. "Doing what's right for teens—giving them the knowledge and skills to make responsible decisions—and not telling them what's right, requires persistence." Having run the New York City marathon (at age 67) and having worked in this field for 20 years, she knows the success of her work is about putting one foot in front of the other. "It has been a long race, but in the end, it is the youth that spur me on," she said.

Although ***Joe Fay's*** work involves interacting with a lot of adults, he, too, maintains much of his enthusiasm through his work with teens. "When I'm interacting with them, I am reminded why my work is so necessary," he said.

Konnie McCaffree has mentored student teachers since her early days teaching science. She has also conducted teacher training programs in sexuality education since she first joined AASECT. She continued this work in the Human Sexuality Education Program at the University of Pennsylvania, and now works in a similar capacity at Widener University in Chester, PA. "It is exciting for me to be able to mentor young people in the field of sexuality education," she said. "And it is exciting to now have many of my students as colleagues. I continue to be inspired by them."

Monica Rodriguez loves working with people and, thus far, has been able to combine her many administrative duties at SIECUS with teaching and training. Acknowledging that she needs to take on more office responsibilities if she wants to take the helm of an organization, she recently enrolled in the New School in New York City, where she will work toward her master's degree in nonprofit management. "But I will never stop working one-on-one with people," she said.

THE FUTURE

People become sexuality educators for many reasons. But they all care about the students, children, parents, adults, and professionals with whom they work. They also care deeply about the messages they are communicating about sexual health and sexual relationships. Their goal is to help people become sexually healthy adults.

To the sexuality educators in this article and the many more that are not included, we acknowledge your work, your conviction, your courage, and your enthusiasm. We need you to continue to build on the uniqueness of the profession that you have chosen and to nurture those who are entering the field—through whatever path.

AASECT OFFERS CERTIFICATION TO SEXUALITY EDUCATORS

The American Association of Sex Educators, Counselors, and Therapists (AASECT) has more than 300 certified sexuality educators in the United States and Canada. The certification program is often lauded as an ideal way for these individuals to meet professional requirements, maintain their skills, or keep updated.

"I see AASECT certification as a way to help sexuality educators become more adept at their work," explains Konnie McCaffree, chair of the AASECT Certification Committee and a sexuality educator herself. "I see it as a way to ensure 'quality control' in our field. Unless we create ways to help people increase their skills, comfort, and knowledge, we will not have sufficient qualified people."

"Sexuality educators are not generally considered part of a single discipline," she continues. "Rather, they often work in a variety of fields with a variety of populations."

By becoming certified, sexuality educators will:

- validate their experience and education
- increase their credibility as professionals by showing that they have met high standards and criteria
- acknowledge the valuable contribution of sexuality educators
- provide avenues for networking with others with similar interests, both locally and nationally

Sexuality educators interested in the AASECT certification program should call AASECT at 804/644-3288, write to AASECT, P.O. Box 5488, Richmond, VA 23220-0488, or check AASECT's Web site at aasect.org

WHERE SEXUALITY EDUCATORS STRENGTHEN THEIR SKILLS

Sexuality educators take advantage of multiple avenues to strengthen their teaching skills and to keep updated. This list includes some of the sources they use.

ACADEMIC PROGRAMS

California State University, College of Social and Behavioral Sciences, Northridge, CA
Web site: www.csun.edu Phone: 818/677-4830

Columbia University, School of Public Health, New York, NY
Web site: www.columbia.edu Phone: 212/305-1535

Indiana University/Kinsey Institute for Research in Sex, Gender, and Reproduction, Bloomington, IN
Web Site: www.indiana.edu Phone: 812/855-7974

The Institute for Advanced Study of Human Sexuality, Bloomington, IN
Web site: www.iashs.edu Phone: 812/855-7974

Johns Hopkins University, School of Medicine, Baltimore, MD
Web site: www.hopkinsmedicine.org

New York University, Department of Health Studies, New York, NY
Web site: www.nyu.edu Phone: 212/995-5780

San Francisco State University, Program in Human Sexuality Studies, San Francisco, CA
Web site: www.sfsu.edu Phone: 415/405-3570

University of Guelph, Department of Family Relations and Applied Nutrition, Guelph, Canada
Web site: www.uoguelph@uoguelph.ca
Phone: 519/824-4120, extension 3582

University of Minnesota, Medical School, Minneapolis, MN
Web site: www.med.umn.edu Phone: 612/625-1500

Widener University, Center for Education, Human Sexuality Education Program, Chester, PA
Web site: www.widener.edu Phone: 610/971-0700

PROFESSIONAL TRAINING

Advocates for Youth
Web site: www.advocatesforyouth.org
Phone: 202/347-5700

American Association of Sex Educators, Counselors and Therapists (AASECT)
Web site: www.aasect.org Phone: 804/644-3288

Association for Reproductive Health Professionals
Web site: www.arhp.org Phone: 202/466-3825

Association for Sexuality Education and Training (ASET)
Phone: 206/675-2439

Great Lakes Institute for Community Health Educators
Phone: 317/247-9008

National Family Planning and Reproductive Health Association
Web site: www.nfprha.org Phone: 202/628-3535

National Organization on Adolescent Pregnancy, Prevention and Parenting
Web site: www.noappp.org Phone: 301/913-0378

Network for Family Life Education
Web site: www.sxetc.org Phone: 732/445-7929

North Atlantic Training Institute for Sexual Health Educators (NATISHE)
Phone: 212/629-3321

Northwest Institute for Community Health Educators (NICHE)
Phone: 206/447-9538

Planned Parenthood Federation of America
Web site: www.ppfa.org Phone: 212/541-7800

Sexuality Information and Education Council of the United States (SIECUS)
Web site: www.siecus.org Phone: 212/819-9770

Society for the Scientific Study of Sexuality (SSSS)
Web site: www.sexscience.org Phone: 610/530-2483

Southwest Institute for Community Health Educators
Phone: 512/474-2166

Thornfield Workshop on Sexuality
Web site: www.sexualityworkshops.com
Phone: 703/532-3702

Western Region Institute for Community Health Educators
Phone: 415/929-9100

Mission

SIECUS affirms that sexuality is a natural and healthy part of living. SIECUS develops, collects, and disseminates information; promotes comprehensive education about sexuality; and advocates the right of individuals to make responsible sexual choices.

SIECUS sexuality information and education council of the united states

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