Community Assessment for Public Health Emergency Response (CASPER) in Green River District, Kentucky Final Report

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Background

The Green River District is comprised of seven counties located in Western Kentucky. The seven counties include Daviess, Hancock, Henderson, McLean, Ohio, Union and Webster. The population is 212,000. The Green River District Health Department (GRDHD) partners with a number of other community organizations to collaboratively conduct a comprehensive Community Health Assessment (CHA) on a three year cycle. This assessment and planning process is conducted using a methodology framework known as Mobilizing for Action through Planning and Partnerships (MAPP). MAPP is a community-driven strategic planning process which helps communities apply strategic thinking to prioritize public health issues and identify resources to address them. The MAPP process consists of four assessments, including Community Health Status Assessment, Community Themes and Strengths Assessment, Forces of Change Assessment, and the Local Public Health System Assessment.

GRDHD will use CASPER to inform parts of the MAPP assessment. CASPER is a tool and methodology promoted by the Centers for Disease Control and Prevention for conducting a post-disaster rapid needs and health assessment. It provides the ability to rapidly obtain accurate and timely data in a relatively inexpensive manner. This methodology utilizes multistage cluster sampling and is well suited to efficiently gather information from a random and representative sample of the population served by the GRDHD. Additionally it was seen as an opportunity to train GRDHD and outside volunteers on the CASPER methodology.

The objectives of this CASPER assessment

1. Inform the MAPP Themes and Strengths Assessment.
2. Inform the MAPP Forces of Change Assessment.
3. Increase visibility of the Green River District Health Department in the community.
4. Exercise ability to conduct CASPER, if needed for disaster situation.

GRDHD requested some technical assistance from Centers for Disease Control and Prevention (CDC) and Kentucky Department for Public Health (KDPH) to conduct the assessment. KDPH furnished field equipment for interview teams that included android based tablet computers that allowed field entry of data, safety equipment such as visibility vests and flashlights, backpacks, and clipboards. CDC personnel provided assistance in designing the CASPER sampling frame and data analysis guidance.

Methodology

GRDHD staff developed a standardized survey instrument prior to the assessment. The survey collected information on household perceptions of ability to access services, characteristics of the community, overall health concerns, strengths, and challenges or weaknesses within the community related to health and overall wellbeing. Response option cards were used as a visual for listing of possible response options for leading health problems, threats to health of the community, positive and negative occurrences impacting the community, and environmental concerns within the community. See survey instrument in Appendix A.

A two-stage sampling method was used to select a representative sample of households to be interviewed across the seven county district. In the first stage, 30 clusters (census block groups) were selected with probability proportional to the number of housing units within the census block groups according to the 2010 Census. During this selection of 30 clusters, three of the clusters were randomly

selected twice, meaning 14 surveys would need to be completed in those clusters. It appears there are only 27 clusters, but when you account for three clusters being selected twice there are 30 clusters and a goal of completing 210 interviews. In the second stage, interview teams quasi-randomly (systematically) selected seven from each of the 30 selected clusters.

Field surveys were planned to be conducted over a three day operational period, Thursday, Friday, and Saturday in afternoon and early evening hours. An operational period that included week days and a weekend were selected in an attempt to maximize the opportunity to reach residents when they were home. Three days of sampling were planned so every reasonable effort could be made to reach the randomly selected households. Field surveying was conducted during daylight hours only up to approximately 6:30 PM.

Field survey teams were recruited from GRDHD staff, volunteers from KDPH, volunteers from other local health departments, and public health graduate students from the University of Kentucky, University of Louisville, and Western Kentucky University. Volunteers and staff were assigned to one of 15 - two person interview teams. A two and a half hour just-in-time training on CASPER methodology, use of tablet computers for data collection, field safety, and interviewing techniques was conducted by GRDHD, KDPH, and CDC personnel at the beginning of the operational period on September 28th. Each team was issued field equipment, a GRDHD agency vehicle, and provided an assignment of one or two clusters. Detailed road maps and aerial photographs of each cluster were provided to survey teams. Teams would then travel to their assigned cluster and familiarize themselves with the cluster layout.

The use of block groups resulted in geographically large clusters that were challenging for teams to cover. Selection of the first household within each cluster was randomly chosen. Then each household was systematically selected based on the estimated number of households in that cluster or the number of road miles within the cluster. The goal number of interviews using the following formula – (total number of housing units/road miles in the cluster) / (# goal interviews 7) = n house. Teams would travel past the randomly selected starting point and then attempt to contact the nth house (e.g. if there were 200 households in the cluster and seven interviews needed, teams attempted to interview every 20th household). If the selected household was unavailable (minimum of 3 attempts to contact) or declined to participate in the assessment, teams then continued systematically from that house to the next (n^{th}) house on the street until a survey was completed.

In this example, n=11

The survey instrument was preloaded on to field teams' tablet computers using Epi Info Companion App for Android. Teams were provided paper copies of the survey for ease of reading and in case of computer failure in the field. Interview records from each tablet computer were synced to Epi Info 7 database which was used to perform weighted cluster analysis and to report data collected on households in the seven county district.

Findings

Interviews were completed at 185 households within the seven county district. The goal number of interviews was 210. Over the three days of sampling, interviews were completed at 185 households for a completion rate of 88.10% (185/210). Field teams approached and attempted to contact residents at an estimated 301 households. The CASPER had a contact rate (completed interviews/housing units where contact was attempted) of 61.46% (185/301). Interview teams were successfully able to reach a person at 225 of the attempted households for a cooperation rate of 82.22% (185/225). Most of the housing units visited were single family homes (88.4%). The remaining were apartments and condominiums (5.4%), mobile homes (5.1%) or other (1.0%). Interviews were obtained from all seven counties in the Green River District.

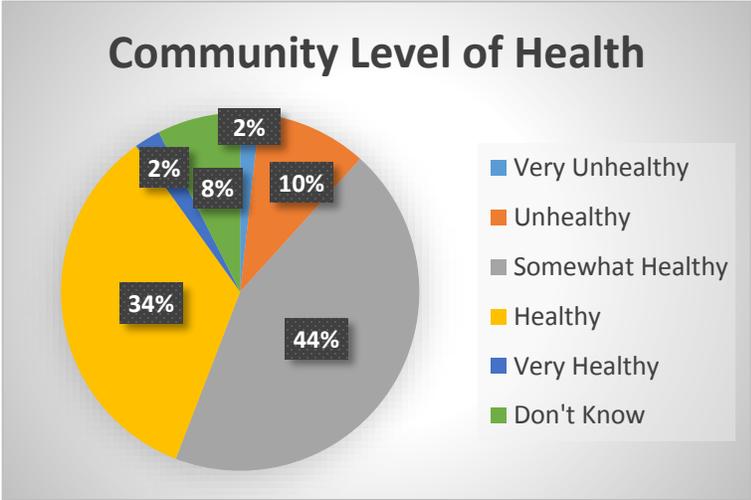|	
Completion Rate	88.10%
Cooperation Rate	82.22%
Contact Rate	61.46%

Survey Results

Analysis of all survey data including unweighted and weighted frequencies can be found in appendix A.

Overall, most of the survey participants rated their community's overall level of health as "Healthy or "Somewhat Healthy." The majority (44%) of households reported the health of their community as "Somewhat healthy" as opposed to 9.9% that rated their community as "Unhealthy".

Themes & Strengths Assessment

The next section of the survey gauged the household's level of agreement with a multitude of statements concerning quality of life, availability of services/activities, accessibility of services, community engagement, and community support. The consensus of this section was that households reporting "Agree" or "Strongly Agree" with the statement "My household is satisfied with the quality of life in our community" at 56.22% and 28.65% respectively.

Community Level of Health

- Very Unhealthy
- Unhealthy
- Somewhat Healthy
- Healthy
- Very Healthy
- Don't Know

(Pie chart values: 2%, 2%, 8%, 10%, 34%, 44%)

The MAPP Community Themes and Strengths Assessment helps to answer the questions: "What is important to the community?" "How is quality of life perceived in our community?" and "What assets do we have that can be used to improve community health?"

The bulk of the CASPER Survey consisted of a Likert Scale section that measured level of agreement with statements concerning quality of life, the health care system, available resources, and networks of support which advises the MAPP Themes and Strengths Assessment. Based on the survey results, overwhelmingly, households agreed (Agreed or Strongly Agreed) that our community is a safe place to live (85.6%), there are good support networks (79.46%), and neighbors know and trust one another (83.78%).

There was less consensus about assets in the community including satisfaction with the health care system; 34.59% of households were neutral or disagreed that the health care system was satisfactory. The availability of jobs in the community also received a lower rating with 42.70% of households having a neutral or a negative rating for availability of jobs.

When asking specifics about accessing healthcare, 85.41% of households reported everyone in their household had a healthcare provider that they see on at least an annual basis for check-ups. But 40 households or 21.6% of households surveyed admitted to delaying needed medical care at one point or another. The main reason for those households who had delayed care was due to cost (52.6% -- 20 of 37 who gave a reason for delaying care). Similarly, 75.9% of households reported receiving regular dental care including check-ups and cleanings. Less than a quarter (22.7%) of households reported not getting regular dental care and of those households, 53.95% stated cost/insurance as the barrier for seeking regular dental care, following by 18.77% who did not see a need for dental care.

Forces of Change Assessment

The final section of the survey consisted of lengthy lists of response options to assess opinions on current problems, behaviors, events, and changes that have or could have a negative effect on the health of the community. There was also a question to capture any positive changes or events that might improve the health of the community. The section was designed to inform the MAPP Forces of Change Assessment and was designed to allow for open ended responses and input if ideas were not captured in the predefined response options.

When asked to select the top three "pressing" health problems in the community, the majority of households mentioned alcohol and drug abuse. Second to alcohol and drug abuse, households believed cancers were the next most pressing health problem followed by Diabetes, Heart Disease/Stroke, and then Mental Health. Three of the five top selected health problems are chronic diseases (diabetes, cancer, Heart Disease) which are very common in Kentucky. Appendix A breaks down the frequencies of each of the health problems selected by households. "Other" notable health problems revealed during interviews included; Rape/sexual assault, infant deaths, lack of safe housing, firearm injuries, dental problems, and stress/anxiety, parenting issues, and Alzheimer's.

An estimated 61.18% of households reported Drug Abuse as a behavior that was a threat to the health of the community. Other behaviors that households saw as threatening to the community included texting while driving (29.45%), Tobacco/e-cig use (23.08%), lack of exercise (22.78%), Poor eating habits

(20.95%), and poor parenting (20.18%). See question 22 in appendix A for more results concerning threatening behaviors.

Two questions focused on any observed or expected changes that could impact health in a positive or negative way. Below you can see response results from 185 households on observed or expected changes. Respondents were asked to check "all that apply" to their community.

Positive	Negative
Education Opportunities (21.28%)	Loss of Businesses (30.82%)
New Businesses/Job Opportunities (19.74%)	Budget Cuts (28.77%)
Youth Activities/Services (15.89%	Loss of healthcare providers (25.86%)
Availability of Wellness Programs (14.89%)	Change in access to insurance (24.32%)
Revitalization of City/Area (14.09%)	Increase in crime (23.18%)

The final survey question focused on environmental threats to the community. The environment we live in plays a vital role in the overall health and wellbeing of the community. Sixty-nine (34.99%) households mentioned mosquitos as an environmental concern. Littering/Dumping was another concern mentioned by 59 (32.00%) households. Other frequently mentioned concerns included flooding/drainage problems (27.32%), Indoor/outdoor cigarette smoke (22.70%), and Abandoned homes/lots (24.01%). Both flooding/drainage problems and abandoned lots can increase mosquito populations which was the top mentioned environmental concern.

Detailed results of the entire survey can be found in Appendix A, the survey tool can also be reviewed in Appendix B.

Discussion & Recommendations

The 2017 Community Health Assessment CASPER Survey was successfully completed in three days (Thursday, Friday, and Saturday). The three day timeframes allowed for households to be visited during working hours and outside of working hours. We contribute our fairly high contact rate (61%) and completion rates (88%) to our selection of long days (10am to 6:30pm) working into evening hours and also including a weekend day as well.

Overall the survey met the intended goal to gather data from a random and statistically significant portion of the Green River District population. The information gathered adequately informed the MAPP Themes and Strengths Assessment as well as the Forces of Change Assessment for the Green River District Health Department Community Health Assessment. Doing face-to-face surveying also allowed GRDHD staff to be out in the community and gather firsthand information from community members. Hearing stories while surveying community members is another valuable piece of information that can help to guide services and programs.

This CASPER also provided a great opportunity for GRDHD Preparedness Staff to exercise their ability to mobilize volunteers and complete the CASPER Assessment which could prove to be very beneficial during a real world disaster in the Green River District. Relationships were further developed with Kentucky universities including; University of Kentucky, University of Louisville, and Western Kentucky

University. Providing these quality hands on experience for public health students is invaluable for GRDHD and the students.

Some notable perspectives gathered from the survey include:

1. Lack of knowledge about Senior Services and resources. Sixty-fix households did not know if "There are networks of support the elderly living along in our community". This is likely due to the households not yet needing to utilize such services. A good goal might be to ensure all community members are educated on resources for the elderly so they are able to access those services for themselves when the time comes, or they are able to assist family or friends with accessing support when they enter their "senior" years.

2. The Green River District is a safe place to live. One hundred sixty-two households agreed or strongly agreed that "Our community is a safe place to live". Safety is a very important health indicator. If families do not feel safe they are less likely to explore their community or neighborhood.

3. Those surveyed felt mosquitoes and issues that contribute to mosquito populations were a top environmental issue in their community. Mosquitos are known to carry disease causing viruses and with recent illnesses highlighted in the media it is no surprise that it was a notable issue that community members were concerned about.

4. Community members feel there is a need for more jobs in the community. Forty-two percent (42%) of households surveyed disagreed or strongly disagreed that there are jobs available in our community. Jobs provide income which allows for needs to be met. Often times their can also be insurance and other benefits associated with good jobs. Benefits often help to improve job satisfaction and overall wellbeing.

5. Drug and Alcohol Abuse were repeatedly revealed as a top threat in the community. Fifty-five percent of households felt Drug and Alcohol Abuse was one of the most pressing health problems. And 61% felt that Drug abuse was a behavior of concern in their community. Drug abuse affects overall health, relationships, and productivity of people who have a dependency, they also have negative effects on those close to them including family and friends.