Using Facebook to help trace and control the spread of an outbreak of syphilis

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Since the late 1990s new cases of HIV and syphilis have been increasing in men who have sex with men (MSM) in Canada, Australia, Western Europe and the U.S. Syphilis and other sexually transmitted infections (STIs) can injure tissues, resulting in inflammation and sores (sometimes painless) on or inside delicate ano-genital tissues, the mouth and throat. These sores can serve as entry points for HIV and other STIs, helping these infections to spread during sexual contact. If left untreated, the germs that cause syphilis—called treponemes—can spread to the brain, heart and other vital organs and nerves, causing damage.

Public health authorities in Milwaukee, Wisconsin, have been searching for ways to help augment traditional tools to identify people who may have been sexually exposed to someone with syphilis so that they can be offered counselling and screening for STIs and, when necessary, treatment. In this CATIE News bulletin, we report on the use of social media by public health authorities in that city to help trace, map and identify people connected to an outbreak of syphilis.

The rise of the Internet

Research has found that sexually active people, particularly MSM, are using the Internet to find sexual partners. The Internet offers several tools such as websites, advertisements, forums and smart phone applications (or “apps”) to facilitate the meeting of sexual partners.

Tracing a network

Milwaukee public health officials recently published a report of their use of Facebook in the journal Public Health Reports. In it they explain the term “partner notification” (a key aspect of tracing and finding people who may be part of an outbreak) in this way:

“The process of identifying the partners, suspects and associates of people diagnosed with [STIs] to notify them of their exposure to disease and to convince them to seek evaluation and treatment.”

Furthermore, they stated that “current methods of partner notification in the U.S. reach only about 14% [of the sexual partners of MSM].” The Milwaukee public health officials suggested that the reasons for this are as follows:

- anonymous partners
- insufficient location information
- limited rapport between interviewer and interviewee

Social media

Faced with the rise of the Internet, public health officials around the world have experimented with new ways of reaching people via Internet and smart phone technologies that involve social interaction and updating electronic information. The Milwaukee public health officials explained that social media tools include the following:

- downloadable products (buttons or badges)
- images, videos and news feeds (RSS, podcasts and widgets)
e-cards
blogs
messages sent via Twitter (tweets)
social networking sites (including Facebook)

Although sexual health researchers have used Facebook and the popular smart phone app Grindr (used by some MSM to meet other MSM) to conduct surveys, provide safer-sex information and encourage HIV testing, very few, if any of these studies, have published a detailed account of how they used Facebook to help identify people who may be connected to an outbreak of syphilis.

Public health workers in Milwaukee were frustrated by the inability of traditional methods—phone calls, field visits, mailing letters—to help them find people who may have been sexually exposed to people with syphilis. In interviewing the young men diagnosed with syphilis as part of managing that outbreak, the workers found out that some of these men had used social networking sites rather than general email for communication. Some of them disclosed the names of sex partners and public health officials proceeded to contact the sex partners via Facebook in addition to using traditional public health tools.

According to the Milwaukee team of public health officials, “A few of the young MSM in this cluster were unusually cooperative in naming partners, especially compared to older cases and contacts in numerous previous investigations.”

To enable contact, public health staff members established an account and profile on Facebook using a fake male name. According to the Milwaukee public health team, the profile established included a nickname and “links that emphasized general health promotion, not specifically related to [STIs] or the MSM community.” Also, they said that the Facebook “account settings eliminated the account from being detected by Internet search engines.”

Public health staff who used the Facebook account private-messaged selected members of their cases’ sexual and friendship networks “to call about an important issue regarding their health.”

When Facebook privacy settings were set by clients to block messages, public health staff “friended” designated or suspected members of their cases’ sexual and friendship networks. To protect the privacy of their cases, public health staff “friended” one client at a time as well as taking other steps.

**Inside the sexual network—syphilis**

As part of their effort to map the spread of syphilis, public health workers drew up a list of 55 possible sexual contacts of people who had already been diagnosed with syphilis.

The Public Health Department was able to investigate 37 of the 55 people with the following results:

- 17 people tested positive for syphilis
- 10 of these 17 men were co-infected with HIV
- 2 of the 17 men were co-infected with Chlamydia

Another 17 men tested negative for syphilis.

Public health officials were unable to investigate the remaining members of the cluster for the following reasons:

- unable to locate them
- they refused to be tested
- they lived in a place outside the jurisdiction of the health department
- there was unverifiable or false information provided by the cases

**Why was Facebook useful?**

The public health staff found that using Facebook was particularly helpful in the following ways:

- It allowed them “to reach partners more quickly than by telephone, thereby shortening the time to testing and treatment.”
• They were able to “contact individuals who change addresses and phone numbers frequently, but who consistently access and maintain their Facebook accounts, sometimes via computers at libraries or schools.”
• They could “identify individuals in person by viewing photos online.”
• It gave them access to “identifying friends and family who could help contact the individual within the cluster.”

Inside the sexual network—HIV

The public health team stated that it was able to uncover two new cases of HIV as a result of its syphilis investigation and social network mapping. Furthermore, in mapping the relationships among people within the syphilis cluster, the public health team stated that of one of these newly uncovered cases of HIV was “a key connector between otherwise unconnected parts of the syphilis cluster.”

Facial recognition

The Milwaukee public health team made the following statement about how useful Facebook was for them:

“While attempting to contact an individual named as a partner of another individual in the cluster, a healthcare worker sent several private Facebook messages. However, the individual did not respond to these messages. The healthcare worker viewed this person’s picture on his Facebook profile. Months later, the healthcare worker recognized the individual in the hallway of the STD clinic and expedited his testing and presumptive treatment for syphilis.”

The future

Partner notification is nothing new: For decades public health authorities in many countries have been asking for the names, addresses and phone numbers of sexual partners of people with syphilis (and other STIs) so that they can be contacted and offered screening and treatment. What is new in the era of widespread use of the Internet —where people can post or exchange photos and information of themselves—is that such information can be accessed by a wide range of people, including public health authorities. Such access is possible because electronic social networks are not as private as some users perceive.

Readers can see the potential for the use of social networking by public health authorities for tracing people who may be connected to each other through sex and for contacting them to offer HIV and STI testing and counselling and swift referral to treatment.

The Milwaukee team also made this statement:

“Because of increasing rates of syphilis and HIV in younger subpopulations that increasingly use social media to locate sexual partners, public health officials might consider whether to incorporate Facebook into partner notification for both infections.”

The Milwaukee team’s statement and findings may spur public health workers in other parts of the U.S. and in other countries to evaluate the use of social networking technologies as they try to curb the spread of STIs, including HIV. Hopefully, such future evaluations will include ethical review and oversight by people external to the evaluation.

—Sean R. Hosein

Resources

Syphilis – CATIE fact sheet

What the syph is going on? Responding to syphilis outbreaks in Canada – Prevention in Focus

Can social media help prevent the spread of HIV? – CATIE News

Using smartphone apps to learn about sexual behaviour – CATIE News

REFERENCES:

1. Sullivan PS, Hamouda O, Delpech V, et al. Reemergence of the HIV epidemic among men who have sex with


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