Google Cloud | **Deloitte.**

Meaghan Sullivan

Closing the Equity Gap:

How Health and Human Services Agencies Can Leverage Social Drivers of Health Data with Google Cloud & AI

July 16, 2024

Leaders in the health and human services work tirelessly to promote positive outcomes in their communities. They work to protect our well-being, prevent disease outbreaks, and ensure everyone has access to quality healthcare - but achieving optimal outcomes is a complex endeavor, especially when resources are limited.

This challenge becomes even more pronounced when we consider the significant impact of social drivers of health (SDOH). Factors like education, income, housing security, and access to healthy food profoundly influence health outcomes. Unfortunately, these factors are often unequally distributed, leading to disparities in health between different populations.

Deloitte's HealthPrism™ is an AI-powered population segmentation solution that uses demographic, socioeconomic, environmental, and behavioral data to find communities facing barriers to health and pinpoint what those communities need to be healthy. Using predictive models and social drivers of health data, HealthPrism detects health, behavioral, social, and environmental conditions that could make people at higher risk of health and social conditions, helping organizations at the national, state, and community-level develop data-informed strategies to reduce the risk of adverse outcomes. HealthPrism data can also supplement other datasets by matching records based on standardized geospatial and geographical attributes.

> *By harnessing HealthPrism and unlocking its insights, health and human services leaders can make informed decisions, close the health equity gap, and ultimately improve population health.*

Empowering Public Health with Cloud & AI

Deloitte's HealthPrism - built on Google Cloud - offers a powerful suite of capabilities specifically designed to address the challenges of SDOH data analysis. *Features include:*

Breaking Down Data Silos: With Google Cloud's secure and scalable infrastructure, public health agencies can combine HealthPrism SDOH data with various sources, creating a comprehensive overview of population health. This aggregation of data from diverse sources helps break down data silos.

Unlocking Insights with AI & Machine Learning: Massive datasets can be overwhelming without the right tools. Google AI empowers you with BigQuery, a powerful data warehouse, and Vertex AI Platform, a suite of machine learning tools, to analyze these vast datasets. Identify trends, predict future health outcomes, and uncover hidden patterns that would otherwise remain invisible.

Querying in Natural Language: Imagine asking complex questions about SDOH data and receiving clear, actionable answers in plain language. Google's Vertex AI can make this a reality. Public health professionals can now utilize natural language queries to extract valuable insights without needing extensive technical expertise.

Geospatial analytics: HealthPrism leverages unique geospatial capabilities to analyze data across geographic locations. This analysis helps gain a profound understanding of how environmental variables and societal aspects impact health outcomes in specific communities.

Explainable AI Models: HealthPrism doesn't just provide results, it empowers understanding. Its explainable AI models unveil the "why" behind the data, allowing public health officials to make data-driven decisions with confidence.

Platform integration: Integration of various systems across data platforms is made easier by Google Cloud, since it facilitates seamless collaboration with HealthPrism data.
For example:

- With features such as BigQuery Omni, customers can take advantage of having their data integrated with HealthPrism data through their existing data sources across cloud platforms with analytics run entirely through BigQuery.

- Using Google Kubernetes Engine, customers can deploy applications across cloud platforms and on-premises and anticipate consistent application deployments and management.

- External systems can interact with Google Cloud through Application Programming Interfaces (APIs) that allow for data exchanges and interactions with Google Cloud resources.

Transforming Public Health with Real-Time Actionable Insights

The real power lies in applying these insights to real-world scenarios. Imagine readily identifying communities at high risk for adverse health outcomes so they can get the resources they need or proactively contracting people to encourage them to enroll in benefits. HealthPrism data enables government agencies to be proactive with allocation, targeted interventions, and the development of preventative measures tailored to specific populations' needs.

By leveraging HealthPrism and the underlying power of Google Cloud and Google AI, public health agencies can move beyond reactive measures and focus on proactive initiatives that improve population health outcomes for all. This shift can significantly reduce healthcare costs, improve overall well-being, and ultimately create a more equitable and healthy society.

How to Get Started

Leveraging Deloitte's HealthPrism or underlying Prism dataset can be done in a few ways:

Data augmentation
Augment existing solutions with additional SDOH data using an API call to Deloitte's Prism dataset. Data can be provided using standard protocols such as SFTP for customized data transfers, or shared access via BigQuery Analytics Hub for customers already using Google Cloud. Notably, HealthPrism has the ability to match up across common attributes and standards. This includes certain data elements recognized by the US Census Bureau for common customer record "match-ups". Moreover, HealthPrism's geographical and demographic data are designed to synchronize smoothly with clients' existing datasets.

Data as an insight
Public health subject matter experts (SME) can use HealthPrism data to deliver insights as a service to organizations looking to make the most of their data and ours. SMEs can analyze SDOH data and consolidate insights into actionable recommendations going beyond the numbers. HealthPrism SMEs look at the social, behavioral, and public health variables to "and" SDOH data to provide a comprehensive analysis, integrating strategic policy within and between governmental agencies.

Hands-on access
The HealthPrism self-service web application can be deployed within an organization's Google Cloud environment to enable organizations to explore HealthPrism data on their own in a pre-built dashboard. As a self-managed solution, HealthPrism works as a strategic asset empowering organizations to leverage data independently, driving informed decision-making.

Get in touch?

Contact us today to learn more about how our solutions can help you unlock the power of SDOH data and create a healthier future for all.

Meaghan Sullivan

Google Cloud Alliance
Public Sector Senior Manager
Deloitte Consulting LLP
mesullivan@deloitte.com