After an emergency, government health agencies must carefully decide how they will respond to the aftermath quickly and effectively. One critical task is to determine the health needs of the community. However, due to the fact that time and resources are scarce it impossible to conduct a comprehensive community assessment.

The Community Assessment for Public Health Emergency Response (CASPER) is a statistical methodology that has been applied by public health practitioners and emergency management officials to estimate communities' health needs. However, its implementation involves the use of several components and manual processes, which considerably increases its complexity and time of execution.

This project developed a GIS solution to integrate the three main CASPER processes, including planning, fieldwork, and reporting, into one coherent framework that automates critical manual processes. As a result, it allows agencies to implement CASPER quickly and effectively, reducing time and complexity and ultimately serving the affected communities when they need it most.

GIS for Public Health
Modernize your CASPER with GIS
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Preparation and Analysis Module
This module automatically identifies the clusters (blocks or block groups) that will be used to estimate the health needs of the community and analyzes the results of the surveys. The time and complexity of the original sampling procedures are significantly reduced by a user-friendly interface that guides users through a series of well-documented ArcGIS Pro tasks and Python tools.

Smart Field Work Module
This module provides a digital survey app that enhances survey experiences and ensures the data quality through smart rules. It includes CDC’s bank of questions and the user can configure these questions according to the scenario he/she faces. This module also guarantees its use in both connected and disconnected environments by using Survey123.

Real Time Reporting Module
This module allows the users to monitor the status of the surveys and to have an overview of the health needs of the community in real time or at a defined time interval. Implemented with Operational Dashboard, various statistics in forms of tables and charts are provided in three different apps: the demographic breakdown dashboard, the medical needs dashboard and the operational status dashboard. These apps are critical to aid in the decision-making process.

For more information please visit our storymap: [Link]