**Project Name:**

Kansas: Developing a surveillance tool to define vulnerable populations associated with evolving health threats

**Project Description:**

Our Data Science Team is interested in developing a surveillance tool to help identify the unique vulnerable populations for emerging health threats in near real-time. Several of our programs, including Overdose Data to Action and Zero Suicide, are already utilizing alerts based on syndromic surveillance data. We would like to create a tool, incorporating machine learning and geospatial detection algorithms to improve the utility of these alerts. Through this training, we will be able to create a tool to automate the discovery of relevant risk factors used to define vulnerable populations underlying these alerts. With guidance from training and coaching, this tool will be able to assess risk factors related to time, location, demographics, occupation, comorbid conditions, and social determinants of health, without needing to conduct separate investigations. The exact methodology on how best to construct this tool and define vulnerable populations will be established as this project is completed, but the primary information will be collected from syndromic surveillance queries.

The Kansas Syndromic Surveillance Program (KSSP) has already been working with hospital partners to improve the collection of certain information relevant to defining vulnerable populations for emerging health threats. This includes the collection of occupation and employer, social determinants of health, and comorbid conditions. KSSP has some of the best data coverage (over 98% of all ED visits) in the country and is well positioned through established connections with trauma and injury partners to take the lead in the development of a tool to inform our understanding of health-related risk factors. This tool will ultimately be used to assess and define vulnerable populations for several emerging health threats including COVID-19, injury, substance abuse, and mental health among others. While we initially plan to explore syndromic surveillance, such a tool could be adapted for use with other public health datasets as well. Our findings will be shared with hospitals and other partners to emphasize the importance of reliable data in the collection of additional risk factors of vulnerable populations for improvements in public health.

**Team Members:**

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