



October 10, 2011  
Vol. 60, No. 20

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OREGON PUBLIC HEALTH DIVISION • OREGON HEALTH AUTHORITY

## SOCIAL NETWORKS, NOT JUST FOR AMWAY: FINDING UNRECOGNIZED HIV CASES

### SOCIAL, SCHMOICIAL!

Some people say that all illnesses are infectious; we just haven't yet identified the communicable agent for some. Can they be right?

In 2007, Christakis and Fowler demonstrated that obesity occurs in clusters defined by social networks and speculated on their potential for controlling obesity.<sup>1</sup> Recently, social networks have been implicated in smoking, eating, and alcohol consumption, heretofore "non-communicable" diseases all.<sup>2</sup> Of course, better understanding of social networks also looks to be pretty important in the epidemiology of infectious diseases. Social network theory has been used to identify likely connections among cases of tuberculosis with matching molecular "fingerprints" that were not identified by traditional approaches.<sup>3</sup> And, as we illustrate here, social networks seem useful in inducing people to get timely HIV testing.

We want to find new strategies for getting people HIV tested because this is the shortest route to preventing new HIV infections. Despite our efforts, only 42% (28% of people aged 18–24 years) of Oregon adults report *ever* having been tested for HIV.<sup>4</sup> Consequently, about 20% of all Oregonians with HIV — approximately 1,300 people — have yet to be tested. They don't yet know that they are infected. Unrecognized cases are estimated to be the source of more than half of the 250–300 new infections each year in Oregon, an incidence that hasn't changed appreciably in over a decade. Nearly 40% of all newly-diagnosed cases have severe immune deficiency that meets criteria for AIDS at or soon after the initial diagnosis, indicating that the person was infected 7 to 10

years earlier.<sup>†</sup> Diagnosing such infections even a few years earlier gains valuable opportunities to initiate treatment leading to a longer, healthier life and reduced likelihood of transmitting HIV to others.

### SOCIAL NETWORKING FOR TIMELY HIV DIAGNOSIS

Oregon has been experimenting with social networking approaches to find undiagnosed HIV infections. The Centers for Disease Control and Prevention (CDC) demonstrated the utility of a Social Network Strategy (SNS). Through monetary incentives and the currency of personal relationships, recruiters encourage their friends, sex partners, injection-drug sharing partners or anyone in their social network who might not know his or her HIV status to get tested.

During 2003–2005, 422 CDC SNS demonstration project recruiters identified 3,172 network associates — second-order recruits. Of these, 177 (5.6%) tested HIV-positive. Proportions of positive tests were highest among network associates who identified themselves as men who have sex with men (12.4%), injection-drug users (14.9%) or high-risk heterosexuals (4.4%). Overall, the 5.6% prevalence of previously unrecognized HIV infection among network associates was five-fold greater than the average HIV prevalence found in traditional public HIV counseling and testing sites.<sup>5</sup>

### SNS IN OREGON

Local health departments prioritize three risk groups for HIV testing — men who have sex with men, people who use injection drugs, and partners of people living with HIV — but often have difficulty engaging them successfully. In rural areas men who have sex with men can be reluctant to disclose

their sexual orientation to local health departments out of fear of discrimination. An 'outreach to testing' program, in CDC parlance, SNS offers a potentially effective way to increase the number of high-risk people who elect to be tested for HIV.

In 2009, six local health departments in Oregon implemented SNS to encourage testing. They offered gift cards to successful recruiters and network associates who came in for testing, trained staff to implement the projects, and collected and recorded project results.

### RESULTS

Oregon results have been dramatic in one instance and inconclusive in others. As of this month, County A and its prevention partner had signed up 46 recruiters, who in turn recruited 110 network associates. Of 111 recruiters and network associates tested, astonishingly, 10 (9%) tested positive with previously undetected HIV infections. All of these new positives occurred within 6 recruiter-networks. (See diagram, *verso*.) Everyone with newly positive tests has been referred for medical treatment, partner counseling and prevention services. These 10 positives turned up by SNS are the only new positives yet known to have been identified via this approach; no new positives have been identified via SNS in the other 5 counties. Overall, 5% of people tested using SNS were newly positive. (See table, *verso*.)

### DISCUSSION

A number of factors could be related to the success of SNS in Oregon. County A's prevention partner has been pairing SNS with another HIV prevention intervention that emphasizes role models/peer leadership in HIV prevention. This prevention approach may have helped normalize County A's peer-to-peer model of outreach to HIV testing and laid the groundwork for SNS to be successful. In addition, the prevention partner has a very good reputation as a service provider, and recruiters may have felt more comfortable referring their clients to them for HIV testing.

\* <http://public.health.oregon.gov/BirthDeathCertificates/Surveys/AdultBehaviorRisk/bfrsresults/09/Documents/hiv.pdf>

† <http://public.health.oregon.gov/DISEASES/CONDITIONS/COMMUNICABLEDISEASE/DISEASESURVEILLANCEDATA/HIVDATA/Pages/index.aspx>



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**Table. Provisional results of Social Network Strategy for outreach to HIV testing in six Oregon counties, as of October 2011. Two counties have partnered and are listed as one.**

County	Recruiters	Network Associates*	HIV Tests	New Positive Tests	% new HIV cases**
A	46	110	111	10	9
B	61	18	79	0	0
C	3	1	2	0	0
D	7	10	2	0	0
E	0	0	0	0	0
<b>Totals</b>	<b>117</b>	<b>139</b>	<b>194</b>	<b>10</b>	<b>5</b>

\*People recruited for testing by the recruiter. \*\*Among network associates tested. Note these figures were updated 11/4/11.

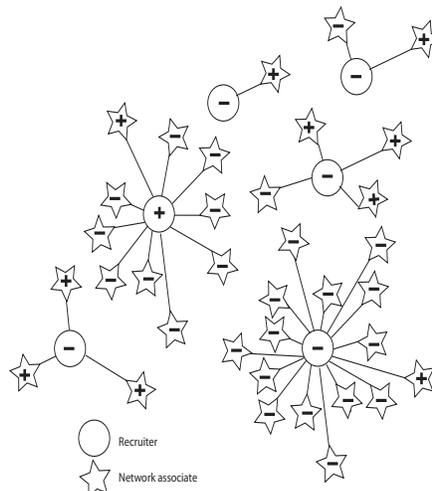
Counties that haven't yet had the same success experienced in County A have struggled with staff turnover and capacity. Others have also had challenges in connecting with a recruiter pool. Another found it difficult to make connections between the testing location and the SNS coordinators.

In addition, perhaps achieving a desired health outcome is not as simple as striking the match and letting the network fires rage. The complex dynamics of social networks have been illustrated among adolescents who pledge virginity until marriage. Such pledges do appear to result in relative delays in timing of sexual debut, a good thing. However, rates of STD's among this same group don't similarly decline.<sup>4</sup> Investigators speculate that social networks that encourage such a pledge are less likely to promote condom use or a health-protective understanding of STD risks. These factors might increase the risk of STD transmission when youth ultimately do become sexually active. Perhaps similar complexities need to be under-

stood and addressed to get maximal benefit from social networks where HIV testing is concerned.

Despite these challenges, most remain optimistic about the potential for SNS to help reach the estimated 1,300 Oregonians living with HIV who are unaware of their HIV status.

**Figure. Social networks and HIV testing in County A, as of October 2011**



**ACTION STEPS?**

Okay, we agree. This issue tends mostly toward the informational. We assume that you *do* have a social network, and we *do* hope you'll use it to encourage others to be screened for HIV. Professionally, remember that every adult should be screened at least once for HIV and more often if risks emerge. Do your part to increase the proportion of your patients tested for HIV. Encourage your patients to encourage the members of *their* networks to be tested. Remember that more timely diagnosis of HIV helps prevent additional cases.

**FOR MORE INFORMATION**

Regarding HIV in Oregon: <http://public.health.oregon.gov/DISEASES/CONDITIONS/DISEASESAZ/Pages/disease.aspx?did=61>

Regarding Social Network Strategy contact Loralee Trocio at [ljtrocio@dhs.state.or.us](mailto:ljtrocio@dhs.state.or.us)

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