**“COVID-19 data challenge opened to accelerate research and innovation”**

**FAQ**

***Q. What does the COVID-19 data say about sickness and death among African Americans, U.S. Hispanics, Native People and those in rural areas?***

*A. CDC data suggest a disproportionate burden of illness and death among racial and ethnic minority groups. A recent CDC report included race and ethnicity data from 580 patients hospitalized with lab-confirmed COVID-19 found that 45% of individuals for whom race or ethnicity data was available were white, compared to 55% of individuals in the surrounding community. However, 33% of hospitalized patients were black compared to 18% in the community and 8% were Hispanic, compared to 14% in the community. These data suggest an overrepresentation of blacks among hospitalized patients. Among COVID-19 deaths for which race and ethnicity data were available,* ***New York City*** *identified death rates among Black/African American persons (92.3 deaths per 100,000 population) and Hispanic/Latino persons (74.3) that were substantially higher than that of white (45.2) or Asian (34.5) persons. See:* [*https://www.cdc.gov/coronavirus/2019-ncov/need-extra-precautions/racial-ethnic-minorities.html*](https://www.cdc.gov/coronavirus/2019-ncov/need-extra-precautions/racial-ethnic-minorities.html)

***In Santa Clara (Bay Area)****, Latinos have been dying of COVID-19 at rates far disproportionate to their percentage of the population, according to an analysis of the medical examiner records and public health data. Latinos make up 34 percent of people who have died from the virus in Santa Clara County as of May 9 but compose just 23 percent of the county’s 18-and-older population. By contrast, whites make up 26 percent of COVID-19 fatalities and 35 percent of the adult population, while Asian Americans make up 32 percent of deaths and 37 percent of residents 18 and older.*

***Q. What does the AHA Data Challenge hope to accomplish?***

***A.*** *A better understanding of**the relationships between COVID-19, other health conditions, health disparities, and social determinants of health. Health disparities include poverty, environmental threats, access to health care, inadequate access to health care, individual and behavioral factors and educational inequalities. Social determinants of health include resources such as food supply, housing, economic and social relationships, education, and health care.*

***Q. How will the AHA Data Challenge work?***

*A. Step 1 of the COVID-19 Data Challenge will launch on May 12, 2020 and end on July 12, 2020. Participants may bring their own de-identified data sets and/or use the existing datasets we have made available on the* [*Precision Medicine Platform*](https://precision.heart.org/) *to examine the relationships between COVID-19, other health conditions, health disparities and/or social determinants of health. Each participant will be given a secure workspace on the Platform and must submit a Jupyter notebook from their individual workspace with specified information.*

*Challenges will be reviewed by a peer review committee that will evaluate:*

* *The novel information learned from the analysis and findings that addresses the focus of the data challenge – the relationships between COVID-19, health disparities and social determinants of health.*
* *Findings or Results of the Data Analysis*
* *The data and data analysis methods that support findings and novel information learned.*
* *Overall impact of the findings and analysis on the relationships between COVID-19 and health disparities and social determinants of health.*

*The top six applicants based on peer review will each receive $5,000. These six applicants will advance to the second stage of the challenge, which runs from September 1, 2020 to November 1, 2020.The top applicant based on peer review in the second stage will receive $15,000.*

***Q. Who are the judges?***

*A. AHA will form a peer review committee of experts to judge each stage of the challenge.*

***Q. Which data sets will researchers gain access to?***

*A. PMP datasets include population health, clinical data, survey, and genomics data, some of which are publicly available and some of which use the PMP’s automated process for approval from the governing Data Access Committees. Researchers may bring their own data, request access to existing datasets on the Precision Medicine Platform, and/or request access to datasets published on BurstIQ’s Research Foundry. Research Foundry data sets include, but are not limited to data on:*

*• COVID-19*

*• Air Quality*

*• Allergies*

*• Biomarkers*

*• Cancer*

*• Climate*

*• Disability*

*• Environment*

*• Genetics*

*• Health Conditions*

*• Hospital Visits*

*• Life Expectancy*

*• Literacy*

*• Mental Health*

*• Nutrition*

*• Radiology*

*• Vaccination*

***Q. What is the Precision Medicine Platform?***

*A. The AHA Precision Medicine Platform (PMP) is an integrated “ready to run” data science solution that enables the medical research community to conduct discovery and accelerate scientific breakthroughs across diverse therapeutic areas. The PMP does this by providing search and filtering for data discovery; automated data access; secure workspaces equipped with artificial intelligence tools and cloud computing; global collaboration capabilities; and a set of collaboration services that can be tailored to the needs of clients. Hitachi Vantara delivers the ongoing application development and managed services under the leadership of the American Heart Association Institute for Precision Cardiovascular Medicine. Amazon Web Services provides the cloud computing capabilities.*

***Q. How has the Institute for Precision Cardiovascular Medicine accelerated cardiovascular and stroke research via the Precision Medicine Platform?***

*A. The Institute has awarded over $30M in data portfolio grants to investigators who use the PMP to apply artificial intelligence and machine learning to the analysis of datasets focused on cardiovascular and brain health research questions. Many researchers are seeing the benefits. For example:*

* *A researcher at the* ***University of Alabama at Birmingham.*** *PMP cut processing time for running 15 trillion tests on more than 12TB of individual-level data from 200,000 individuals from 2 weeks to just one hour*
* *A researcher at the* ***University of Michigan*** *used PMP to develop a multi-step algorithm to analyze patient angiograms so that they can determine which patients are in greatest need of a coronary stent*

***Q. What is the underlying technology in the Precision Medicine Platform?***

*A. The Precision Medicine Platform leverages the Hitachi Cloud Accelerator Platform and Hitachi Vantara Cloud Application Modernization Services. It also incorporates Hitachi Vantara’s Dashboard Accelerator to monitor the movement and status of data at all times.*

***Q. How does the Precision Medicine Platform work?***

*A. The Precision Medicine Platform provides the following capabilities:*

* *Search****:*** *The PMP enables registered users to efficiently search and filter across the datasets stored in the platform to quickly identify relevant data needed to address a specific research question. Researchers have access to the notebooks that accompany each dataset, so that they can learn more about the data itself, including source and how it was harmonized.* 
  + *Researchers may also bring their own data to their private workspaces on the platform.*
* *Workspaces: The PMP’s workspaces are highly secure analysis environments that use Jupyter notebooks equipped with a variety of popular analytic tools and computational languages, such as Python, and R. Workspaces may also be customized to researchers’ needs.*
* *Data Access: The AHA has automated the data access and approval process across the platform, solving one of the thorniest challenges for medical researchers. Datasets are requested and approved through an integrated process called DUOS (Data Use Oversight System), which provides efficiency in the request and approval process to access data needed for specific research studies.*
* *Cloud Computing: Cloud computing provides computational power beyond the ability of a personal computer. PMP workspaces make the process of accessing and utilizing cloud computing highly efficient.*
* *Collaboration: The PMP’s workspace collaboration capabilities drive a highly efficient research process. Researchers can share their workspaces with team members on a global basis.*
* *Security****:*** *Data security is the highest priority of The Institute.**The PMP is HIPAA (Health Insurance Portability and Accountability Act) compliant and has also been certified through the Federal Risk and Authorization Management Program (FedRAMP Low) for cloud computing security. We have automated controls in place to ensure compliance with regulations. The workspaces act as “walled gardens” within the platform; the workspace owner controls access at all times.*
* *Publishing: The PMP’s publishing capabilities deliver a robust solution for enabling reproducibility and reusability of research results, where appropriate. Researchers can publish their results to the community – if desired and appropriate -- on the platform’s Learn page. Researchers also have the option to publish their work to external sources, like Github, or to provide an URL for use in a document or journal publication.*

***Q. What is the role of BurstIQ in enabling secure access to distributed data sets?***

*A. BurstIQ revolutionizes the way organizations secure, share, and leverage data. The platform builds multi-dimensional profiles of people, places, and things, and enables the connection between them. It allows data to be securely owned, shared, and trusted across a global data exchange network, driving deeper insights and more meaningful collaborations in health. The key capabilities include:*

* ***Granular Data Ownership & Consent:****Customizable data governance that cryptographically enforces ownership and allows data owners to control everything about how their data is shared – from a single data point to petabyte-scale data sets.*
* ***Secure on-Chain Data Management:****The only commercially available blockchain platform that combines on-chain big data, immutability, auditability, and* ***HIPAA, GDPR and NIST compliance****.*
* ***Multi-Dimensional Health Profiles:****Build profiles of people, places, and things, incorporating all types data: clinical, claims, pharmacy, behavioral, environmental, social, omics, manufacturing, and much more.*
* ***Global Collaboration:****Securely share data with partners, collaborators, and communities across the globe to accelerate research and innovation – without losing control of your data.*
* ***Development Accelerators:****Get to market faster and enhance your solution’s capabilities using a full suite of platform and application tools: dynamic schemas, data mapping libraries, orchestration tools, app frameworks and components, and more.*

***Q. How does AHA ensure the privacy and security of data that is connected to the PMP?***

* *A. Data privacy and security are the highest priorities of The Precision Medicine Institute.**The PMP is HIPAA (Health Insurance Portability and Accountability Act) compliant and has also been certified through the Federal Risk and Authorization Management Program (FedRAMP Low) for cloud computing security. Automated controls are in place to ensure compliance with regulations. The workspaces act as “walled gardens” within the platform; the workspace owner controls access at all times. We also ensure that data used via the PMP complies with GDPR and similar data protection laws.*

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