Responding to a Syphilis Outbreak through Collaboration with Public and Private Partners

Genesee County, Michigan, 2008-2009

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BACKGROUND

Genesee County located in lower northeast Michigan, with a population of 428,700, is the fifth most populous county in the state representing 6.1% of the state’s population. Flint, with a population of 102,446 which approximately 23.9% of the county’s total population, is the urban and geographic center of the county. Approximately 39% of the county’s population is non-white and 19% are African-American. Sixty-eight (68%) of Genesee County’s African-American population resides in the City of Flint2. In 2009, unemployment rates (Genesee County vs. Flint) and poverty rates were higher than the state and nation. Genesee County (14.0%) is higher than Genesee County as a whole. Neighborhoods in inner Flint, now designated as a Federal Community Enterprise Zone, suffer even higher levels of poverty. Significant racial disparities in health have been seen among residents of Genesee County with African Americans suffering poorer health. The Genesee County Health Department (GCHD) is a grantee of the Centers for Disease Control and Prevention (CDC) Racial and Ethnic Approaches to Community Health Across the United States (REACH U.S.) national program aimed at eliminating racial and ethnic health disparities in the United States.

The GCHD administers over 40 services and programs in the areas of clinical, community, and environmental health with a staff of approximately 130. The vision of the GCHD is “Better Life Through Better Health” and the three long term outcomes outlined in the GCHD’s 2008 – 2012 strategic plan are to prevent chronic disease, prevent infant mortality, and prevent communicable disease, especially sexually transmitted disease.

Although Genesee County has consistently experienced a very high burden of syphilis and other sexually transmitted diseases (STDs) in the last 20 to 30 years and has been plagued by higher unemployment than Genesee County as a whole. Neighborhoods in inner Flint, now designated as a Federal Community Enterprise Zone, suffer even higher levels of poverty. Significant racial disparities in health have been seen among residents of Genesee County with African Americans suffering poorer health. The Genesee County Health Department (GCHD) is a grantee of the Centers for Disease Control and Prevention (CDC) Racial and Ethnic Approaches to Community Health Across the United States (REACH U.S.) national program aimed at eliminating racial and ethnic health disparities in the United States.

In March of 2008 the GCHD was notified by MDCH that an infectious syphilis outbreak was occurring in the City of Flint. The DIS began seeing an increase in cases and the MDCH Sexually Transmitted Disease epidemiologist confirmed the outbreak. It was decided that CDIRT would lead the outbreak investigation and response and MDCH would serve as an adjunct to provide support and guidance. CDIRT members included the Adult Clinic coordinator, the health educator from the Community Health Division, coordinators from the REACH U.S. program, and staff from HIV Partner Counseling and Referral Services.

METHODS

In March of 2008 the GCHD was notified by MDCH that an infectious syphilis outbreak was occurring in the City of Flint. The DIS began seeing an increase in cases and the MDCH Sexually Transmitted Disease epidemiologist confirmed the outbreak. It was decided that CDIRT would lead the outbreak investigation and response and MDCH would serve as an adjunct to provide support and guidance. CDIRT members included the Adult Clinic coordinator, the health educator from the Community Health Division, coordinators from the REACH U.S. program, and staff from HIV Partner Counseling and Referral Services.

OBJECTIVES

1. Reduce the rate of infectious syphilis among the sexually active community
2. Initiate collaboration between the Michigan Department of Community Health (MDCH) and the Genesee County Health Department (GCHD) to maximize public health resources
3. Continuously monitor and analyze case data and information to establish targeted interventions
4. Educate the public about the outbreak
5. Inform and routinely update the private medical community about the outbreak and engage them in the effort to control the outbreak through increased and targeted screening and patient education
6. Utilize public health partners including community organizations and businesses to assist with public health campaigns

RESULTS

As communications and targeted interventions grew, more infectious syphilis cases were discovered, and eventually these led to a decrease in syphilis cases rates (Figure 1). In 2009, cases decreased almost 80%.

Data analysis throughout the outbreak revealed that the outbreak transitioned from an older population to a younger population (Table 1). The populations primarily affected were heterosexual and African-American (Table 2). High risk behaviors including anonymous partners and substance use were prevalent among cases. Of the 82 cases, 57 (7% were located in the city of Flint and geographic analysis revealed concentrations of syphilis morbidity within the city (Figure 2). Evaluation of at-risk individuals indicated that awareness of the outbreak and knowledge of syphilis increased subsequent to public health interventions. Before the targeted information campaigns, 47% of GCHD Adult Clinic clients reported knowledge of the outbreak compared to 77% afterwards.

CONCLUSIONS

The partnership between local and state public health was successful in managing an infectious syphilis outbreak. State public health is experienced at managing STD outbreaks and can offer guidance and expertise. Creating relationships with key individuals throughout the medical community have proven to enhance all public health interventions and communications. New partnerships established will continue the CDC intervention efforts.

Continuous examination of case data was crucial. The use of data to target public health messages to those at risk and those serving at-risk populations led to effective identification of cases, improving the epidemiological profile of the outbreak allowed for interventions to be redirected and new strategies formulated to target affected populations in a timely manner.

IMPLICATIONS

Collaboration among health department divisions as well as between local and state agencies and public and private partners is critical to stopping a syphilis outbreak successfully.

Table 1: Average Case Age

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Case Age</th>
<th>N</th>
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<tbody>
<tr>
<td>Jan-May</td>
<td>36.5 years</td>
<td>12</td>
</tr>
<tr>
<td>Jun-Aug</td>
<td>34.0 years</td>
<td>13</td>
</tr>
<tr>
<td>Jul-Sep</td>
<td>31.5 years</td>
<td>18</td>
</tr>
<tr>
<td>Oct-Dec</td>
<td>30.1 years</td>
<td>24</td>
</tr>
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</table>

Table 2: Epidemiological Data

<table>
<thead>
<tr>
<th>Gender</th>
<th>Male %</th>
<th>Female %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Race</td>
<td>White %</td>
<td>African-American %</td>
</tr>
<tr>
<td></td>
<td>10.12 %</td>
<td>87.86 %</td>
</tr>
</tbody>
</table>

1. U.S. Census Bureau, 2000 American Community Survey

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