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## Leveraging Analytics to Improve Behavioral Health Outcomes

**Submitted to:**

*Pennsylvania House Human Services Committee*  
Majority Chairman Thomas Murt  
Minority Chairman Angel Cruz

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Chairman Murt and Chairman Cruz,

SAS is grateful for the opportunity to submit comments for the hearing of the House Human Services Committee today, July 28<sup>th</sup>, 2020, regarding the impact of the pandemic on the mental health of Pennsylvanians.

The Commonwealth is a long-standing and valued customer of SAS, which was founded in 1976 and is a global leader in analytics. Enclosed please find details regarding the work that SAS is doing, and how analytics can be leveraged to support increased mental health and wellness in this challenging environment. Never has there been a time when whole person care was more important, especially for our most vulnerable populations.

We welcome questions, or continued conversation regarding SAS' ability to support Pennsylvania at this time and offer our gratitude for the committee's consideration.

Respectfully submitted by,

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# Leveraging Analytics to Improve Behavioral Health Outcomes



## A Behavioral Health Crisis

Combatting COVID-19 is a multi-dimensional challenge. Although the immediate physical health impacts of the virus are becoming increasingly clear, the second order effects of the virus and the public health response are only now coming into focus. Linger uncertainty over the future, isolation resulting from social distancing measures, and the stress of job and financial losses are undoubtedly contributing to emotional distress and increased risk of psychiatric illness. Physical distancing and shelter-in-place measures, which are crucial to promoting physical health, can exacerbate these challenges, leading to unintended impacts on behavioral health and diminished connectivity with crucial healthcare resources. Finally, neither physical nor behavioral health challenges exist in isolation. Rather, vulnerable residents are often dealing with other challenges including homelessness food insecurity, and criminal justice involvement that require an integrated and coordinated delivery system to influence positive outcomes.

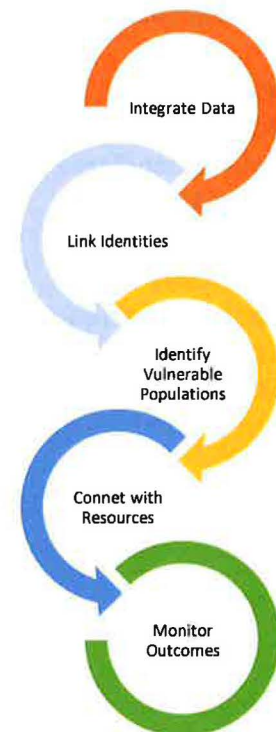
Given these synergistic challenges, identifying individuals and geographies that are most at risk of behavioral health challenges is critical to saving lives, optimizing resource use, and reopening communities in a data-informed fashion. SAS can help the Commonwealth make better use of its existing data assets by offering state-of-the-art analytic tools that integrate and analyze data to identify individuals at elevated risk for adverse outcomes.



## Improving Outcomes

In SAS' experience states often lack important insights about the needs of their behavioral health populations. Behavioral health providers, who were not eligible for federal Meaningful Use funds, often lack access to technology. Data that is available is often stored in siloes, disconnected from physical health and other relevant data about a person. Likewise, social determinant of health data is often not recorded in a standardized way, nor easily integrated for analysis. SAS works with governments to overcome these challenges, creating a data asset that offers a "whole person" view of a citizen capable of driving meaningful action. These insights can be used to prioritize individuals for testing, housing slots, care management, or other preventive and treatment services. This system will support and enhance interventions in four key ways:

- ♦ **Integrate:** Integrate and cleanse data to ensure an accurate, trustworthy data foundation. A crucial part of data integration is ensuring individuals are matched across systems through a process of entity resolution. Integration health and non-health data sources, such as lab reporting data; emergency services; hospital encounters; Homeless Management Information System; social services (e.g., demographics, benefits enrollment, etc.); and criminal justice encounters (e.g., arrest and incarceration data) is critical to measuring their utilization and quantifying risk across multiple programs.
- ♦ **Analyze:** Leveraging predictive models and other advanced analytical techniques, identify individuals who are most at risk, where they are located, and what complicating factors (e.g. social determinants of health) may confound an effective treatment strategy. SAS also offers dashboards allowing the State to identify patterns of under-utilization of behavioral health service, alert stakeholders to gaps in care, monitor long-term outcomes.





## Leveraging Analytics to Improve Behavioral Health Outcomes

- ◆ **Identify:** Generate a list of individuals at high risk for COVID-19-related needs. Multidisciplinary care management teams can use these lists for targeted outreach and interventions to address holistic needs. This system is flexible to meet new goals and priorities, adjusting as risks for COVID-19 change.
- ◆ **Evaluate:** Assess the effectiveness of interventions by population subgroups to aid in continuous quality improvement and make analytic-driven referrals to care and social supports, which bolster cost effectiveness and client outcomes. Evaluation also facilitates fiscal transparency by demonstrating the impact of dollars spent.

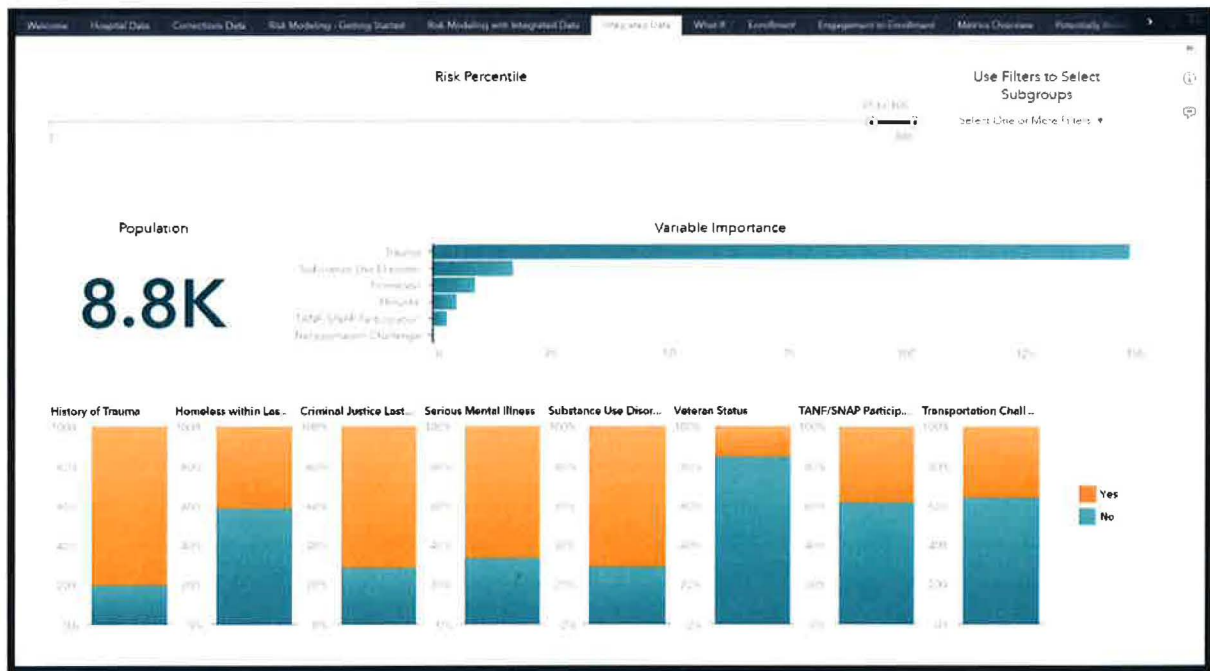


Figure 1: Whole Person Care dashboard enables intuitive identification of at-risk populations.



### SAS Experience

SAS brings decades of experience with infectious disease outbreaks and modeling, health business intelligence, and medical optimization. We offer a global team of epidemiologists, clinicians, data scientists, PhD researchers, health policy consultants and experts from industry informing our solutions, improving our delivery, and/or making sure our customers get the most out of their investments in SAS. Specific to COVID-19, our experience includes:

- ❖ Working with **some of the nation's largest health systems, including the Cleveland Clinic**, to create innovative models that help forecast patient volume, bed capacity, ventilator availability, and more. These models are designed to help hospitals and health departments optimize care delivery for COVID-19 and other patients to predict impacts on supply chain, finance and other critical areas.
- ❖ **Partnering with several states** to leverage our analytic platform and expertise to tackle a range of use cases, including the development of situational awareness dashboards, building custom epidemiological models (e.g. SIR, SEIR) to forecast peak resource need, and creating scenario simulations to take into account variables such as the impact of social distancing.
- ❖ **Serving as the analytic backbone for the COVID-19 National Research Database**, a pro-bono, cross-industry collaboration to collect and make data sets made freely available to public health and policy researchers to extract insights for combatting the COVID-19 pandemic.