

Situational Awareness and Health Crisis Response Analysis



Improve decisions and communication using data and analytics during response and recovery efforts



Detect presumptive cases sooner



Identify at-risk populations

The Issue

Epidemics confront governments, health care systems, health insurance companies, life sciences organizations and other sectors with unprecedented challenges in early detection, treatment and containment. Data-driven insights can help predict the highest demand for health care systems and identify the best responses.

A rapid response to emerging public health threats requires a comprehensive approach to detect and assess outbreaks, identify characteristics of the threat and determine optimal intervention strategies. Modeling the spread of infections based on up-to-date health surveillance data helps with mobilization of critical health care resources and understanding the effectiveness of mitigation and containment.

Challenges



Understand trends over time. No two outbreaks are the same, so continuous data gathering and visualization help to understand the locations, rate of growth and resulting outcomes. SAS® can deploy data management and data visualization via the cloud so you can respond faster.



Evaluate multiple risk scenarios. You need to identify who is most affected, where they are located and what complicating factors may prevent a public health protection strategy from being effective. You need SAS forecasting models that can use any and all available data.



Anticipate needed health care resources. Identifying available hospital capacity, personnel, equipment and supplies is crucial for the treatment and care of the infected population. SAS can help you identify where you need critical resources the most.

Our Approach

Organizations need to prepare and respond to critical health situations using advanced analytics and a deep understanding of health care and life sciences. SAS can help by providing:

Custom, interactive visualizations. SAS brings data to life with visualization and interactive reports that track and explore emerging indicators, as well as large-scale outbreaks.

Increased transparency into spread and trends. Data visualizations and analyses inform government and organizational leaders, as well as the public, on what's happening within their communities.

Location analytics. SAS combines data sources with built-in geomapping capabilities to identify emerging outbreaks and susceptible populations, especially within at-risk communities (e.g., residents in nursing facilities).

Epidemiological modeling to support decision making. SAS helps governments and health care providers model future parameters, such as peak infection date and peak hospitalization demand. By providing R0 at the community level to monitor the rate of disease spread, our models support regional preparedness efforts in addition to statewide views.

The SAS® Difference

We partnered with many government and health organizations to enable a rapid response to the recent pandemic. SAS domain expertise in health care and life sciences, combined with our leading analytics solutions, have created repeatable solutions that offer:

Simplified and automated public health reporting. SAS integrates data from multiple sources to identify trends and support response efforts. By automating tedious and manual processes – data prep, data integration, reporting, visualization and data exploration – SAS gives you more time for analysis so you can respond faster with prevention and treatment efforts.

Proven predictive analytics. Public health professionals can quickly understand emerging risks and their impact on communities. By improving spread predictions, organizations can adapt and deploy the appropriate preventive measures.

Trust and usability. SAS is one of the core programming languages for national and global public health reporting. SAS models are more transparent and explainable than other programming languages, which helps improve decision making.

How Analytics Can Help

Provide reliable, timely data for preparedness and resource planning

Detect Early Indicators

Leverage multiple sources of data to create an early warning system that understands trends today and supports future planning.



Ensure Access to Treatment

Hot spot patient case counts and at-risk populations by geography to ensure health care system capacity.



Predict Future Need

Epidemiological models account for community characteristics (e.g. regional hospitalization rates) to project the dates for peak infection and peak hospital demand.



Identify Susceptible Populations

Build risk stratification models to identify the most at-risk populations, locations and facilities.



Support Resource Allocation

Provide timely insight to help stakeholders maximize resources to ensure availability of hospital beds, treatment services, testing and staff where most needed.



Learn more at the [SAS COVID-19 Resource Hub](#)

