



How DC Health Built a Bridge to Data Ownership

Data is essential for helping government agencies improve efficiencies and deliver services more effectively. Perhaps nowhere is this more critical than when it comes to ensuring constituents' health and wellbeing.

Like many public health agencies in the COVID pandemic, city health leaders in Washington, D.C. urgently needed data to make data-driven decisions on a daily, if not hourly, basis. Despite the wealth of data already being collected by the district's health department, known as DC Health, the agency did not own and manage the data, which significantly hindered its ability to quickly capture and use information for decision-making and reporting.

"With COVID, we saw immediately that we could not manage the pandemic if we weren't able to put our hands on data right away," says Eva Reid, senior IT data manager and agency data officer for DC Health.¹

In a bold move, agency leaders decided to accelerate pre-pandemic plans to modernize their legacy vaccination system and leaned full-force into migrating data and programs to Oracle Cloud Infrastructure — Oracle's FedRAMP-compliant cloud architecture — in the span of just four months.

A vital link in this effort was partnering with STChealth, a leader in immunization intelligence, and Tharseo IT, an Oracle Partner consulting company, to build a data bridge. The bridge would help the agency unify data, share information with other agencies more easily, and enable the real-time transfer and synchronization of disease surveillance and vaccination data from another vendor's cloud platform to the Oracle cloud infrastructure.

In pivoting to the new solution, DC Health became one of the nation's first public health agencies to own and manage all its data in a single environment. The agency has not only saved on infrastructure and development costs. As a data-centric organization, DC Health can now access and analyze multiple streams of data 24/7 for rapid decision-making, meeting the information needs of health officials and the general public and improving the health outcomes of the communities it serves.

Meeting the need for better data

Prior to the pandemic, DC Health's data was siloed across a number of legacy systems, making it difficult to get a complete view into data, have a single source of truth and apply analytics. IT leaders decided to move to a new system for tracking and reporting vaccinations and selected STChealth to provide a full cloud-scalable software-as-a-service (SaaS) disease surveillance solution.

When the pandemic hit, DC Health needed to be able to reach into the solution database at a moment's notice. But because the agency didn't manage the data, it didn't have unfettered real-time access to the information.

"If DC Health wanted a standardized STChealth report, that was simple," says Tharseo IT CEO Eric Wimer.² "However, if they wanted something that was unique to the standardized STChealth reporting, there was a time delay and maybe a cost, too. Their stakeholders needed instantaneous access to all of the immunization data with no time delay in order to get ahead of COVID in a proactive and predictive manner."

Adding to the challenge, several mission-critical applications resided on Oracle Cloud Infrastructure while others—including the disease surveillance system—ran on another cloud vendor's platform. The two platforms do not communicate with one another natively, which interferes with easy access to data and complicates the goal of having a single source of truth.

A path to modernization and data ownership

With no time to spare, Andersen Andrews, the DC Health chief information technology officer, enlisted Tharseo IT and STChealth to create a data bridge that would allow real-time data synchronization from the STChealth solution running on the third party's cloud platform to an Oracle database hosted in Oracle Cloud Infrastructure. A key requirement was that all modifications had to enable DC Health to "own"—that is, directly control and manage—its data on the Oracle Cloud database platform so that it could access and manipulate data

and data sets at a moment's notice. Migrating mission-critical systems to Oracle Government Cloud would enable multiple agencies to share and analyze data even as data volumes grow and new agencies are added to the system.

"We required a service-oriented model that offers stability, disaster recovery and increases the bar of our infrastructure, which would ultimately enhance our performance," says Andrews.³

Another major requirement was compliance with the Federal Risk and Authorization Management Program (FedRAMP). Oracle Government Cloud's FedRAMP-compliant environment enables DC Health to meet all the Center for Medicare & Medicaid Services (CMS) requirements for federal grant funding around the Health Insurance Portability and Accountability Act (HIPAA), Internal Revenue Service Publication 1075 (IRS 1075), the Federal Information Security Modernization Act (FISMA), and the National Institute of Standards and Technology (NIST).

Working together, STChealth and Tharseo accelerated a 12-month timeline to complete the data bridge project, which runs on Oracle GoldenGate, a data replication tool, in four months. The resulting solution allowed DC Health to manage all COVID-19 data (including vaccines and new outbreaks) through the STChealth Immunization Information System (IIS).

Here's how the process works: The data bridge compiles data from multiple systems into STChealth's system. Oracle GoldenGate synchronizes the data in real time and then feeds it into a database on Oracle Government Cloud. Once the various data points are produced in the centralized Oracle cloud environment, the data can be pushed into a larger enterprise-wide data lake that serves the entire District of Columbia and provides district leaders with the vital data — and a single source of truth — they need to make critical decisions in real time.

"The data is no longer in some system where we can't really pull it out. We can see the data and report daily, hourly, or whatever the need is. Now, when the director says, 'I need this report right now,' we can provide it," says Reid.

Key outcomes of the solution include:

- **A global, unified data layer** that enables analysis from multiple agencies for improved decision-making

- **Oracle FedRAMP compliance**, which helps address HIPAA and other regulations, as required to receive CMS funding
- **Faster, better reporting** that improves timely public communication
- **Advanced algorithms** that automatically discover natural groupings of data and enable DC Health to track outbreaks in real time
- **Savings** of 40% in infrastructure costs and 50% in development costs by moving to Oracle Government Cloud
- **Scalability** for further development of the data ecosystem, including training and buy-in

Paving the way for others

As one of the first local government agencies to own its data, DC Health has paved the way for other state and local governments to use a data bridge in their solutions. The agency has designated Oracle Government Cloud as its platform of choice for all six of its internal departments and continues to scale the system so it can onboard all parts of the agency.

In addition to tracking COVID-related data, DC Health is currently using the disease surveillance system to monitor flu outbreaks and other public health emergencies. In the longer term, the agency plans to expand its artificial intelligence and machine learning capabilities. Together with the cutting-edge data bridge infrastructure, these solutions will help DC Health access and analyze the information it needs to make critical, real-time decisions to save lives and protect community health.

"We're feeling more comfortable with where we're headed and the fact that we'll be able to respond in a very timely way. In some ways, we're able to respond even before something else comes up, which is really wonderful," says Reid.

This piece was written and produced by the Government Technology Content Studio, with information and input from Oracle and Tharseo.

Endnotes:

1. Government Technology webinar. How a Move to Cloud Can Further the Mission of Public Agencies. September 2022. <https://webinars.eerepublic.com/How-a-Move-to-Cloud-Can-Further-the-Mission-of-Public-Agencies-141200.html>
2. Health Business Transformation Award nomination.
3. CIO Review. Ten Most Promising Oracle Consulting/Service Companies 2019. September 2019.

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