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The Syphilis Elimination Project: Targeting the Hispanic Community of Baltimore City

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ABSTRACT ***Objective:*** The objective of the Syphilis Elimination Project was to decrease the incidence of syphilis in the Hispanic community of Baltimore City through a culturally appropriate health initiative. ***Design:*** Both qualitative and quantitative methods were used in the study design. Surveillance data were used to collect testing information. Comparisons at the start and end of the project measured change in individual knowledge about syphilis. Cross-sectional data from interviews with business owners and qualitative comments from outreach workers evaluated perception of program effectiveness. The local health department collected surveillance data. ***Sample:*** A convenience sample of 63 Hispanic community members, 12 business owners/managers, and 8 outreach workers was utilized throughout the evaluation process. ***Intervention:*** The project was a culturally appropriate approach to health promotion with street and business outreach. ***Results:*** Post intervention there was a statistically significant increase in knowledge about syphilis within the Hispanic community and an increase in testing behaviors. ***Conclusions:*** The Syphilis Elimination Project was created in response to a marked increase in syphilis in Baltimore among the Hispanic population and a health disparity that existed within the city. It increased community members' knowledge of syphilis and positively influenced testing behaviors.

Key words: community-based intervention, Hispanic community, PRECEDE model, program development, program evaluation, syphilis.

The Hispanic population is increasingly an important group to target when addressing the health of the United States population. As the largest minority, Hispanics now make up 14.5% of the population (United States [U.S.] Census Bureau, 2006a), and the Census Bureau predicts that about one out of every four persons in the United States will be of Hispanic ethnicity by the year 2050 (U.S. Census Bureau, 2004). In Baltimore City, the Hispanic community is just beginning to mirror the national trend. Latest data collected by the U.S. Census Bureau estimate that there are 13,887 Hispanic persons in

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Baltimore City, comprising 2.3% of the Baltimore City population (U.S. Census Bureau, 2006b). However, community leaders believe that the Baltimore Hispanic population could be larger than 50,000, or 8% of the city's total population (Solera, Barcelona, Parajon, & Sacks, 2000). The discrepancy between these figures may be due to the inability of the census data to accurately account for the undocumented population.

The Syphilis Elimination Project was developed in response to a marked increase in the incidence of syphilis in Baltimore City and disproportionately within the Hispanic population. When primary and secondary rates of syphilis from the first two quarters in 2004 were compared with those in 2003, there was a 40% increase in the incidence citywide, with a 73% increase in the Hispanic population (Baltimore City Health Department, 2004). The majority of all Hispanic cases were primary infections, indicating a serious public health threat.

In response to this syphilis outbreak, a citywide Syphilis Elimination Project was developed. This paper will describe one component of this project where community leaders from governmental, academic, community-based, and business organizations formed a partnership to develop, implement, and evaluate a program and intervention that specifically targeted the growing and new-to-Baltimore Hispanic community.

Theoretical framework

The development of the Syphilis Elimination Project was formulated after a community assessment was conducted that used the PRECEDE planning model. The PRECEDE model is a framework to identify and prioritize risk behaviors and gaps in services, with the goal of developing interventions that target modifiable factors. PRECEDE is an acronym for Predisposing, Reinforcing and Enabling Constructs in Education/Environmental Diagnosis and Evaluation (Glanz, Rimer, & Lewis, 2002). Following the framework, the Syphilis Elimination Project was able to identify multiple risk factors that predisposed, reinforced, and enabled the spread of syphilis within the Hispanic community through key informant interviews. For example, community experts identified community members' lack of awareness and knowledge of syphilis as a predisposing risk factor and lack of access to health care as an enabling factor in the syphilis outbreak. The sensitive nature of discussing sexuality transmitted infections was also noted as a potential barrier to seek testing (see Fig. 1).

The community intervention was then developed to address modifiable sociocultural, behavioral, and environmental factors contributing to the syphilis outbreak. Additionally, having this cultural and community-specific knowledge allowed the intervention to maximize community strengths.

Program development

The purpose of the Hispanic Syphilis Elimination Project was to respond to a community health need by addressing the outbreak in a culturally appropriate way. The project used the Logic Model as a way to determine resources/inputs, organize the services, and easily evaluate the project. The logic model showed how links between available resources could be used to develop program activities. It was also used to demonstrate a clear progression of how program activities would lead to project goals and objectives (see Logic Model, Fig. 2).

Project goals and objectives

Goal 1. The project's main focus was to increase community knowledge and awareness of syphilis to decrease the incidence of syphilis in the Baltimore Hispanic community.

Objectives: The following would occur during the 10-week project:

1. Provide syphilis outreach to 400 Hispanics in the targeted community.
2. Increase the knowledge of syphilis preventive behaviors and where to go for services within the Hispanic community as measured through Outreach Worker Questionnaires, Business Contact Interviews, and the Outreach Encounter Log.
3. Increase the number of Hispanics tested for syphilis by 50% over baseline as measured through reports from the local health department.

Goal 2. Create an effective, culturally appropriate framework to address the syphilis outbreak within the Baltimore City Hispanic community.

Objectives: The following would occur before the initiation of outreach:

1. Develop culturally appropriate materials in Spanish with information about syphilis and local resources.
2. Identify 10 businesses and 5 organizations in the community to serve as resources for the weekly dissemination of information to the community.

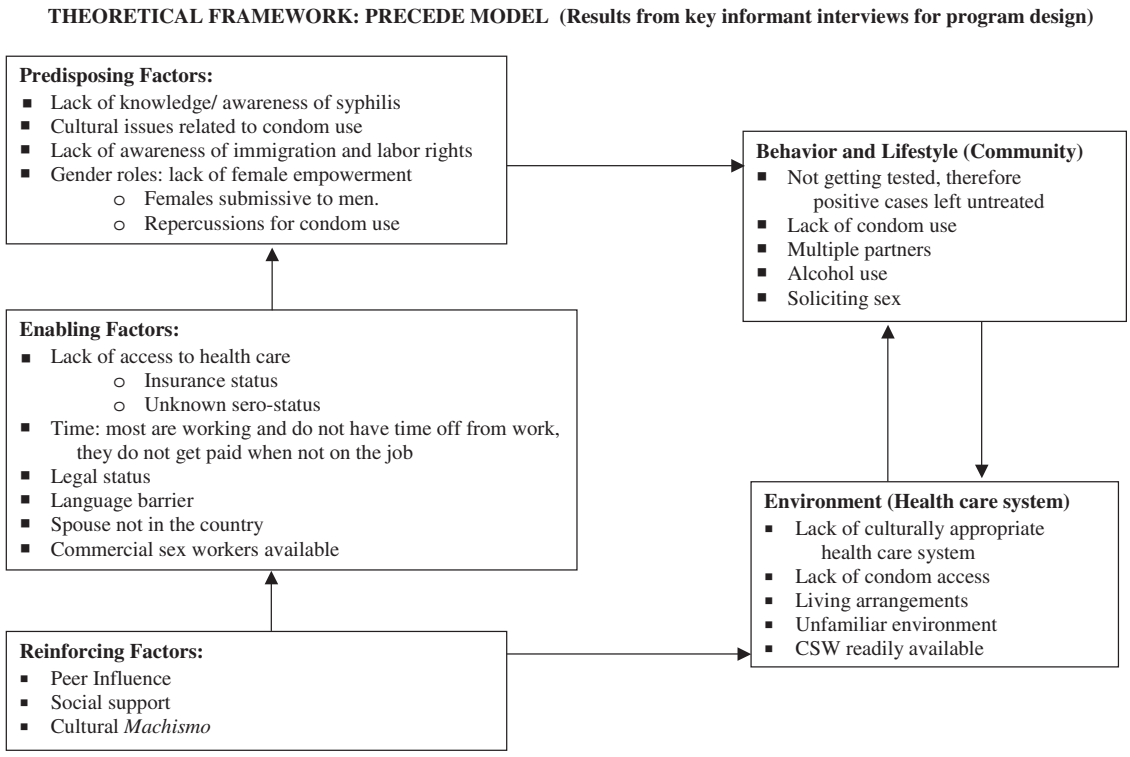

Figure 1. Factors Contributing to Syphilis Outbreak in the Baltimore City Hispanic Population

3. Develop a specific culturally competent training for health care and outreach workers to provide syphilis education in the Hispanic community.
4. Train 10 syphilis community outreach workers to perform outreach according to project definition and culturally sensitive standards.

Program implementation

Outreach worker recruitment and training. Bilingual health professional students and volunteers were recruited from local academic institutions to be trained as outreach workers. All trained outreach workers were either registered nurses or students in nursing, medicine, or public health fields. Training consisted of a 3-hr workshop prepared and administrated by a national expert in syphilis from the Centers for Disease Control and Prevention. The training was then followed by a 4-hr practicum experience. Given the sensitive nature of discussing sexuality in public, the volunteers shadowed an experienced outreach worker in the field to gain experience.

Development of culturally appropriate health education material and marketing strategy. Posters, pamphlets, handbills, and t-shirts worn by outreach workers were the materials used throughout the program. All materials had an image of a Latino couple with the following message: "*La syphilis, una enfermedad peligrosa pero curable*" ("syphilis, a dangerous but curable disease") on a bright yellow background. With the exception of the t-shirts, all materials included information about testing and treatment services locally available within Baltimore City. Consistency was intentionally incorporated into the marketing strategy with the hope that community members would begin to recognize the project and associate the posters around the community with outreach workers and testing sites.

The outreach efforts included a street and business outreach program

Business and organization outreach. The project partners initiated intentional recruitment conversations with local businesses and community organizations to encourage and elicit their participation in the Syphilis Elimination Project. Businesses and organizations were identified as gatekeepers to the Hispanic community because these organizations were already established as trusted community resources. With the participation of the community

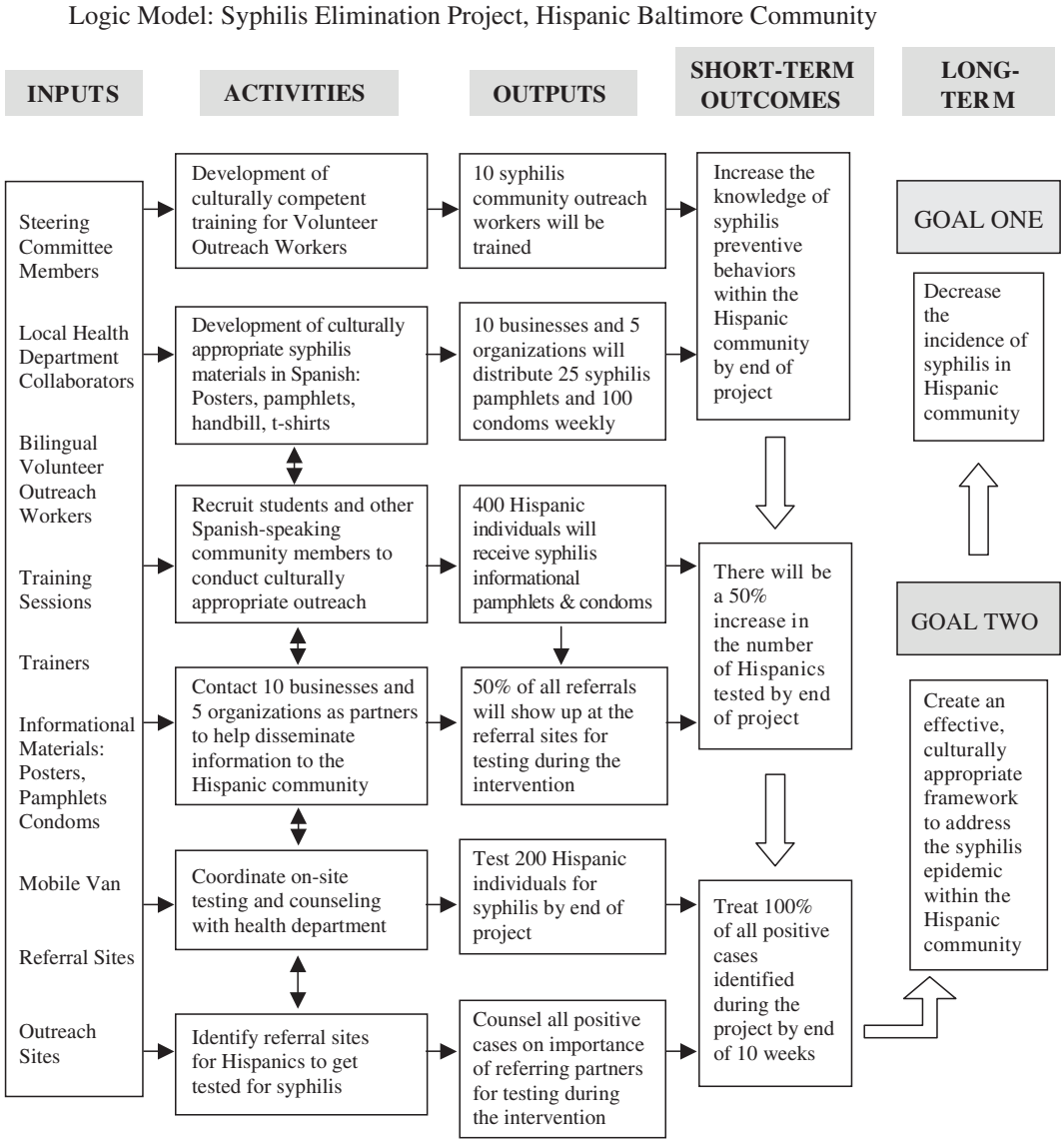

Figure 2. Logic Model

businesses, it was planned that messages conveyed in collaboration with the businesses would have greater potential to reach the targeted audience. In addition to providing the business owners and personnel brief education sessions about syphilis, they were asked to be active participants in outreach efforts. They agreed to have a basket of condoms and syphilis information brochures available to their clients and to have educational materials posted on the walls, in windows, and bathroom stalls. Outreach workers visited participating businesses and their owners on a weekly basis to keep them updated with project activities and to refill their baskets with condoms and health education literature. To be community inclusive, other community organizations already working with the Hispanic population were also contacted, informed, and then updated about the current syphilis epidemic and the project activities.

Street outreach. After building community consensus and initiating community participation, the task of developing a street outreach intervention was the next step. The project defined street outreach as outreach workers educating individuals on the street, in bars and stores about syphilis as well as handing out condoms and literature, free of charge.

Education included general background information about syphilis, routes of transmission, prevention methods, and information on STI/syphilis service sites.

In order to reach the population that was increasingly at risk for this syphilis epidemic, geographical areas and community events where the population would be found were identified, and the outreach intervention was initiated. Outreach workers conducted the intervention during evening hours (6 p.m.–10 p.m.) and in early mornings (6 a.m.–9 a.m.) in high traffic areas to maximize community visibility and reach out to the largest number of community members during "working" and "partying" hours as identified by key informants. Staff from the local health department was present during each outreach activity and provided testing and counseling services through a mobile van unit that was located in the targeted neighborhood. The project outreach workers guided individuals to get tested on-site, as it was readily accessible. If they were unable to use the mobile van, referrals were provided for the other free syphilis testing sites regardless of the individual's insurance or legal status. While the project targeted the Hispanic population, it did not discriminate, providing outreach to everyone in the targeted areas over the 10-week period.

Testing and treatment

All positive cases were treated and followed up by the local health department.

Evaluation

Process evaluation methods

The process evaluation monitored the implementation of the program activities. Training sign-in sheets, Outreach Worker Encounter Logs, business/organization contact lists, and business owner interviews were used to collect the process evaluation information. The Outreach Encounter Log was completed by outreach workers on the first two and last two Fridays of the project to record the number and of individuals each outreach worker talked to on a given outreach activity. The business/organization contact lists maintained a list of businesses participating in the program. Interviews with business owners were conducted during the last 3 weeks of the project to determine the level of business activity.

Process evaluation results

A total of 31 students and volunteers were trained to be outreach workers. All 31 participated in outreach activities; however, 7 of these outreach workers were considered "consistent" participants. Consistent participation in the project activities signified that they had attended at least four outreach dates. Outreach workers using the Outreach Encounter Log estimated that over 1,200 individuals were given pamphlets, condoms, and educated about syphilis during street outreach. However, only 8 of the 31 outreach workers responded to the questionnaire; therefore, this is probably an understatement of the actual number of individuals who were exposed to the street outreach activities.

A total of 17 businesses and 7 organizations participated in business outreach. Twelve business owners participated in the final project interview. Of the 12 business owners interviewed, 10 indicated active participation in outreach efforts. These business owners placed posters on bathroom stalls, windows, and walls, made syphilis information pamphlets and condoms available to their customers, and encouraged their clients to take these materials.

Each business distributed approximately 25 pamphlets and 100 condoms to their costumers each week, thus significantly increasing the number of individuals who were reached through the project. Although organizations were made aware of the syphilis elimination project, they did not directly participate in the outreach activities of the project.

Through street and business outreach over the 10-week period, an estimated 2,825 Hispanics received syphilis education and materials. An even greater number of community members received condoms but because the project defined "outreach" as having an educational component, this number was not used to estimate the number of individuals who were exposed to the project.

Outcome evaluation methods

The primary focus of the outcome evaluation was to assess the impact that this community-based intervention and partnership had on the Hispanic community's knowledge of syphilis. Evaluation data were triangulated by gathering information from community members, business owners, and outreach workers as a method to monitor for consistency in trends and evaluate program efficacy.

Community members' knowledge of syphilis, of prevention, of transmission, and location of service

sites for testing was measured though a systematic sample of every tenth individual encountered and recorded on the Outreach Encounter Log by outreach workers. The results from the first 2 weeks of the outreach encounter log were compared with the last 2 weeks to assess changes in knowledge. Before and after levels of knowledge were based on responses from different individuals, and separate Fisher Exact Tests were run for each category of knowledge to determine whether changes were significant. The Outreach Worker Questionnaire was also used to record observations made by outreach workers using quantitative and qualitative questions regarding their experiences.

Finally, the interviews conducted with the owners of the participating business establishments asked questions about their knowledge of sexually transmitted diseases, their level of participation in the project, and their perceived effectiveness of the intervention. Although interviews with community businesses were only conducted at the conclusion of the project, the owners were asked to comment on their level of knowledge about syphilis before and after their project participation.

Surveillance data collected by the local health department were used to measure the percent increase in the number of Hispanics being tested for syphilis. Because the health department was primarily responsible for the follow-up of positive case, information related to the follow-up and treatment of positive cases is not available.

Outcome evaluation results

At the end of the 10-week project, there were improvements in the targeted intervention group's knowledge of syphilis and related services. Results from the Outreach Encounter Log showed that at the beginning of the project ($n = 27$), 82% of the individuals interviewed had no knowledge of syphilis or its prevention and transmission, and 78% did not know where to go for health services. Only 4% could identify prevention methods (i.e., condom use, abstinence) or locations for testing. In contrast, during the last 2 weeks of the project ($n = 36$), 64% of the individuals had at least some basic knowledge of syphilis, 50% had knowledge of its prevention and transmission, and 64% knew of services available to them. A three-level scale was used to assess behavior change: *no knowledge*, *basic knowledge*, and *good knowledge*. During the last 2 weeks of the project, statistically significantly fewer individuals had no knowledge of syphilis ($p < .001$), its prevention and transmission ($p < .001$) and where to go for testing and treatment services ($p = .001$), and statistically significantly more individuals had "good" knowledge about syphilis ($p = .009$), prevention and transmission ($p = .033$), and could identify service sites ($p = .017$) (see Table 1). Qualitative data from outreach worker questionnaires supported these changes. Comments such as "more community members we encountered at the end of the 10 weeks were well informed about syphilis and had already been tested as compared with the beginning of the project" were recorded in their final questionnaires.

Members of the business community also showed an increase in knowledge about syphilis. However, these respondents started with a higher baseline level of knowledge regarding prevention, treatment, and service access. For these participants, the greatest increase in knowledge was in the area of prevention

TABLE 1. *Results from the Outreach Worker Encounter Log: Changes in Syphilis Knowledge Among Hispanic Individuals*

Outreach worker encounter log	Before ($n = 27$) (%)	After ($n = 36$) (%)	p value
General knowledge about syphilis			
No knowledge	82	33	.000
Basic knowledge	15	33	.144
Good knowledge	4	31	.009
Prevention/transmission			
No knowledge	82	28	.000
Identifies syphilis as an STI	15	25	.352
Identifies at least one form of prevention	4	25	.033
STI/syphilis service sites			
Unaware of services	78	33	.001
Knows that services exist	19	36	.164
Can identify service sites	4	28	.017

Note. STI = sexually transmitted infection.

TABLE 2. *Results from the Interviews with Personnel or Owners of Local Businesses: Changes in Knowledge and Levels of Participation Among Personnel and Owners of Participating Businesses*

Business interview question results (n = 12)	Yes	No
Before this project . . .		
Had you ever heard of syphilis?	7 (64%)	4 (36%)
Did you know that syphilis was a STI?	7 (58%)	5 (42%)
Did you know that syphilis was a problem for the Baltimore community?	7 (58%)	4 (33%)
Did you know how to prevent syphilis?	8 (67%)	4 (33%)
Did you know that syphilis could be easily treated and cured?	8 (67%)	4 (33%)
Did you know where to go to access free testing and treatment for syphilis?	5 (45%)	6 (55%)
Current knowledge . . .		
That syphilis is a STI?	8 (67%)	4 (33%)
That syphilis is a problem for the Baltimore community?	9 (75%)	3 (25%)
That it could be prevented through condoms or abstaining from sex?	12 (100%)	0 (0%)
That syphilis could be easily cured through medication?	9 (75%)	3 (25%)
That there are places where Hispanics can access free syphilis services?	9 (75%)	3 (25%)
Level of participation . . .		
Placing posters on windows, walls, or bathroom stalls	11 (92%)	1 (8%)
Making pamphlets available to customers	12 (100%)	0 (0%)
Making condoms available to customers	12 (100%)	0 (0%)
Encouraging customers to take pamphlets and condoms	12 (100%)	0 (0%)
Educating customers about syphilis	6 (50%)	6 (50%)

Note. STI = sexually transmitted infection.

methods and service sites. At the beginning of the project, 8 of 12 (67%) of the businesses interviewed reported knowledge of syphilis prevention and 5 of 11 (45%) were able to identify services available to the community. At the conclusion of the project, all (n = 12) of the individuals from local businesses who were interviewed had identified prevention methods and 9 of 12 (82%) knew where Hispanics could access free services for treatment or health care (see Table 2). These changes in knowledge were supported by qualitative data collected in the Outreach Worker Questionnaire. One outreach worker said, "I felt as we did more outreach, they (community) became more and more aware of syphilis and were intent on getting the word out themselves—they had spoken to friends, told customers about it."

A total of 244 Hispanic persons were tested during the 10 weeks of the project. Previous data collection instruments from the local health department did not have an ethnicity field for Hispanic; therefore, there is a gap in the baseline data. The total number of individuals (all races and ethnicities included) tested for syphilis in the 10 weeks before the intervention in Baltimore City was 93. While the exact increase in testing behaviors for Hispanics is unknown, there was a 162% increase in rates of Hispanics being tested during the 10-week intervention compared with the general population in the 10 weeks before the intervention. Further research would likely show a significant positive outcome if data were available.

Limitations

There were selected limitations in this project. One major limitation of the project was that it was labor intensive. As stated earlier, the project had 31 outreach workers and the project required a minimum of 8 workers to be available during evening hours and early mornings in order to be visible within the community. Without continuous outreach efforts, business outreach lacked sustainability. Businesses did not have the resources to maintain their levels of participation, i.e., access to free condoms and health education materials.

In addition, as the project was completed in collaboration with a citywide project to address syphilis, the results of the evaluation presented in this paper cannot be separated from the effect of the citywide project activities.

Conclusions

The Syphilis Elimination Project was created in response to a community assessment that illuminated both proximal and distal determinants of the syphilis

outbreak through the PRECEDE model. This thorough assessment identified community circumstances as well as potential barriers that the program could have unintentionally created.

The program followed a logic model that showed a clear progression of how inputs and services could maximize community strengths and ultimately lead to final goals. It allowed for concise methods to evaluate the intervention from the start of planning

However, the true success of the program was a result of a commitment by community leaders to form a partnership between public and private agencies with the goal of addressing a public health need within the Hispanic community of Baltimore City. The strong partnership enabled the project to be developed in a culturally sensitive manner to bring a sensitive issue to the front of the community's awareness. Discussing sexuality and sexuality transmitted infections, in particular, causes embarrassment and having the disease carries shame. However, it appeared, with local community support and information, people in the community understood what to do to prevent the infection, and where to get diagnosed, and treated.

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