

## Preventable Rash

March 1, 2005

McLean C. Preventable Rash. PSNet [internet]. 2005.

<https://psnet.ahrq.gov/web-mm/preventable-rash>

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### The Case

A 35-year-old man with HIV was being followed in an outpatient internal medicine clinic. At a routine visit, screening laboratories were checked. The clinic never contacted the patient about his laboratory test results, and he assumed they were normal. He returned to his normal lifestyle, including occasional unprotected sexual activity.

One month later, he developed a rash. The outpatient clinic was unable to see him immediately, and recommended he go to the urgent care clinic. The urgent care provider reviewed his lab results and discovered that his tests for rapid plasma reagin (RPR) and Treponema antibody were both positive. Examination was notable for a classic syphilitic rash ([Figure](#)), confirming the diagnosis of secondary syphilis. The patient was treated with penicillin in the urgent care clinic. However, he subsequently developed a Jarisch-Herxheimer reaction and was admitted to the hospital.

### The Commentary

This case highlights the danger of inadequate follow-up of outpatient tests and the challenges in the recognition and diagnosis of syphilis and other sexually transmitted diseases (STDs). Just as important, given a potentially transmissible disease, the case provides an opportunity to examine the process of reporting diseases to public health entities and the associated pitfalls.

#### Diagnosing Sexually Transmitted Diseases

Diagnosing untreated syphilis and other STDs can be complex, even for experienced clinicians. First and foremost, clinicians must obtain an adequate sexual history. Talking with patients about their sexual practices is a prerequisite for assessing their risk for STDs and HIV, for screening appropriately, and for providing quality care. Data consistently show that sexual histories are not routinely obtained ([1,2](#)), and few providers have obtained adequate training.[\(3\)](#)

Second, this case underscores the importance of being familiar with local STD epidemiology. Since 1998, outbreaks of syphilis have occurred among men having sex with men (MSM) in cities throughout the United States. Most MSM with syphilis in these outbreaks have been HIV positive (50%-70%) (4,5), which is particularly concerning given that co-infection with syphilis and HIV increases the risk of HIV transmission to a sex partner.(6) Understanding the recent epidemiology of syphilis may have increased this clinician's concern about screening for syphilis in this patient, possibly resulting in better follow-up.

Third, in order to make the diagnosis, appropriate screening for STDs must be done on a routine basis. Many STDs, including syphilis and HIV, are asymptomatic; therefore, screening asymptomatic patients for STDs is the only way to detect infection in many patients. The US Preventive Services Task Force (USPSTF) and the Centers for Disease Control and Prevention's (CDC) Division of STD Prevention publish STD screening and treatment guidelines.(7,8) A thorough sexual history may have identified this patient as a MSM, in which case, CDC recommends at least annual screening for syphilis, gonorrhea (urethral, rectal, and pharyngeal), and chlamydia.(8) The clinician in this case did order the syphilis serology (the RPR) but not the syphilis serologic titer, which is critical in establishing the diagnosis and following the course of the disease after treatment. We are not provided with information regarding additional STD screening tests (such as for gonorrhea and chlamydia); these tests should also have been conducted.

The delay in recognition of this patient's syphilis infection could have resulted in significant morbidity if he had developed neurosyphilis, or if one or more sex partners were infected with syphilis or HIV. Infection with syphilis and other ulcerative and non-ulcerative STDs increases the risk of HIV transmission 2- to 5-fold.(6)

#### Clinician/Laboratory Follow-up

Although the syphilis serology was obtained, the clinician failed to follow up on the results of the RPR test ordered, resulting in a delay in the diagnosis of syphilis and resulting in progression to secondary syphilis. In the "Lost in the Black Hole" case presented in this journal (9), Wachter underscored the importance of laboratory follow-up systems for quality patient care. He recommended laboratory accountability for reporting critical laboratory results to providers and suggested the use of reminders for providers to review the results of ordered laboratory tests.

#### Health Department Reporting

This case also involves a reportable disease, and therefore demonstrates one or more possible failures in the system of reporting communicable diseases to the public health department. Currently, clinicians are required to report a number of diseases (for example, shigellosis, malaria, gonorrhea, and tetanus). The purpose of prompt case reporting of STDs is to insure that: (i) Persons who are infected are quickly diagnosed and appropriately treated to control spread of infection; (ii) Partners are notified, tested, and appropriately treated; (iii) Disease outbreaks are identified early; and (iv) Local, national, and international disease surveillance accurately reflects the true burden of disease in the community [ [go to related site](#) ].(10,11)

What happens when a clinician reports a disease to the local health department? The health department reporting process generally works in the following way: Reports are sent by laboratories and clinicians to

the local health department by mail, email, or fax. Once received, additional demographic and clinical information is gathered to determine if the diagnosis is accurate, if treatment was adequate, and if contacts are at risk of infection or need treatment.

For syphilis, STD experts (Disease Intervention Specialists [DIS]), using a registry of previous reports of syphilis and by communicating with other health departments, determine if a reactive syphilis serology represents a new infection or a previously treated infection. DIS may contact the patient to ask about sex partners who may have been exposed to syphilis. If indicated, DIS will work with patients to determine how to locate and contact sex partners. While some patients are initially reluctant to provide this information, this step in the investigation is important to limit the spread of syphilis and other STDs.

For patients diagnosed with reportable diseases, clinicians can help by telling their patients that their infection is reportable and that the health department may contact them. Clinicians should ask patients to cooperate with these efforts to help stop the spread of syphilis in the community. This public health investigation may improve patient care by locating difficult-to-find patients (those "lost to follow-up") and by insuring that adequate treatment is given.

Data from disease case reports (with personal identifiers removed) are also submitted to the CDC, which collects information on notifiable diseases and injuries for disease surveillance and control in the United States. It is estimated that STD cases reported to CDC represent only 50%-80% of reportable STD infections in the United States, reflecting limited screening and low disease reporting.<sup>(12)</sup> Improved reporting by both clinicians and laboratories will increase the number and quality of case reports received by local health departments and by CDC, improving the accuracy of disease surveillance data in the United States.

Despite state laws, which typically require laboratories and clinicians to report reactive syphilis serologies to local health departments, this case may not have been reported. If the local health department had been contacted by the laboratory, a public health investigation may not have been initiated or conducted in a timely manner. Individual clinicians and laboratories need to be diligent about reporting diseases that are reportable in their state to the local health department.

Specific steps to reduce errors include:

- Ensure there is a mechanism for rapid identification and follow-up on positive screening tests.
- Insure that written protocols about the reporting process of state-mandated reportable diseases are available and updated as needed.
- Local health departments should provide laboratories and clinicians with reporting feedback through reports or newsletters, demonstrating how data collected from case reports are used to guide local disease prevention and control activities and how clinicians can use this information to guide clinical practice.
- Increase communication between local health departments and clinicians through updates at hospital grand rounds, medical conferences, and through medical societies and state licensing boards.
- Promote electronic laboratory reporting to facilitate more timely and accurate reporting where feasible.<sup>(13)</sup>

Part of the challenge is that most systems remain paper-based and reporting depends on clinicians knowing which diseases are reportable in the state, where reporting forms are located, and taking the time to complete and submit the required documents. An ideal reporting system might be based upon an electronic laboratory system that flags a positive lab result (eg, a high titer syphilis serology, or a positive gonococcal culture) then sends an electronic notice to the clinician requesting clinical information (including treatment given). This notice would also serve as a reminder that reporting is required. Ideally, an electronic reporting system would not rely primarily on the clinician or laboratory reporting the case but would notify the local health department at the same time the clinician was notified and would follow with the additional clinical and treatment information provided by the clinician. Ideally, an electronic system such as this would improve care for patients, assist the clinician with follow-up, and enhance efficiency and completeness of the public health surveillance system.

#### Take-Home Points:

- Obtain sexual histories, know the local STD epidemiology, and follow USPSTF and CDC guidelines for appropriate STD screening.
- Assure that there is a mechanism for rapid identification and follow-up on positive screening tests.
- Tell patients with a reportable disease that the local health department may contact them for additional information and encourage your patients to cooperate with this process.
- Exercise your public health responsibility to help prevent and control communicable diseases through appropriate patient screening, case reporting, and collaborative work with your local health department.

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#### Resources

U.S. Centers for Disease Control and Prevention *National STD Hotline* Provides anonymous, confidential information on sexually transmitted diseases (STDs) and how to prevent them. Also, provides referrals to clinical and other services. English - 800-227-8922 - 24 hours a day, 7 days a week Spanish - 800-344-7432 - 8 am to 2 am EST, 7 days a week TTY for hearing impaired - 800-243-7889 - Monday-Friday, 10 am-10 pm EST [DSTD@cdc.gov](mailto:DSTD@cdc.gov) [CDC's STD Treatment Guidelines](#) [National Network of STD/HIV Prevention Training Centers](#)

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## Figure

Figure. Example of Classic Syphilitic Rash



*This project was funded under contract number 75Q80119C00004 from the Agency for Healthcare Research and Quality (AHRQ), U.S. Department of Health and Human Services. The authors are solely responsible for this report's contents, findings, and conclusions, which do not necessarily represent the views of AHRQ. Readers should not interpret any statement in this report as an official position of AHRQ or of the U.S. Department of Health and Human Services. None of the authors has any affiliation or financial involvement that conflicts with the material presented in this report. [View AHRQ Disclaimers](#)*