Introduction

After falling to historic lows in the early 2000s, rates of sexually transmitted diseases (STDs) are soaring to record levels. Nearly 2.3 million cases of chlamydia, gonorrhea and syphilis were reported to the U.S. Centers for Disease Control and Prevention in 2017. Experts attribute the rise to a variety of causes, including cuts in federal funding for prevention programs, a drop in condom use and the popularity of dating apps, which some health officials believe has led to an increase in unprotected sex. STD rates are highest among young people and men who have sex with other men. In addition, rates among blacks and Hispanics are higher than among whites and can reflect disparities in income, education status and access to health care. Meanwhile, researchers are seeking ways to make STD testing faster and easier. And some doctors are prescribing medicine for the sexual partners of infected patients sight unseen.

Overview

The billboards on Los Angeles streets urging people to get tested for sexually transmitted diseases (STDs) were simple but stark: "Syphilis is Serious," "Gonorrhea Alert!"

In a classroom at James Monroe High School in North Hills, Calif., meanwhile, health education teacher Leticia Jenkins stood before a group of ninth-graders and delivered a lesson on the dangers of STDs. Behind her was a whiteboard warning about unprotected sex and the need for partners to communicate openly and honestly.
Staff members meet at the India Street Public Health Center, a free STD clinic in Portland, Maine, on Feb. 1, 2018. Clinics such as India Street are trying to stem a surge of STD cases through education campaigns, condom distribution and other strategies. (Getty Images/Portland Press Herald/Derek Davis)

These efforts last year were part of a broad health campaign in California to educate the public about STDs in a state where cases of chlamydia, gonorrhea and syphilis rose 45 percent between 2012 and 2017.  

“Let’s stop kidding ourselves, this [STD crisis] is real,” Jenkins told CNN. “I’m not just teaching the act of sex. I’m teaching students how to take care of themselves. We’re talking intimacy and respect and relationships.”

Public health officials across the nation share California’s alarm about STDs.

In 2017, local and state health departments reported a record number of nearly 2.3 million cases of chlamydia, gonorrhea and syphilis to the U.S. Centers for Disease Control and Prevention (CDC). Chlamydia cases alone rose more than 140 percent between 2000 and 2017.
Sexually Transmitted Diseases: CQR

The rate of sexually transmitted diseases per 100,000 people also has taken an ominous turn. After a concerted public health campaign beginning in the 1970s, rates of reported cases of syphilis and gonorrhea dropped to historic lows by 2000 and 2009, respectively. Since then, those rates have been climbing, most steeply since 2013.

"After decades of declining STDs, in recent years we've been sliding backwards," said Dr. Gail Bolan, director of the CDC's Division of STD Prevention. "It is a critical time for STD prevention. We face challenges on many fronts, from skyrocketing STDs to the threat of antibiotic resistance. We need bold ideas."

The stakes are high. Some sexually transmitted diseases, if left untreated, can lead to significant health effects, including cancer, infertility, stillbirth and increased risk of contracting HIV, the virus that can lead to AIDS. Diagnosing and treating STDs, including HIV, and the long-term health effects of these diseases cost the nation's health care system nearly $16 billion a year, according to a 2013 estimate by researchers.

Source: "Table 1. Sexually Transmitted Diseases — Reported Cases and Rates of Reported Cases per 100,000 Population, United States, 1941-2017," U.S. Centers for Disease Control and Prevention, last reviewed July 24, 2018, https://tinyurl.com/y3baytrc

Long Description

STD Cases Are Soaring

Reported U.S. syphilis cases more than quintupled between 2000 and 2017, according to the latest federal data. Chlamydia cases rose more than 140 percent, and gonorrhea cases were up 53 percent.

Reported Sexually Transmitted Disease Cases in the U.S., 2000-17

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Experts cite a range of factors behind the surge in STD cases, including a significant drop in federal funding for STD prevention and a reduction in condom use. Yet they disagree about what is driving that riskier sexual behavior. Some say abstinence-only sex education shares some of the blame because it de-emphasizes condom use, while others point to a lessening of the fear of HIV as prevention and treatment have improved.

Concerns also are growing that some STDs, such as gonorrhea, could become resistant to all current treatments.

There are more than a dozen sexually transmitted diseases, from pubic lice to the human papillomavirus virus (HPV), a common STD that can lead to cancer. The CDC classified a new STD in 2015: Mycoplasma genitalium, or Mgen, which is estimated to infect up to 3 percent of the general population, more than gonorrhea, and possibly 15 percent of high-risk groups, such as young people with multiple sex partners.7

Prevention Funding on the Decline

U.S. Centers for Disease Control and Prevention spending on programs to prevent sexually transmitted diseases (STDs) fell during the past two decades, from a peak of $232 million in 2002 to $157 million in 2018, a drop of 32 percent.

CDC’s Annual STD Prevention Budget (in millions), Adjusted for Inflation, 2000-18

* Figures from 2012-18 include administrative costs.
Source: Matthew Prior, communications director, National Coalition of STD Directors, February 2019
Sexually Transmitted Diseases: CQR

But the CDC's data do not capture the extent of the STD crisis in the United States, say infectious disease experts. Many people with STDs show no symptoms and never get diagnosed. As a result, they unknowingly harbor infections that eventually can sicken them and that they can pass on to others.

“There is so much that is underreported, there is so much that we don’t know,” says Cynthia Heckmann, a fellow at the National Academy of Public Administration in Washington, a congressionally chartered organization that provides expert advice to government leaders. Heckmann supervised a recent study of the impact of sexually transmitted diseases on the United States.

Nevertheless, the reported data do reveal who is most affected. Young people ages 15-24 represent half of all new STD cases, and men who have sex with other men account for 68 percent of reported syphilis cases.

The rate of reported gonorrhea cases among blacks is eight times the rate among whites, while the rate among Hispanics is nearly twice that of whites. And several Southern states, along with Alaska, have the highest STD rates in the country.

Social and economic disparities play an important role in the higher rates among minorities and in certain regions, says David Harvey, executive director of the National Coalition of STD Directors, a membership organization in Washington. “Less economic resources, less access to quality health care and poverty are all major factors that drive public health emergencies like STDs,” he says.

Experts offer different theories as to why the situation is worsening each year. (HIV is bucking the trend: As treatment and prevention have improved, the number of new HIV infections has been falling.)

A frequently cited factor in rising STD rates is the declining use of condoms, which, when used properly, can prevent the spread of STDs. A recent analysis of the CDC’s 2017 Youth Risk Behavior Survey shows a gradual decline in condom use, from 59 percent of sexually active high school students in 2013 to 54 percent in 2017. Condom use among gay and bisexual men also is waning, perhaps because improved treatment and prevention have lessened the fear of contracting HIV, say some researchers, although that thesis is controversial. Also controversial is the belief that dating apps and social media are encouraging anonymous, high-risk sex.

Adults over age 60 “who are re-entering relationships are also having unprotected sex because they think they are safe [from disease],” says Dr. Georges Benjamin, executive director of the American Public Health Association, a professional organization in Washington for public health professionals. But they are mistaken, he says. In these older adults, diagnosis rates for a variety of STDs are rising faster than for the general population. Nevertheless, the rates for seniors remain low.

Many public health officials blame the resurgence in STDs on a sharp decline in government funding for STD prevention: The CDC's spending on prevention programs, which help fund local

A billboard in Hollywood, Calif., warns passersby in May 2018 about a resurgence of gonorrhea. Many public health officials say a sharp decline in government funding for STD prevention has helped fuel an increase in STDs nationwide. (AFP/Getty Images/Frederic J. Brown)
and state programs, fell 32 percent — from $232 million to $157 million — between 2002 and 2018, adjusted for inflation. “We’ve had dramatic cutbacks in federal STD funding,” Harvey says.

Local and state public health departments rely heavily on federal dollars; for every $1 of federal money spent on STD programs, cities and states contribute 43 cents. But state funding also has declined, starting with the 2007-09 financial crisis. In a 2014 survey, 61 percent of local health departments reported budget cuts that led to shorter STD clinic hours and to reductions in routine screening and sexual-partner services designed to alert people that they may be at risk for an STD.

“We think there’s a direct correlation between reduced public health funding for STDs and our ability to control these epidemics,” says Harvey.

But some experts say part of the increase in STDs could simply reflect increased screening and better reporting, even in the face of shrinking budgets.

“We don’t have a report of every chlamydia or gonorrhea test that was performed. We only have reports of the positive tests,” says Felicia M.T. Lewis, a CDC physician who works at the Philadelphia Department of Public Health. Not knowing the total number of diagnostic tests each year, she says, makes it impossible to say with certainty what is driving an increase in STDs over time — a real increase in incidence, more testing and reporting, or some combination of the two.

Nevertheless, the CDC’s latest surveillance report attributed an 11 percent increase in female chlamydia cases over the past four years “to increased screening and more complete national reporting.”

Benjamin says the STD crisis, at least for other sexually transmitted diseases, is very real. “I’ve been in this business a long time. This is not because of improved reporting,” he says.

The Trump administration has said the government must act. “More than 2 million STDs in a year is unprecedented and unacceptable,” Adm. Brett P. Giroir, assistant secretary for health at the Department of Health and Human Services (HHS), says in an email. Giroir is heading a new federal effort to combat STDs. “We need to act now to come up with a plan to reverse this alarming trend.”

As public health officials, doctors and others debate the severity of the STD crisis and its causes, here are some of the questions they are asking:

Can primary care physicians do more to screen for sexually transmitted diseases?

Primary care physicians and their staffs are often the first line of defense against the spread of sexually transmitted diseases. But some studies show that these health care providers are not doing enough when it comes to talking to patients about their sexual behavior and screening for STDs.

“Providers and primary care providers play a crucial role in combating these rising STD rates,” Dr. Laura Bachmann, chief medical officer in the CDC’s Division of STD Prevention, says in an email. “If providers don’t ask the questions and don’t apply the screening recommendations, the majority of STDs will be missed.” That’s because many STDs show no symptoms, especially in women.

The CDC recommends screening all sexually active women ages 25 years or younger for chlamydia and gonorrhea, as well as older women with risk factors such as new or multiple sex partners or a partner who has an STD. The agency does not recommend routine testing for men. Currently, there is insufficient research to know whether screening men would be worthwhile, according to the U.S. Preventive Services Task Force, an independent panel of experts. The exception is sexually active men who have sex with men; the CDC says they should be tested for chlamydia.

For syphilis, the CDC recommends routine screening for men who have sex with men, individuals living with HIV and pregnant women, who, if undiagnosed, can pass syphilis to their babies. There were 918 reported cases of congenital syphilis in 2017, more than double the number in 2013.

“The negative outcomes for babies are enormous,” says Harvey of the National Coalition of STD Directors. “Forty percent are stillborn; others are then born with disabilities.”

Public health officials say there are many reasons why too few primary care physicians screen for and treat STDs. Some may be embarrassed. In one recent survey, a quarter of primary care physicians agreed with the statement, “I am very uncomfortable discussing STD risk with my female patients.” They probably should not rely on patients to raise the subject, a separate survey found. Half of women between ages 15 and 24 said they do not want to discuss sex or STDs during doctor visits.
A Glossary of STDs

States must report the number of new diagnoses of these seven sexually transmitted diseases to the U.S. Centers for Disease Control and Prevention.

<table>
<thead>
<tr>
<th>STD</th>
<th>Causes</th>
<th>Symptoms</th>
<th>Detection</th>
<th>Treatment</th>
<th>Possible complications/outlook</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHANCROID</td>
<td>The haemophilus ducreyi bacterium.</td>
<td>Small bump appears on the genitals one day to two weeks after infection; it then becomes an ulcer.</td>
<td>Through symptoms and by ruling out other STDs.</td>
<td>Antibiotics.</td>
<td>Scarring at ulcer sites.</td>
</tr>
<tr>
<td>CHLAMYDIA</td>
<td>The chlamydia trachomatis bacterium.</td>
<td>Often none. Can include painful urination, discharge and lower abdominal pain. Intercourse may be painful for women.</td>
<td>Through urine sample or swab of cervix in women or urethra in men.</td>
<td>Antibiotics.</td>
<td></td>
</tr>
<tr>
<td>GONORRHEA</td>
<td>The neisseria gonorrhoea bacterium, which spreads through contact with the mouth, throat, eyes, urethra, vagina, penis or anus.</td>
<td>Often none. Can appear two to five days after infection, sometimes up to a month in men. Painful urination, discharge, tender testicles in man and painful sexual intercourse and severe abdominal pain in women. Sore throat and sensitive eyes if infected in those areas.</td>
<td>Through a urine sample or swab of infected area.</td>
<td>Combination of two antibiotics.</td>
<td></td>
</tr>
<tr>
<td>HEPATITIS B AND C</td>
<td>Viruses that cause inflammation of the liver. Passed from person to person through blood, semen or other body fluids.</td>
<td>Hepatitis B: Appetite loss, fatigue, fever, muscle and joint aches, nausea and vomiting, yellow skin and dark urine. Hepatitis C: Often none; at times presents fulminant symptoms.</td>
<td>Blood tests.</td>
<td>Acute hepatitis B lasts under six months and might resolve on its own, or can be treated with anti-viral medication. Chronic hepatitis B lasts longer than six months and requires anti-viral medication. Hepatitis C is usually curable with oral anti-viral medications taken daily for two to six months.</td>
<td>Chronic hepatitis B and undetected hepatitis C can lead to liver scarring, liver cancer and liver failure. In those cases, a liver transplant may be recommended.</td>
</tr>
<tr>
<td>HIV</td>
<td>A virus spread mainly through unprotected sex or needle sharing that attacks and weakens the immune system.</td>
<td>Initially resembles those of flu or other viral illnesses and lasts weeks or months. Infection then enters a nonsymptomatic stage that can last up to 10 years. Without treatment, usually progresses to AIDS.</td>
<td>Blood tests or oral swab tests, followed by a confirmatory test. FDA-approved home tests available.</td>
<td>Anti-retroviral drugs. A preventive drug regimen is available for people at high risk of contracting HIV.</td>
<td>Current treatments do not cure HIV, but with treatment most people with HIV/AIDS can live a healthy and normal life.</td>
</tr>
<tr>
<td>SYPHILIS</td>
<td>The bacterium treponema pallidum, spread though broken skin or mucous membranes, usually of the genitals.</td>
<td>A small, painless open sore on the genitals, mouth, skin or rectum that heal in three to six weeks. Symptoms of secondary syphilis, starting four to eight weeks later, include swollen lymph nodes, fever, skin rash, sores, hair loss, appetite loss, muscle and joint pain, vision changes.</td>
<td>Blood test, swab of infected area and, if nervous system problems are present, a spinal tap.</td>
<td>Antibiotics, with follow-up tests at three-, six-, 12- and 24-month intervals.</td>
<td>Curable if diagnosed early. Without treatment, one-third will develop late syphilis, which can be permanently disabling or fatal.</td>
</tr>
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</table>

For others, STDs may be a low priority. Unlike physicians at specialized STD clinics run by local public health departments, some primary care doctors may not see STDs in their patients very frequently and may be unaware of the screening guidelines, say experts. Besides, they have many other conditions to check.

"Primary care doctors deal with a lot of things — [lung diseases], hypertension, cardiovascular disease, obesity, alcohol. You name it," says Cornelis "Kees" Rietmeijer, a professor of community and behavioral health at the Colorado School of Public Health and a physician in the Denver public health department. "I would bet that for most primary care doctors, STDs are not high on the list."

A study of recorded conversations between pediatricians and teenagers found that one-third contained no sexual content. In the other two-thirds, the average time spent talking about sexuality was only 36 seconds. Multiple other studies describe "missed opportunities" for physicians to discuss sexual behavior and screen for STDs.

Rietmeijer says it should not take much time for physicians to add a few questions about sexual health to a medical exam, especially for young women. "It's just a quick question: 'Are you sexually active? Yes? OK, let's give you this test,'" he says.

For other patients, doctors should also be asking, "Do you have sex with men, women or both? How many partners have you had in the last month, six months, in a lifetime?" says Ada Stewart, a family physician and HIV specialist in Columbia, S.C. "I can't speak for every family physician," she says. "Some individuals may be uncomfortable asking those questions, but I think it is a select few." A family physician is a primary care doctor who sees both children and adults and often treats the whole family.

One way to make such physician-patient conversations more automatic, says Stewart, is to put questions about sexual history on the paper intake form that patients often fill out after arriving at the reception desk. In addition, the electronic health record that doctors fill out during an exam usually has a section about sexual health. However, those questions might be minimal and often are optional.

Harvey says systemic change is needed. Congress needs to appropriate more funding for education campaigns and public service announcements aimed at patients, he says. Medical schools need to spend more time teaching students about STDs, and professional medical societies need to increase the amount of professional development they offer their physician members on sexual health, he adds.

Stewart says the American Academy of Family Physicians — where she is on the board of directors — has an excellent record in this regard. "We offer a lot of [continuing medical education courses]. We have presentations at various local, state and national meetings on STDs and on testing and screening and what the recommendations are," she says.

However, Harvey says, "All medical associations need to step up and do more."

Has successful HIV prevention led to riskier sex and a rise in STDs among men who have sex with men?

HIV rates are stabilizing, but rates of other STDs are soaring, particularly among gay, bisexual and other men who have sex with men. Some in the public health field are partly blaming a blue pill called Truvada.

Commonly referred to as PrEP, for pre-exposure prophylaxis, the drug was approved in 2012 for HIV-negative people at risk of getting HIV. In patients who stick to the daily dose and check in regularly with their doctor, the risk of acquiring HIV is "approaching zero," says Philip Chan, an associate professor of medicine at Brown University in Rhode Island.

Only a small fraction of eligible people are receiving the drug so far. Nevertheless, Gilead Sciences, its manufacturer, says it is helping drive down HIV diagnoses. In an analysis conducted with academic and government researchers, the company found a nearly 5 percent decline in HIV diagnoses in the 10 states with the highest rate of Truvada use, while diagnoses increased slightly in states where use was lowest.

As the fear of HIV lessens, some men on the drug are using condoms less frequently, raising their risk of acquiring and transmitting STDs other than HIV, according to Chan. At the same time, he says he has patients who report more, not less, condom use after going on PrEP. "They'll say, 'Taking PrEP has really helped me become more aware about my health in general,'" says Chan.

One review of the scientific literature found men who have sex with men and use PrEP had a much higher STD rate than those who do not take PrEP. But there are flaws in such comparisons, says Gretchen Weiss, director of HIV, sexually transmitted infections (STI) and viral hepatitis at the National Association of County and City Health Officials, a membership organization that advocates on behalf of local health departments. PrEP is for people at high risk of acquiring HIV — either because they have an ongoing relationship with an HIV-positive partner or had condomless sex with multiple partners. Men in the latter group are at high risk of acquiring other STDs before they begin the drug regimen, Weiss says.

Other research has looked at people before and after going on PrEP. "Most studies showed evidence of an increase in condomless sex among PrEP users" and an increase in STD diagnoses, found one meta-analysis of the research.
But there could be other explanations besides an increase in unprotected sex, say several experts and advocates for people with HIV. PrEP is not just a drug regimen, they note. The CDC recommends that people taking PrEP visit their doctor every three months for HIV and STD testing. “It could be that STDs are showing up more frequently due to increased testing,” says Anne Donnelly, senior director of strategy and policy at Project Inform, a San Francisco advocacy group for people with HIV.

In addition, says Chan, “STDs were markedly on the rise before PrEP even was approved.”

But Michael Weinstein, one of the earliest and fiercest critics of PrEP, isn’t buying those explanations. Weinstein is president of the AIDS Healthcare Foundation, a global provider of HIV/AIDS medical care in Los Angeles.

By reducing the fear of contracting HIV, PrEP encourages condom-less sex and raises the risk of STD infection, says Weinstein, who adds that condom use is being de-emphasized in other ways. For example, the federal government and public health agencies, enamored with PrEP, are no longer promoting condoms to the degree they used to, he says.

“Many men advertise on Grindr [a mobile dating app geared toward gay and bisexual men] and other apps that they are on PrEP who are not — it is code for unprotected sex,” says Weinstein. And in gay porn, “we’ve gone … from maybe 20 percent of it being without condoms to almost 100 percent of it being without condoms.”

Weinstein says he would like to see physicians prescribe PrEP only for HIV-negative people who clearly will not use condoms and who have had multiple STDs. Gilead did not respond to an email request for comment.

But Harvey of the National Coalition of STD Directors says PrEP needs to be given a chance. “There’s no doubt that there’s been behavior change among people who are on PrEP,” he says. But the frequent screening of men on the drug means that health professionals are flagging and treating STDs, and eventually STD rates among gay and bisexual men will decline, he says.

A mathematical model of PrEP use, put together by academics and CDC researchers, supports that view.

It predicted an 83 percent reduction over 10 years in STD diagnoses among men who have sex with men. That finding was based on three assumptions: that 40 percent of all eligible men at risk for HIV received PrEP; that PrEP users were screened for STDs every three months; and that men on PrEP used condoms less frequently after going on the drug.

More frequent screening is crucial, says Samuel Jenness, an epidemiologist at Emory University who helped create the model. “The PrEP program is a mechanism by which to screen and treat mostly asymptomatic [STD] cases that would have gone undetected had these men not been screened in this way,” he says.

But Weinstein says the model is a poor imitation of life, and that too many men on PrEP do not get the recommended STD screening. “If you give me documentary evidence that 90 percent of people on PrEP are getting routine screenings, then I would give some validity to their arguments,” he says. “But I haven’t seen that evidence.”

The CDC changed the STD screening recommendation from every six months to every three months only last year, and there hasn’t been enough time for researchers to produce the kind of evidence Weinstein wants, says a CDC spokesman.

Has the growing use of dating apps contributed to the rise in STDs?

Some public health officials see increasingly popular mobile dating apps and other social media as enablers of high-risk, anonymous sex and a factor in the STD crisis.

“We do not know how much social media has contributed to the rise in STDs, but we believe it is a contributing factor,” the Rhode Island Department of Health said in 2015 after reporting a 10-year high in STD rates.
Health experts are divided on whether dating apps and other forms of social media are driving up STD rates by making it easier for people to have multiple sexual liaisons. (Getty Images/Bloomberg/Andrew Harrer)

Last May, Dr. James Watt, chief of the division of communicable disease control for California’s health department, said dating apps and other social media played a significant role in the state’s 45 percent surge in STDs over five years. “The internet allows for a broadening of sexual networks, and the broader that gets the more opportunity you have for sexually transmitted disease to spread,” he said. ^26

Studies show an association between mobile dating apps and dating websites and more risky sexual behavior. For instance, a study of heterosexual young adults found that “individuals who used dating applications were twice as likely to have had unprotected sex in the past three months” than those who avoided apps. ^27

But several public health experts say the data do not prove the technology is causing the change. Much of the research focuses on men who have sex with men (MSM), in part because of their higher incidence of STDs than women and heterosexual men.

For example, several studies have shown that among MSM, online partnering is linked to less frequent condom use, more sexual partners, more anonymous partners and a higher likelihood of testing positive for gonorrhea and chlamydia compared with men who find sexual partners offline. ^28

But rather than leading to riskier behavior, dating apps might attract people who practice riskier behavior in the first place, says Justin J. Lehmiller, a research fellow at Indiana University’s Kinsey Institute for Research in Sex, Gender and Reproduction.

Lehmiller and a colleague found in their study that MSM who used apps reported a greater number of sex partners found online and offline than non-app users. ^29 "The fact that app users were more sexually active in general suggests that apps themselves aren't necessarily increasing STI risk," says Lehmiller.

Dating apps also make health departments’ job of tracing sexual partners more difficult, said Jason Wong, an epidemiologist in Canada with British Columbia’s public health department. “It’s easier to find … anonymous sex than it was before, which makes it harder for public health to track outbreaks,” he said. ^30

But one researcher found no difference in the number of locatable sexual partners of MSM with early syphilis who used dating apps and those who did not. Public health workers struggled to get partner contact information from both groups of patients, says Dr. Victoria Mobley, one of the researchers and a medical epidemiologist at the North Carolina Division of Public Health. ^31

The men may not have been comfortable naming partners or trusting state employees with the information, says Mobley. “In the South, we still deal with stigma more so than in other regions of the United States,” she says, adding that she does not know whether her findings would hold outside of North Carolina.

Regardless of whether dating apps contribute to STDs’ spread, the platforms are a good place to intervene, says Jeffrey Klausner, a professor of medicine and public health at the University of California, Los Angeles. “We need to use the apps to get health promotion messages out and to get links to people to get tested,” says Klausner.

Jack Harrison-Quintana, director of Grindr for Equality, the mobile dating app’s four-year-old education and outreach department, agrees. In 2016, Harrison-Quintana worked with Grindr
programmers to add profile fields for HIV status, PrEP use, condom use and the last test date for HIV and STDs. That way, potential partners know more about each other's sexual history.

The fields are optional, and Harrison-Quintana says he does not know how many people fill them in. That information "is kept very, very private because of concern around data privacy," he says.

For the same reason, Harrison-Quintana says he does not know how many people opt to receive four- or six-month electronic reminders on Grindr to get tested for HIV and STDs. Created last March, the option pops up only when a user fills in the last test date field.

Dan Wohlfeiler, director of Building Healthy Online Communities, a consortium of public health leaders that supports HIV and STD prevention online, has advised Grindr, Adam4Adam and other dating apps serving gay and bisexual men on how to add such profile options to their sites. Many have added testing reminders for users who fill in that field, although Wohlfeiler says he would prefer that the sites send reminders to all users, who could then opt out.

"Opt-out is the best way to do it for maximum impact, but it's not going to be popular with users," says Wohlfeiler.

Klausner, an attending physician at the UCLA medical clinic for people living with HIV, says the current system is not working. "In my clinic, when I ask people what brought them in for testing, no one is saying it's my Grindr app reminder," says Klausner.

Background

The Great Pox

In 1495, a new and disfiguring disease of unknown origin was spreading rapidly among French soldiers invading Naples, Italy. "Its symptoms were painful and repulsive — the appearance of genital sores, followed by foul abscesses and ulcers over the rest of the body and severe pains," author John Frith wrote in an article detailing the early history of syphilis. The so-called great pox, a more-virulent strain of modern syphilis, soon reached epidemic proportions across Europe. "As infection spread, so did fear," said scholar Peter Lewis Allen, and "panic towns and hospitals barred their gates against syphilitics." By the 1530s, physicians had concluded that the disease was transmitted through sexual intercourse. "The remedies were few and hardly efficacious," wrote Frith. They included mercury, which killed the syphilis bacteria but was so toxic that it hastened the deaths of many patients.

Medications and doctor visits were expensive and limited to the wealthy. The middle class relied on healers' potions and medical self-help books, and poor patients often ended up destitute in workhouses.

While prevention was not the primary emphasis in controlling the disease, two competing strategies emerged. To avoid infection, 16th-century Italian physicians recommended that men clean their genitals and then apply an ointment after intercourse with a prostitute. In England, physicians feared such advice would encourage illicit sexual behavior and instead advised men to abstain from sex before marriage and to remain faithful afterward.

"In the absence of reliable annual morbidity data, it is unclear whether either approach met with success," wrote medical historian Laura J. McGough and STD researcher H. Hunter Handsfield.

Crackdown on Prostitution

In 19th-century Europe and the United States, the control of sexually transmitted diseases became "virtually synonymous with the problem of prostitution," according to McGough and Handsfield.

Beginning in 1802, all Parisian prostitutes were required to register with the police, live in a designated section of the city and report every week or two to public health officials to be inspected for signs of STDs. If infected, prostitutes were imprisoned "without due process or a criminal conviction, in grim, filthy prisons" and injected with mercury, wrote Yale University law student Scott W. Stern, in his book about U.S. prostitution in the 20th century.

By the mid-19th century, many European countries had adopted the "French Plan," as it was known. The regulation fell most heavily on poor women, who were more likely to turn to prostitution to make a living. Police hunted down the many prostitutes who refused to register, even arresting women who were not prostitutes but exhibited "suspicious" behavior.

Opponents to these policies "largely blamed male exploiters for the existence of the sex trade and the spread of STIs," wrote Stern. "They wanted to close brothels, punish male exploiters of women, and 'reform' the prostitutes themselves." In 1886, opponents succeeded in persuading the British government to repeal the laws that had established the regulatory plan.

Meanwhile, the debate about regulation versus abolition of prostitution had traveled across the Atlantic to the United States. In 1870, St. Louis enacted an ordinance allowing public health
Sexually Transmitted Diseases: CQR

12

Beginning in World War I, the U.S. military stressed the need for soldiers to control their sexual drives and the risk of infecting their wives upon return from war and told that sex was for marriage and procreation. Lecturers described in vivid detail the symptoms of STDs and their long-term health effects. Troops could face punishment if diagnosed with an STD.

In the years leading up to World War II, the approach to STD control changed under the leadership of U.S. Surgeon General Thomas Parran. He opposed a purely moral approach and recommended "a program of screening, tracing sexual contacts of infected partners, and offering treatment to those infected in order to ‘break the chain of infection,’ " wrote McGough and Handsfield. In 1938, Congress passed the National Venereal Disease Control Act and appropriated $15 million to fund STD clinics, whose numbers nearly doubled to 3,000 within two years.

During World War II, the military reverted to many of its World War I policies, including cracking down on prostitutes, who, if infected, were forcibly quarantined in rapid treatment centers. One policy did change: Infected soldiers and sailors were no longer punished. Authorities realized that penalties, such as loss of pay, discouraged soldiers from seeking treatment.

In 1943, U.S. government researcher John Mahoney proved the effectiveness of penicillin, an antibiotic discovered by Scottish bacteriologist Alexander Fleming in 1929, as a cure for syphilis. As a result of penicillin treatment, the rate of reported primary and secondary syphilis cases in the United States plunged from 63.8 per 100,000 population in 1943 to 5.6 per 100,000 a decade later. The antibiotic also cut the rate of newly infected...
importance of abstinence and sought to eliminate prostitution near training camps. (Getty Images/Hulton Archive)

With the threat passing, public health officials' interest in preventing sexually transmitted diseases waned. Federal funding for STD control fell from $18 million in 1949 to $3 million in 1955. By the late 1950s, "much of the machinery, especially procedures for case finding, tracing [partners], and diagnostics, had been cut back," wrote Brandt, although periodic campaigns against syphilis continued.

But the public's support for STD prevention was undermined when, in 1972, a journalist revealed that the U.S. Public Health Service had been withholding treatment from 399 black men in Alabama in a decadeslong study of the long-term health impact of syphilis.

The Sexual Revolution

Sexual mores underwent a fundamental shift in the 1960s during the so-called sexual revolution, in which feminists and others challenged traditional gender roles. During the "Summer of Love" in 1967, some 100,000 people came to Haight-Ashbury in San Francisco to commune and oppose the Vietnam War. The "hippie" spirit included an emphasis on sharing, free love and questioning authority.

STD rates rose during this period, with gonorrhea reaching a peak of 464 reported cases per 100,000 population in 1975.

"Many public health officials and physicians attributed this increase to what they called the three 'p's': permissiveness, promiscuity, and the pill," wrote Brandt. The birth control pill was first approved for use in the United States in 1960, but Brandt said it was simplistic to blame the pill as a cause of rising infection rates because later studies showed that women on the pill were at no greater risk for STDs than others.

Brandt also noted that "premarital sexual relations had been occurring with greater frequency throughout the century." He said the previous decade's funding cuts were responsible for much of the STD increases.

In 1972, in response to the gonorrhea epidemic and armed with an improved method for culturing the gonorrhea bacterium for diagnostic tests, the CDC began the National Gonorrhea Control Program.

The agency "distributed culture plates to health care providers to encourage screening of reproductive-age women when they had a pelvic examination," according to a history written by government researchers. "Additional efforts focused on finding and treating the female partners of infected men, education, and expanding the availability of screening and treatment." In 1975, more than 9.3 million women were tested and 4.3 percent were found to be positive.

Assessing the gonorrhea program's impact is difficult, experts say, because so many other factors were changing at the time, including testing technology, medicines and the characteristics of the people being screened. The program began when "the average Baby Boomer was 18, and gonorrhea rates decreased as the Baby Boomers aged out of the high-risk age for acquiring infection," according to the program history. Still, government researchers said the program helped to reduce the gonorrhea rate.

The AIDS Crisis

In June 1981, U.S. public health service workers learned that five previously healthy gay men had contracted a rare form of pneumonia. Over the summer those numbers slowly increased, and by fall, government scientists began to worry a new disease was emerging, possibly transmitted through infected blood and sexual contact. These were the first known cases of AIDS, caused by HIV. The virus would swiftly develop into a devastating epidemic. In 1990, as many as 400,000 people died from AIDS worldwide, and more than 9 million were living with the virus.

A watershed came in 1995, when the FDA approved antiviral drugs known as protease inhibitors to treat HIV, and a newly developed drug cocktail kept the virus from developing into full-blown AIDS. New HIV infections worldwide peaked in 1996. Ten years later, AIDS-related deaths began to decline as a result of the new treatment regimen and robust prevention programs that emphasized HIV testing and safe sex.

In 1997, the Institute of Medicine (now the National Academy of Medicine), a nongovernmental organization whose volunteer scientists and experts advise government leaders and the public on health and science policy, issued "The Hidden Epidemic: Confronting Sexually Transmitted Diseases." Its opening line called STDs "hidden epidemics of tremendous health and economic consequence [that] are hidden from public view."

Although rates of gonorrhea and syphilis were falling, the report's authors noted that "rates of curable STDs, including gonorrhea, syphilis, and chancroid, are many times higher in the United States than in other developed countries." They called for a multifaceted national plan to address the problem.
In 1999, the CDC launched a national plan to eliminate syphilis. As part of the campaign, funding increased for surveillance, clinical services, health promotion, community involvement and rapid outbreak response. Yet by 2002, syphilis cases were rising once again, largely among men having sex with other men, and the program ended in 2013.

The ambitious program was flawed from the start because it did not consider cultural diversity or address socioeconomic factors such as poverty, unemployment and low educational attainment that raise individuals’ risk of acquiring and transmitting STDs, government researchers said in a recent analysis. “This national commitment to syphilis elimination was not the first effort, and like others before it too did not succeed,” the researchers said.

Meanwhile, in 2007, Apple introduced the iPhone, the first smartphone marketed for the consumer market and not just businesspeople. The Web-friendly phone inspired the development of multiple mobile dating apps, including Grindr in 2009, Tindr in 2012 and Bumble in 2014. It did not take long before pundits were asking whether the apps contributed to rising STD rates by encouraging anonymous and risky sex.

In 2012, the FDA approved Truvada as a preventative medication for individuals at high risk of getting HIV.

Other factors driving the resurgence of STDs were the 2007-09 financial crisis and the opioid addiction epidemic. Abuse of prescription drugs and heroin killed almost 250,000 Americans between 2000 and 2016. The CDC says the crisis led to more sexually transmitted diseases because “people who inject drugs are at elevated risk for unsafe sexual practices, such as having sex without a condom, having sex with partners who are injection drug users, or engaging in sex work.” It estimated that 10 percent of new HIV infections were among people who injected drugs.

As a result of those factors, primary and secondary syphilis rates per 100,000 people climbed from 4.4 to 9.5 from 2008 to 2017, while gonorrhea rates increased from 110.7 to 171.9. Nearly 2.3 million cases of sexually transmitted diseases were diagnosed in 2017, the highest number ever reported nationwide.

“We are sliding backward,” said Dr. Jonathan Mermin, director of STD prevention at the CDC. “It is evident the systems that identify, treat, and ultimately prevent STDs are strained to near-breaking point.”

### Current Situation

#### Emerging Disease

A little known sexually transmitted bacteria is causing alarm among STD researchers.

Scientists believe the bacteria, known as Mgen, can lead to inflammation of the cervix and infertility in women, and swelling and inflammation of the urethra in men.

Yet the average doctor knows little about Mgen, said Dr. William Schaffner, an infectious disease specialist at Vanderbilt University Medical Center in Nashville, Tenn.

Until recently, there was no federally approved test for Mgen in the United States. People with the infection often do not exhibit symptoms, but when they do, the symptoms resemble those of chlamydia and gonorrhea, including painful urination for men and pain during sex for women. As a result, Mgen is often treated with the wrong antibiotic, leaving the infection untouched. Most concerning, research shows that as many as half of infected women and 42 percent of infected men may have an antibiotic-resistant Mgen strain.

Last month, the FDA approved the first diagnostic test for Mgen, produced by medical technology company Hologic Inc. in Marlborough, Mass. STD experts have said that the availability of a test would raise awareness about Mgen among health professionals and stimulate research into better treatments.

#### New Use for Vaccine

Men and women ages 27 through 45 now can receive Gardasil 9, the HPV vaccine. The vaccine prevents a range of cancers and other diseases, including genital warts, cervical cancer and head and neck cancers, caused by nine HPV strains. Previously, Gardasil 9 was approved only for males and females ages 9 through 26. The FDA approved its use in older individuals in October.

Because vaccination does not protect individuals already infected with HPV, Gardasil 9 is strongly recommended for children and young adults, many of whom may not yet have been exposed to the sexually transmitted virus.

Older adults who have been in monogamous relationships and perhaps not exposed to HPV also may benefit from the vaccine if they become sexually active after getting divorced or being widowed, said Dr. Trey Leah, a gynecologic oncologist at the University of Alabama, Birmingham. In addition, sexually active older adults may have been exposed to only a few of the nine high-risk
HPV strains that the vaccine covers, and vaccination would protect them against the others, he said.

There are dozens of HPV strains, and “nearly all men and women will get at least one type of HPV at some point in their lives,” according to the CDC. “Most HPV infections (nine out of 10) go away by themselves within two years.”

Although the FDA has approved Gardasil 9 for children as young as 9, the CDC recommends that boys and girls receive the vaccine at age 11 or 12. The percentage of children who receive the vaccine has been steadily increasing, but fewer than half of teenagers were vaccinated as of 2017, according to a November report from the President’s Cancer Panel.

Possible New Drug for Gonorrhea

A new antibiotic is showing promise in treating gonorrhea, which is particularly prone to developing drug resistance.

A team of researchers reported in The New England Journal of Medicine in November that the antibiotic, a single-dose oral medicine called zoliflodacin, successfully treated urogenital (urinary and genital) and rectal gonorrhea among 179 participants in a Phase II clinical trial, the phase designed to test a treatment's effectiveness. Researchers recently completed a larger, Phase III trial involving 650 people. Those results, not yet public, must be presented to the FDA before it can consider approving zoliflodacin for commercial use.

“Since there is no vaccine to prevent gonorrhea, and the possibility of untreatable gonorrhea is looming larger, it is imperative that we develop new drugs to treat it,” said Stephanie Taylor, professor of medicine and microbiology at Louisiana State University School of Medicine and a co-author of the journal article.

CDC spokesman Brian Katzowitz said in an email that gonorrhea has developed resistance to every drug used to treat it “since the introduction of antibiotics in the 1940s, except for ceftriaxone, the only remaining highly effective antibiotic to treat gonorrhea in the United States.”

Researchers testing zoliflodacin hope it will become available as a treatment by 2023.

Testing for STDs in School

A novel screening and treatment program for chlamydia has resulted in a sustained decrease in infections among students at four Detroit high schools, according to a recently published study. That success may provide lessons for other jurisdictions.

Public health officials began annual testing of students for chlamydia starting in the 2010-11 school year. Parents were notified before testing began and could decline to allow their children to participate. One classroom at a time was called to the auditorium and given a brief overview of STDs, the testing process and treatment. The students were then given a consent form, a personal data sheet and a paper bag with a urine specimen cup and were escorted to the school bathroom. There, in privacy, they chose whether to provide a specimen for testing, and all returned the bag to a bin monitored by staff. Students who tested positive were confidentially given medication.

Over the course of four years, 11.54 percent of female students at the schools and 4.41 percent of males tested positive for chlamydia and were treated. On average, the infection rate decreased from 10.24 percent in the first year of the program to 6.27 percent in the fourth year.
School-based STD testing has been tried in a handful of other cities and is currently in use in Washington, D.C., New York and Philadelphia. While those programs have successfully identified and treated individual chlamydia cases, they have not resulted in a sustained reduction in STD rates within a school, according to a 2016 review of the programs.

“One of the reasons is that high school isn’t a hermetically sealed environment,” says Lewis at the Philadelphia Department of Health, who co-authored the review. Lewis says that in other research she conducted, “less than half of the students we interviewed chose their [sexual] partners from within the high school.”

In a paper published last year, the Detroit study team said that one explanation for its success in lowering chlamydia rates over time could be that student participation in the testing program was higher than in other cities.

Successfully identifying and treating individual cases, even without lowering overall incidence rates, is a key goal of such programs. Lewis says school-based screening is cost-effective at preventing complications from STDs and would make sense to implement in communities where at least 1.5 percent of the adolescent population has chlamydia.

“But it’s difficult to start this up,” she says, adding that public health departments need funding for supplies, testing and staffing at a time when they “have been increasingly starved for money over the past decade.”

Federal Action

In his State of the Union address on Feb. 5, President Trump announced a campaign to stop the spread of HIV by 2030 by allocating additional federal funds to 48 counties and other HIV hot spots, including San Juan, Puerto Rico, and Washington, D.C. “Scientific breakthroughs have brought a once-distant dream within reach,” the president said.

The plan is only a blueprint, which HHS released after the speech. It will focus on “four key strategies that together can end the HIV epidemic in the U.S.: Diagnose, Treat, Protect, and Respond,” the department said. Trump did not specify how much additional money would be devoted to the campaign. Funding details are expected when the administration unveils its fiscal 2020 budget proposal next month.

HHS also is expected to release within a year a national action plan to tackle other STDs. It is unclear whether money for that plan will be part of the fiscal 2020 budget proposal. The action plan will set goals and coordinate STD strategy across federal, state and local government agencies and with the private sector.

But on another front, some public health officials fear the Trump administration’s efforts to shift family-planning funding away from groups that perform abortions or give abortion advice could hurt efforts to combat STDs. Many family-planning clinics, such as Planned Parenthood, provide a wide range of services, from contraception to abortion counseling. The loss of federal funding, some health officials say, could hurt efforts to screen for STDs and treat the infections.

With STD rates soaring, the funding loss “comes at absolutely the worst time,” said Daniel Daltry, head of the HIV/AIDS, STD and Viral Hepatitis Program at the Vermont Department of Health.

Outlook

Fragmented System

The nation needs to develop a comprehensive strategy to address the STD public health crisis, public health experts agree. “Our health system is fragmented … in terms of STD policy. Everybody has a piece of it,” says Benjamin of the American Public Health Association. Such plans exist for the flu and for tuberculosis.

As the lead federal agency in the STD fight, the CDC funds state and local programs to monitor, prevent and control STDs and provide leadership, scientific information and research. But a number of other agencies within HHS also play a role, including the National Institutes of Health, the nation's medical research agency, and the Centers for Medicare and Medicaid, which funds STD screening and treatment for covered populations. The military also has its own health system.

Benjamin says he is optimistic that HHS' upcoming action plan to coordinate STD strategy will help.

Harvey of the National Coalition of STD Directors also is optimistic, saying that once the plan is made public, additional federal funding will follow. “Usually what happens when you have a federal plan, and when you have a growing awareness in Congress of the desperate need for funds to combat this level of crisis, you see more coordination and you see more resources,” he says.

Because of increased funding and efforts of organizations like his to raise awareness, STD rates will decline, says Harvey, “not evenly, but reduced STD rates within 10 years. So I am very hopeful.”

Stewart of the American Academy of Family Physicians predicts STD rates will reverse within the next decade. She says that is because the academy is working to increase the number of people with a primary care physician, and more physicians will be comfortable talking to their patients about sexual health.
"If we have more folks out there who can have that conversation with patients, we will be able to address this issue of STIs," she says.

Brown University's Chan agrees. "Advocating for improved access to care and improved sexual health education, both for patients and primary care providers … has the potential to eventually address the STD epidemic in 10 years."

Weinstein from the AIDS Healthcare Foundation disagrees with these assessments and says he does not have much faith that the coming HHS plan will effectively address the STD epidemic. "There is nothing on the horizon right now [indicating] that it's going to be declared an emergency or that there will be a full-throated call to action," he says.

As a result, he predicts an increase in drug-resistant gonorrhea and a continuing increase in syphilis cases over the next decade. The only ray of hope, he says, is that a bit more money might be devoted to STDs in California, where he is based, and possibly at the federal level.

But Weinstein says the stigma surrounding STDs means the effort to fight these diseases will always be somewhat limited. The fundamental problem, he says, is that "basically in this country, STDs are regarded as the wages of sin."

**Pro/Con**

Has abstinence-only sex education contributed to the rise in STDs?

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Dozens of rigorous studies show that sex education effectively promotes the behaviors that are necessary to prevent sexually transmitted diseases (STDs): using condoms, reducing the number of sexual partners and delaying the onset of sexual activity. Of course, the type of sex education matters, and research shows that comprehensive sex education helps change behaviors in a positive direction while abstinence-only education rarely does.

Comprehensive sex education programs include age-appropriate information about a wide range of topics, including healthy relationships, birth control and STDs. In contrast, abstinence-only programs leave out critical information and have numerous other shortcomings, including overlooking the needs of LGBT and sexually active students.

A number of the leading medical and scientific organizations in the country have taken positions against abstinence-only education for these reasons. For example, the Society for Adolescent Health and Medicine notes that abstinence-only-until-marriage programs "are not effective in delaying initiation of sexual intercourse or changing other behaviors. Conversely, many comprehensive sexuality education programs successfully delay initiation of sexual intercourse and reduce sexual risk behaviors."

The American Public Health Association, meanwhile, concludes in its position statement: "Evidence suggests that abstinence-only approaches do not lead to behavioral changes and result in critical health information being inappropriately withheld."

The promotion of abstinence-only education in the United States means that hundreds of thousands of young people have participated in programs that offer incomplete or misleading information about STD prevention. At its peak in fiscal 2008, federal funding for abstinence-only education totaled $177 million.

Analyses of these programs show that many contain inaccurate information about topics

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Critics of abstinence education — which does not promote condom use — claim it does not reduce risky teenage behavior and even causes harm. Advocates of comprehensive sex education (CSE) — a condom-based strategy — claim it is proven effective. However, ideology and biased reporting of the research have skewed the public debate.

An objective examination of the evidence does not support either of these claims. Often, low standards of effectiveness are used for CSE, while abstinence education is criticized for not meeting higher standards.

A recent worldwide review of 120 of the best, most current studies of sex education — vetted for scientific rigor by the U.S. Health and Human Services Department, UNESCO and the Centers for Disease Control and Prevention — demonstrated that when meaningful criteria are used, there is little evidence of CSE effectiveness in schools, the setting where most sex education occurs. (Meaningful criteria entails effects that are sustained for 12 months on abstinence, consistent condom use, pregnancy rates, or STDs for the targeted population, without concurrent negative effects.)

Only four out of 103 studies found school-based CSE programs met this standard of effectiveness, and 16 studies found 22 negative/harmful effects, including increased STDs. There was no evidence that CSE increased consistent condom use (the behavior required for optimum, though partial, STD protection) or was effective at reducing STDs or pregnancy. Most CSE studies were not conducted by independent researchers.

Of the 17 abstinence education studies in the database, seven found a sustained, 12-month delay in sexual initiation. This was a much better success ratio than the CSE programs and produced an outcome (abstaining) that provides more STD protection than condom use. Abstinence education programs caused no decrease in condom use by sexually active teens and no increase in STDs.
related to STDs. This inaccurate information can be in the form of assertions that condoms are less effective than they actually are, or guidance that encourages teens to practice “cessation” (stopping sex once they start), but without including any information about the importance of getting tested for STDs.

Even today, when national policy has largely moved away from abstinence-only education and toward supporting evidence-based programs, many young people are still not getting the STD education they need.

While sex education is not the only contributor or the only solution to today’s STD epidemic, comprehensive sex education is a key strategy for addressing it and is what young people and their parents want and deserve.

U.S. trend data support abstinence. Adolescent sexual activity rates have declined substantially since 1990, demonstrating that teen sex is not inevitable or irreversible. And in recent years when abstinence education’s federal funding was cut and CSE funding accelerated, teen condom use decreased and chlamydia and gonorrhea increased, reversing gonorrhea’s substantial decline during the peak abstinence education funding years.

Research provides no evidence that abstinence education has increased STD rates. The preponderance of credible evidence favors further development and testing of abstinence strategies. Moreover, the evidence of CSE failure in schools worldwide over the past 30 years calls for policymakers to abandon their ideological commitment to this approach and pursue truly effective solutions.

Chronology

1879–1943

Researchers unravel the mysteries of sexually transmitted diseases (STDs).

1879

German physician Albert Neisser discovers the gonorrhea bacterium.

1905

German scientists Erich Hoffmann and Fritz Schaudinn discover the syphilis microbe; German bacteriologist August von Wasserman develops a syphilis test a year later.

1909

German scientist Paul Ehrlich discovers Salvarsan, a moderately effective but toxic syphilis treatment.

1917

The U.S. military recommends troops abstain from sex to avoid STDs and suppresses prostitution near training camps.

1918

Thirty-two states allow compulsory testing of prostitutes for STDs and forced quarantine of those found to be infected.

1932

The U.S. Public Health Service studies the long-term effects of syphilis by withholding treatment from hundreds of infected black men; the study ends in 1972 after public disclosure.

1938

National Venereal Disease Control Act authorizes federal assistance to state STD programs; the number of STD clinics doubles in two years.

1941

Federal government cracks down on red light districts near military camps during WWII; prostitutes with STDs are forcibly quarantined and treated.

1943

Government researcher John Mahoney demonstrates effectiveness of penicillin against syphilis; over the next decade, syphilis rates plunge and gonorrhea rates soon fall as well.

1955–1997

Government funding for STD prevention declines.

1955

Federal funding for STD prevention is $3 million, an 83 percent drop in six years.

1960

U.S. Food and Drug Administration (FDA) approves the birth control pill, helping usher in the so-called sexual revolution.

1972

The Centers for Disease Control and Prevention (CDC) starts the National Gonorrhea Control Program to expand screening and treatment.

1975

Gonorrhea rate peaks.

1981

First cases of AIDS appear.

1995

FDA approves first protease inhibitor to treat HIV, the virus that causes AIDS.

1996

Number of new HIV infections worldwide peaks.
Institute of Medicine, a nongovernmental body of experts, issues “The Hidden Epidemic: Confronting Sexually Transmitted Diseases,” focusing on the need to control STDs. Rates of syphilis and gonorrhea continue to fall but are higher than in other developed countries.

1999–Present

HIV rate stabilizes but STD rates rise.

1999

CDC launches national plan to eliminate syphilis; nevertheless, the syphilis rate climbs after reaching historic low in 2000.

2005

AIDS-related deaths worldwide begin to decline.

2007

Apple introduces the iPhone; some researchers say dating apps contribute to casual sex and an STD increase.

2009

Gonorrhea rate declines to historic low and then starts rising; the mobile dating app Grindr is introduced, and other dating apps follow.

2012

FDA approves Truvada as a preventative medication for individuals at high risk of getting HIV; critics worry the drug will lead to reduced condom use among men who have sex with men.

2015

CDC classifies Mycoplasma genitalium, a bacterium discovered in the 1980s, as an STD.

2016

National death toll from opioid crisis reaches 250,000; CDC says increased drug use leads to more STDs.

2017

Syphilis rate is more than double the rate in 2008; the gonorrhea rate is 55 percent higher.

2018

Fewer than half of teenagers are vaccinated against HPV, an STD that can lead to cancer; the FDA approves the vaccine for older adults. CDC’s spending on STD prevention is $157 million, a 32 percent drop since 2002, after adjusting for inflation.

2019

Trump administration readies an action plan to combat STDs.

Short Features

Some Doctors Treat Sexual Partners Sight Unseen

Most states allow the practice, but it faces obstacles.

Too often, says Dr. Crystal Bowe, a family physician who practices in North and South Carolina, a patient who has been treated for a sexually transmitted disease (STD) returns to her office re-infected.

Bowe knows the patient has ignored her advice to avoid sex with a partner who hasn’t also received treatment. But “they just don’t wait,” she said. “So they are passing the infection back and forth.”

In such cases, Bowe takes an unusual step. She prescribes medication for the sexual partner sight unseen, without a doctor visit.1

The practice is called expedited partner therapy, and the federal government and several professional medical associations endorse it. It allows health care providers to reach people who might not have health insurance or access to health care. And research has shown that it brings down health care costs by reducing the spread of infections and re-infections.2

Expedited partner therapy is not recommended for men who have sex with men because of the concern that prescribing medicine without an examination may mean missing a co-infection with HIV, the virus that causes AIDS.

Forty one states allow health care providers to give a patient with an STD a prescription or medication for a sexual partner without requiring the partner to come in for a medical exam. Seven states have no such laws, and South Carolina and Kentucky forbid the practice.3

While permissible in most of the country, expedited partner therapy is underused, research shows. Public health experts cite many obstacles to wider use.

“One of the key issues with expedited partner therapy is that not enough providers know about it,” says Gretchen Weiss, director of HIV, sexually transmitted infection (STI) and viral hepatitis at the National Association of County and City Health Officials in Washington. Even if they do, she says, they may prefer to see individuals in person before writing any prescriptions or giving away any medicines. “They might be concerned about missed opportunities for education, counseling and potentially detecting other sexually transmitted infections,” Weiss says.
Health care providers also might be worried about prescribing medicine without being able to check for a drug allergy. In addition, they may be concerned that prescribing an antibiotic without confirming that the sexual partner is indeed infected could contribute to the general overuse of antibiotics and the development of drug-resistant microbes.

Both those concerns are unwarranted, says Cornelis “Kees” Rietmeijer, medical director of the Denver Clinical Prevention Training Center, which is funded by the U.S. Centers for Disease Control and Prevention (CDC) and trains health care providers who diagnose, treat and manage sexually transmitted infections.

“In terms of side effects and allergic reactions, we have done expedited partner therapy in our clinic for over 10 years, and we haven’t really seen any problems with it,” says Rietmeijer.

As far as concerns over antibiotic resistance, “the little bit of drugs that we give out as part of expedited partner therapy is really a drop in the bucket,” Rietmeijer says. Even if the practice were more widely adopted, the amount of drugs prescribed would still pale compared to all the antibiotics mistakenly given for viral infections, he says.

Public health experts say the challenge is not always with providers. Many health insurance plans do not cover expedited partner therapy, and pharmacies may not be willing or able to fill such prescriptions.

For example, in Wisconsin, as in many other states, the law allows a health care provider to write “expedited partner therapy” on the prescription if the patient doesn’t know or refuses to disclose the sexual partner’s name. Yet in a study of 50 pharmacies in Milwaukee County, more than half refused to fill such nameless prescriptions.

“Addressing these challenges will require collaboration among health departments, health care providers, pharmacists, policy makers and other stakeholders,” says Weiss. One strategy, she says, would be to borrow the playbook of pharmaceutical representatives, who make so-called detailing visits to physician’s offices to teach them about their company’s drugs.

Health departments already do public health detailing for a variety of issues, such as opioid addiction and maternal health, and some, like Maryland’s health department, are trying it for expedited partner therapy.

In 2017, the Maryland Department of Health received a CDC grant to evaluate the uptake of expedited partner therapy in Baltimore and nearby Prince George’s County. Researchers at Johns Hopkins University conducted the evaluation, and as part of the process they visited health care providers two and sometimes three times each. The last visits ended in December.

The goal of the detailing visits was to let health care providers know that expedited partner therapy is legal in the state and how to go about it.

“They may not know what medications they should be using,” says Elisabeth Liebow, policy and program associate for STI prevention at the Maryland Department of Health. “They may not know the kinds of information they’re required to provide the patient to give to his or her sex partners or what kind of education they’re required to provide the patient.”

The challenge with doing any kind of public health detailing, says Liebow, is that clinicians are busy. “Getting them to take 10 or 20 minutes out of their schedule means they are backed up the entire day.”

— Barbara Mantel


[4] Ibid.


Researchers Hope to Make STD Testing Faster and Easier

“The bottom line is to encourage people to get tested.”

Molly Ade, 22, said she had not bothered to get tested for a sexually transmitted disease (STD) despite being sexually active because she thought it would be a difficult and time-consuming hassle.

But Ade said she realized that trusting a partner to disclose his STD status and making him use condoms were not enough and “it started to dawn on me that maybe it’s time.”

Doctors and health professionals say numerous barriers can keep people from getting tested for STDs. A survey published in 2016 in the Journal of Adolescent Health found that more than half of
respondents ages 20 to 25 did not want to get tested because of confidentiality concerns, while more than 42 percent of sexually active respondents did not get tested because they believed they were not at risk.

“Most people are infected by people who don’t know they themselves are infected,” says Dr. Gary Richwald, medical director and chief strategy officer of myLAB Box, an at-home STD testing company in Los Angeles. “Clearly we’re under-testing.”

An STD testing kit offered by Los Angeles-based myLAB Box allows users to test for STDs in the privacy of their homes. To improve screening rates, some health experts say people should have more testing options. (Courtesy of myLAB Box)

Most STD testing is conducted at doctors’ offices or clinics. A typical test requires a patient visit, where a sample is collected and sent to a lab for analysis. But the process can take days, and that time lag can help a sexually transmitted disease spread, doctors say. Some large STD and HIV clinics have labs onsite and can turn around tests results in the same day. Researchers are trying to develop faster and more efficient tests, with some already on the market.

Patients should have the option to get tested for STDs at home, at a clinic or at a pharmacy, said Dr. Charlotte Gaydos, director of the Johns Hopkins Center for the Development of Point-of-Care Tests for STDs. “The bottom line is to encourage people to get tested.”

Nearly 20 million new sexually transmitted infections are estimated to occur annually, the vast majority of which are never diagnosed, and young people ages 15-24 account for half of them, according to the Centers for Disease Control and Prevention (CDC). However, despite that age group being most at risk, only 12 percent of people in it were tested for STDs in 2016, the Journal of Adolescent Health survey found.

Gaydos is part of a team seeking to help develop a faster test for chlamydia, a bacterial infection that can result from sexual contact, that can be done during doctor visits using a small analyzing device. Such a test would allow patients to get their results in as little as 30 minutes. In November, a pilot study published by Gaydos’ team concluded that a rapid test developed by medical technology company Binx Health in Boston was nearly as accurate as the standard chlamydia test, Aptima Combo 2.

The study, conducted among females ages 14 and older, found that 61 percent would be willing to wait up to 20 minutes for test results if it meant they could receive treatment during the same visit. The U.S. Food and Drug Administration (FDA) would have to approve the testing technology before it could be commercially available. It is now being studied in a final clinical trial across 17 U.S. sites and 5,000 patients.

An alternative to testing at a health care provider’s office is at-home self-collection, in which individuals buy a test online and take their own blood, urine and possibly genital and/or rectal swab samples, then send the test back for lab analysis. Although home tests require a waiting time for results, typically no more than a few days, proponents say these tests reduce what some see as the stigma and discomfort associated with a doctor’s visit and thus will lead to greater detection of STDs.

Richwald says relying on a brick-and-mortar system, in which testing is conducted in doctors’ offices and clinics, doesn't work. “We are in the second-biggest STD epidemic in the last 40 years,”
he says. According to a 2018 survey of 18- to 29-year-olds, more than half of respondents said they prefer to collect their samples at home. Nearly 80 percent of males who were sexually active with other men said they want home testing. At-home tests consistently show that they have an accuracy rate nearly or exactly the same as similar tests conducted in doctor's offices, according to multiple studies.

But Dr. Bernard Branson, a leading HIV expert from Atlanta and a former medical epidemiologist at the CDC, said that because most at-home STD tests involve sending the collected samples to a lab, rapid results are not feasible.

The only at-home STD test available in the United States that provides rapid results, he said, is for HIV, the virus that leads to AIDS. A popular brand, the OraQuick In-Home HIV Test, requires individuals to take an oral swab and place it in a tube with a developing solution. After about 20 minutes, the results appear. The test has been approved by the U.S. Food and Drug Administration (FDA) and is sold at drugstores, but only to people at least 17 years old.

Despite the technological challenges, researchers say they will continue to try to make testing faster and more efficient.

“We need to remove as many barriers to care as possible,” said Dr. Amesh A. Adalja, an infectious disease expert and senior scholar at the Johns Hopkins Center for Health Security, a Baltimore group that studies epidemics.

— Natalia Gurevich


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Contacts

AIDS Healthcare Foundation
6255 Sunset Blvd., 21st Floor, Los Angeles, CA 90028
323-860-5200
www.aidshealth.org
Global provider of HIV prevention services, testing, and health care for people with HIV.

American Academy of Family Physicians
11400 Tomahawk Creek Parkway, Leawood, KS 66211
913-906-6000
www.aafp.org
Membership organization that educates patients, partners with employers and lobbies government on behalf of family physicians.

Division of STD Prevention, Centers for Disease Control and Prevention
1600 Clifton Road, Atlanta, GA 30329
800-232-4636
www.cdc.gov/std/stdtp/
Government division that provides national leadership, research, policy development and scientific information to state and local health departments, health care providers and nongovernmental organizations.

National Academy of Public Administration
1600 K St., N.W., Suite 400, Washington, DC 20006
202-347-3190
www.napawash.org
Congressionally chartered academy of fellows that provides expert advice to government leaders, including on health care.

National Association of County and City Health Officials
1201 I St., N.W., 4th Floor, Washington, DC 20005
202-783-5550
www.naccho.org
Membership organization that advocates on behalf of nearly 3,000 local health departments across the United States.

National Coalition of STD Directors
1029 Vermont Ave., N.W., Suite 500, Washington, DC 20005
202-842-4660
www.ncsddc.org
Membership organization representing sexually transmitted disease (STD) directors at public health departments, their staffs and community-based partners across the United States.

Project Inform
25 Taylor St., 7th Floor, San Francisco, CA 94102
Advocacy organization that supports drug research, educates the public and lobbies government on behalf of people living with HIV and hepatitis C.

U.S. Preventive Services Task Force
5600 Fishers Lane, Mail Stop 06E53A, Rockville, MD 20857
www.uspreventiveservicestaskforce.org
Independent, volunteer panel of national experts that makes evidence-based recommendations about clinical preventive services, including for STD screening.

Footnotes


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[37] Ibid., p. 7.


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[52] “Sexually Transmitted Disease Surveillance 2017,” op. cit., Table 1.

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