Using Facebook in Communicable Disease Investigations

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WDPH CD Meeting
Public Health Goal

• Prevention

• In sexually transmitted diseases (STD), via Disease Intervention

• Staff performing duties:
  Disease Intervention Specialist (DIS)
STD Partner Referral Services

• Services provided to partners of infected patients including:
  – intervention, prevention, referral, and education

• Disease Intervention achieved through referral and treatment of at-risk
  – sexual partners, suspects, and associates
DIS Training

• State staff and state-contracted (MHD) staff
• CDC STD Employee Module online training
  – Introduction to STD Interviewing
  – Syphilis visual case analysis training
• Face to Face training class
• Clinic and field training
  – In-house training while “shadowing” an experienced DIS including phlebotomy
  – Supervisor review of cases and observation in the field
252.03 Duties of Local Health Officers

• (1) Every local health officer, upon the appearance of any communicable disease in his or her territory, **shall immediately investigate** all the circumstances and make a full report to the appropriate governing body.

• (4) No person may interfere with the investigation under this chapter of any place or its occupants by local health officers **or their assistants**.
252.05 Reports of cases.

• **(1)** Any health care provider ... who knows ... that a person ... has a communicable disease ... shall report [it] ... to the local health officer. ...

• The local health officer shall report this information to [state] department or shall direct the person reporting to report to the department.

• **(2)** Each laboratory shall report ... results that indicate ... a communicable disease, ... or that the department finds necessary for the surveillance, control, diagnosis, and prevention of communicable diseases.
Methods of Partner Referral

• Provider Referral
  – Health Department
    • Assure treatment of original patient
    • Offer testing/treatment to sex partners, suspects, and associates
  – Other agencies assist health department
    • Family planning agency
    • Private MD office
    • Tribal health clinic
    • Military hospital/clinic
Methods of Partner Referral

• Patient (Self) Referral
  – Patient wants to take responsibility
    • to notify partners of exposure
    • refer their partners for testing/treatment
  – Assess patient’s ability to perform referral
  – Referral cards may be provided to patient
  – Patients may use inSPOT (www.inspot.org)
  – Patients may receive EPT (expedited partner therapy) Rx or meds for their sex partners
Disease Intervention in Wisconsin

• State and state-contracted staff (MHD SER)
  – Syphilis case management
    • Clinic and field interviewing and investigation
    • Co-infected cases: Syphilis and other STDs including HIV

• MHD
  – GC and CT* case interviewing and/or investigation (partner referral) for pts < 16 yrs or pregnant

• Local Health Department Staff
  – GC and CT case interviewing and investigation
Terminology in Contact Elicitation/Partner Referral

Original Patient
Client
Index Patient

Sex Partner (P1)
Contact

Suspect
(S1,2,3)

Needle Sharing Partner (P2)

Sex & Needle Sharing Partner (P3)

Associate
(A1,2,3)
Facebook-Augmented Partner Notification in a Cluster of Syphilis Cases in Milwaukee.


  - *Public Health Reports*
  - 2014;129 Suppl 1: 43-49.

  - [http://www.publiehealthreports.org/issueopen.cfm?articleID=3109](http://www.publiehealthreports.org/issueopen.cfm?articleID=3109)
Challenges of investigating clusters of communicable diseases

• Case identification and
• Partner notification for STDs
• Populations using social media rather than phone, postal mail, or stable residence to communicate

• Solution? Identify, link, & notify individuals via
  – Facebook and
  – Social network diagram illustration
Cluster definition

Individuals included in cluster

• if linked to index case as
  – Sexual **partner** named by case
  – **Suspect**, per report of an index case:
    • Symptomatic
    • Partner of case outside cluster
    • Pregnant females and roommates of case
  – **Associate**: like suspect, reported by non-infected person

• and if enough info to initiate an investigation
  – name, phone number, address, Facebook name
Social network of cases and contacts
Syphilis cluster with 17 cases

- Milwaukee, 2011–2012
- 55 individuals in cluster
- 51 known ages (17 cases)
  - 15–19 years 20 (6)
  - 20–24 years 25 (8)
  - 25-48 years 6 (3)
  - Median age 20 years
- 55 African American
- 51 Men who have sex with men (MSM)
  - 4 Women were not sexual partners of men
- HIV-positive
  - 10 of 17 index cases
    - 1 refused testing
    - 5 others in cluster
Partners, suspects, and associates

- 38 Partners named with enough information to initiate an investigation
- 11 Suspects and associates named
- 27 Partners, suspects, and associates treated

- 37 partners, suspects, and associates completed epidemiologic follow-up.
  - 17 positive for syphilis
  - 20 negative

- 18 lost to follow up
  - could not be located
  - refused clinical evaluation
  - out of jurisdiction
  - unverifiable or false information provided by cases
Performance measures (MHD goal)

• Contact rate = 67%
  – 17 infected individuals
  – + 20 tested negative
  – divided by 55

• Contact index = 2.2 (2.0)
  – 38 partners
  – divided by 17 cases

• Cluster index = 0.6 (0.5)
  – 10 suspects & associates
  – divided by 17 infected

• Treatment index = 1.6 (1.3)
  – 27 partners, suspects, and associates treated
  – divided by 17 cases

A few young MSM were very cooperative in naming partners, compared with older individuals in previous investigations.
Methods

- Early in cluster investigation, DIS staff found men used social networking sites for general communication and finding sexual partners.
- E-mail protocol (via inSPOT) passes messages thru third party: slow and less confidential
- MHD does not use text messaging for reporting test results or investigating contacts
Methods

• DIS set up Facebook account
  – Common male name in America
  – Moniker and links emphasized health promotion, not STDs or MSM community, not linked to health department.
  – Settings shielded account from internet searches
Methods

• Administrative oversight and approval obtained for
  – Sending Facebook messages to clients
  – “Call about an important issue regarding health.”
• Usually did not require a social network connection
• In a few cases, privacy settings blocked messages
  – DIS “friended” individuals in cluster to send message via inbox (not public wall posting)
  – “De-friended” after
    • Phone call from individual or
    • No reply to multiple messages.
• Some Facebook policy changes since 2012 make “friending” necessary
Methods

• “Friended” one individual at a time,
• Preventing social contacts (i.e., friends) of account from viewing a list of other friends of the account.
• Turned down all unsolicited friend requests
Role of Facebook in Investigation

• 2 of 17 cases identified solely because they were Facebook friends to another case

• 5 others of 55 in cluster: Facebook augmented traditional investigation methods
  – Named as Facebook contact 2
  – Located via Facebook 2
  – Notified via Facebook 1
Advantages of Facebook

• Reached contacts more quickly than by phone
• Physical addresses and phone numbers changed more frequently, than Facebook accounts
• Identify individuals in person by viewing photos online
• Identify friends and family who could help contact individual in cluster.
Limitations of Facebook

• Sporadic uses of Facebook account
• Lack of response to repeated messages
• Screen names obscure identity
• Privacy settings prevent finding contacts via online searches
Social network of cases and contacts

Key:
- □ Syphilis positive
- ○ Syphilis negative
- △ Syphilis status unknown
- ■ Facebook involved in investigation

1 HIV-positive
Size of shape = betweenness
Facebook in the social network

• 3 cases (squares) central to the social network had Facebook involved (solid) in their investigation.

• However, 1 HIV-positive, syphilis negative (circle) partner did not involve Facebook (open) yet was a key connector between otherwise unconnected parts of the cluster.
Conclusions of cluster investigation

• Use of Facebook was crucial in identifying
  – 2 of 55 individuals with syphilis

• Cooperation of socially connected individuals with traditional methods
  – high number of contacts per case
Role of social media in communicable disease investigations

• Does NOT replace traditional methods (TMs)
  – Phone calls, Clinic visits, Field visits
• Reaches some contacts that TMs do not
  – Younger, More socially connected
• Gives perspective on high-risk behaviors within social and sexual networks
Epi-logue

• Ongoing interactions btwn DIS & cluster members

• More testing because
  – Increased comfort with MHD program staff
  – More regular clinic visits for screening
  – Symptom recognition due to education

• Increased awareness within MSM community
  – Community organizations and partner

• 3rd/4th generation HIV testing
  – Coming soon to an STD clinic near you