Utilizing effective community engagement strategies to enhance the built environment by eliminating sanitary sewer overflows in an urban setting

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ABSTRACT
There are still up to 75,000 incidents of sanitary sewer overflows each year across the country (United States Environmental Protection Agency, 2014). Overflows of untreated sewage can compromise water quality, contaminate waterways and threaten public health. The National Institute of Environmental Health Sciences recommended areas for further research, which included studying methods and channels to translate research findings to the community and improving communication strategies, particularly encouraging community participation in research efforts (Srinivasan, O’Fallon, & Deary, 2003, p. 1446).

Following the Community Readiness Model (CRM), individuals from communities experiencing the greatest disparities regarding sewer overflow were interviewed to secure community attitudes, knowledge of efforts, and activities and resources with regards to sewer overflows. A mixed-model approach was adopted that included a conventional content analysis of the individual transcribed interviews. Findings validated our study hypothesis about the lack of community and leadership awareness of sewer overflows in areas where there has been limited community engagement. Based on the results of CRM’s qualitative scoring and thematic analysis process, appropriate and targeted intervention strategies can be developed to address specific community readiness levels in each individual community.

INTRO
Blueprint Columbus is the city of Columbus’ plan to eliminate sanitary sewer overflows by addressing the source of the problem mostly occurring on private property. Built environment is a current public health issue that refers to “all of the physical parts of which we live and work and encourages a healthier community” (Centers for Disease Control and Prevention, 2011, para. 1). Blueprint is an example of incorporating the built environment into the community. Strategies of the initiative include lining leaky residential sewer laterals, redirecting roof water runoff, installing green infrastructure, and a voluntary sump pump program.

OBJECTIVES
• Identify appropriate interventions per community to address sewer overflow based on the community’s readiness level
• Demonstrate how the Community Readiness Model can be used to address sewer overflow in a community.
• Describe the significance of determining a community’s readiness level before implementing built environment interventions.

MATERIALS & METHODS
Using the CRM framework, the following steps were conducted to assess specific community readiness levels regarding sewer overflow in each community:
• IRB Approval from the OhioHealth Institutional Review Board
• 6-8 people identified and interviewed within each community about their knowledge of sewer overflow & Blueprint Columbus
• Interviews transcribed via recordings from www.saveyourcalls.com
• Two sub-investigators scored separately, then agreed upon final scoring
• Overall stage of readiness evaluated for each community

RESULTS

Table 2

<table>
<thead>
<tr>
<th>Community Readiness Dimension Scores</th>
<th>Clintonville</th>
<th>Hilltop</th>
<th>Grandview</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Current Community Efforts</td>
<td>5.3</td>
<td>2.62</td>
<td>3.9</td>
</tr>
<tr>
<td>B. Community Knowledge of Efforts</td>
<td>3.6</td>
<td>2</td>
<td>2.83</td>
</tr>
<tr>
<td>C. Leadership</td>
<td>3.1</td>
<td>2.94</td>
<td>2.5</td>
</tr>
<tr>
<td>D. Community Climate</td>
<td>3.4</td>
<td>3.84</td>
<td>3.17</td>
</tr>
<tr>
<td>E. Community Knowledge of Issue</td>
<td>4.6</td>
<td>3</td>
<td>3.67</td>
</tr>
<tr>
<td>F. Community Engagement Plan</td>
<td>4.1</td>
<td>3.84</td>
<td>2.57</td>
</tr>
<tr>
<td>Overall Stage of Readiness</td>
<td>4.1</td>
<td>2.62</td>
<td>2.97</td>
</tr>
</tbody>
</table>

Key Respondents

- Interviews were conducted, transcribed, and scored, for the Clintonville, Hilltop, and Grandview communities.
- Demographics of the interviewees are shown below. The Linden and Livingston-James communities were slow to obtain interviewees and were not included in this analysis.

REFERENCES


