2023 Health Equity Data Jam

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Table of Contents

[Introduction 3](#_Toc133587474)

[Problem Statement 3](#_Toc133587475)

[Current State 3](#_Toc133587476)

[Proposed Future StaTe 3](#_Toc133587477)

[conclusion 5](#_Toc133587478)

[About CVP 5](#_Toc133587479)

# Introduction

This paper is intended for the audience of the 2023 Health Equity Data Jam as a call to action for the public to transform HHS data into digital tools, insight and innovation that would have an impact on health disparity.

# Problem Statement

Transforming raw data into actionable insights and data driven digital tools to bridge gaps and improve equitable access to healthcare for all.

# Current State

Currently, the curated open datasets from <https://gis.cdc.gov/cancer/USCS> consist of published data for cancer rates and cancer cases between 2015 -2019. While there is some visualization of the raw data that is used to populate the maps and charts are not downloadable in various formats. It’s difficult to perform time series analysis because the datasets are not current, there’s no correlation between cancer rates, uninsured rates, socio-economic, and environmental factors because the data is not centralized. Insights on disparities are difficult to ascertain from the visualization due to filtering by all races or an individual races. Bridging the gaps in cancer care requires the collection of centralized data that not only includes data variables like demographics, cancer diagnosis and stages but also socio-economic and environmental factors. For example, how many of these cancer cases represent individuals that live below or above the poverty level, lives in a rural area have no access to routine screening and innovations of cancer care due to demographics, socio-economic and environmental factors? Understanding this information may help to close some of the gaps and improve equitable access to healthcare. The data that is currently collected does not uncover screening gaps and patients in need of access to cutting edge research.

# Proposed Future StaTe

We propose a Digital Experience (DX) platform with a data ecosystem driven by analytic services. Analytic services platform enables both a private and public desktop web accessible experience, allowing consumption of raw data, data ready analytics and self-service analytics capabilities. A better way to visualize data ready analytics on cancer statistics might be to provide an interactive map for end-users to hover over a state and county in the US to see a breakdown by race. See an example of what the visualization may look below in figure 1. This infographic below is based on datasets provided by the CDC at <https://gis.cdc.gov/cancer/USCS> and by the United States Census Bureau at <https://www.census.gov/data/tables/time-series/demo/popest/2020s-counties-detail.html>.

Map

Description automatically generated

Figure 1 - Howard County Maryland Cancer Statistics

Additionally, with a centralized digital platform, data consumers can perform their own analyses without needing to scour the internet themselves for quality data sources. An example of this type of open-source analysis can be found at <https://zapetras97-healthequity-health-data-fqojm6.streamlit.app/>. The data for this app comes from the same sources as the above visualization, with the addition of US Census Bureau data on uninsured rates pulled from nine tables on https://www.census.gov/data.html.

HHS may also want to consider the following before investing in analytic service-based offering:

* Establish Stakeholders to include Key User Groups (KUGs) both internal and external to the organization to gather input on data collection requirements.
* Establish a Technical Expert Panel (TEP) to include Data Stewards for defining the current and future state of the data management and analytics strategy. They must also define how the ecosystem is to be utilized internally and externally.
* Identify use cases for the validation of user and technical requirements.
* Include user design principles to enhance the user experience.
* Inventory and catalog the data at an enterprise level.
* Establish data standards and protocols for information exchange.
* Identify technical constraints, governance, and security policies.
* Establish or enhance data sharing and data use agreements.
* Invest in a cloud platform that meets your enterprise level business needs, is easy to implement, and is tool agnostic.
* Develop a good data migration strategy and ensure the platform is scalable for processing big data and provisioning large volumes of users.

As shown in the infographic below in figure 2, data is acquired from internal and external actors, allowing data to flow across the enterprise. The DX platform supports a data ecosystem that can be leveraged internally and externally via cloud services and Application Programming Interface (APIs) with relatively low monetary and security risks. Zoom in at 150% to see content clearly.

DIGITAL PLATFORM - DATA VALUE CHAIN

Diagram

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Figure 2- DX Platform – Trusted Analytic Insights (Descriptive, prescriptive, predictive, and cognitive)

# conclusion

The Advantages of analytic services:

* Cost effectively collect and manage large volumes of data with agility, flexibility, and scalability.
* Improve governance, regulatory compliance, and security.
* Enterprise-level data cataloging.
* AI machine learning capabilities.
* Trusted analytic insights (descriptive, prescriptive, predictive, and cognitive).
* Leadership decision support at a local, regional, and national level.
* Providing data as product and data as a service offering.
* Securely externalize your data ecosystem.

# About CVP

CVP is an award-winning business and next-gen technology consulting company that helps organization operations to transform the modern world and build healthy, long-lasting solutions to world problems. We help these organizations navigate through continuous changes in healthcare, national security, and public sector through innovative strategies and solutions that leverage technologies and industry expertise in areas including Technology Modernization, Data Science & Engineering, Business Transformation, Cybersecurity, Marketing, Communications, Change Management, and Research and Evaluation. CVP delivers unparalleled excellence to clients and employees through a strong culture of integrity, engagement, respect, and a passion for our clients’ missions.

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