



The [UK Health Security Agency \(UKHSA\)](#) is responsible for protecting all members of the UK community from the impact of infectious diseases, chemical, biological, radiological and nuclear incidents and other health threats. UKHSA provides intellectual, scientific and operational leadership at a local, national and global level to secure the nation's health. The UKHSA is sponsored by the Department of Health and Social Care.

### Industry

Government

### Strategic priorities

- Cloud Infrastructure

### Strategic priorities

- VMware® Aria Cost™ powered by CloudHealth®
- VMware Professional Services

# UK Health Security Agency Streamlines Access to Cloud to Accelerate Digital Healthcare

During the COVID-19 pandemic, UKHSA built a multi-cloud platform to manage testing, contact tracing and vaccination scheduling for UK residents. By deploying VMware Aria Cost powered by CloudHealth to control its cloud spend, the agency could become a one-stop shop for cloud provisioning to other UK healthcare agencies.

## Protecting UK health and healthcare systems

The UK Health Security Agency (UKHSA) was created as a direct response to the threat of COVID-19, a specialized agency focused solely on protecting the country from existing and emerging health threats. But the organization's purpose extends well beyond the response to one specific infectious disease. It is also the responsibility of UKHSA to organize the nation's response to the next pandemic and protect the country's healthcare system.

## Creating a platform for connected health

It may be many years before the world can fully assess the myriad impacts of the COVID-19 pandemic. What is clear now is that many governments quickly united many disparate healthcare organizations to coordinate coherent plans of action. The UK was a global leader among these ambitious efforts.

On December 8, 2020, at University Hospital in Coventry, Margaret Keenan became the first person in the world outside a clinical trial to receive a COVID-19 vaccine. Within 10 weeks, the UK had vaccinated more than 13 million individuals. At the peak of the vaccination program, a network of more than 4,000 vaccination centers staffed by 80,000 specially trained volunteers provided care within 10 miles of every UK home.

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The UKHSA provided the digital infrastructure to connect every link in the testing, contact tracing and vaccination chain. As soon as vaccinations were available, UK residents were able to book vaccination appointments online and display their status via the smartphone-enabled NHS Test & Trace Halo app.

This unique solution was supported by a new cloud platform, hosted on Amazon Web Services (AWS) and Microsoft Azure, implemented in less than two months. The platform established both the scale to accommodate rapid growth and the flexibility to add new services in the fast-changing environment of the pandemic.

The success of the platform has allowed UKHSA to extend cloud resources to other agencies and support a variety of healthcare use cases across the NHS. Named UKHSA Cloud, the multi-cloud platform promises to accelerate the digital transformation of health services across the country. But for the cloud gateway to succeed, UKHSA must be able to control the often unexpected variable cloud spend model to simplify costs for users while streamlining access and strengthening security across the highly regulated UK healthcare landscape.

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## Optimizing cloud performance and controlling costs

By adopting VMware Aria Cost powered by CloudHealth (formerly CloudHealth by VMware), UKHSA has developed a powerful solution to improve resource utilization and realize cost savings across the new UKHSA Cloud.

“I’d worked with CloudHealth in the past in a similar environment, with rapid growth, sensitive medical data, many different parties to align, and a pressing need to control costs,” says Jonny da Silva, head of DevOps and cloud lead, UKHSA. “I knew this was the most comprehensive cloud management solution that could take our cloud ambitions to the next level.”

The engagement with VMware included working alongside a VMware Professional Services specialist to develop a FinOps framework to customize VMware Aria Cost with tailored recommendations. “We have long-term trust in VMware products and expertise,” says da Silva.

After the cloud platform was launched and VMware Aria Cost deployed, the solution supported more than 90 workloads, 200 AWS accounts and 25,000 simultaneous users. At peak usage, the system accommodated more than 25 million UK logins.

“VMware Aria Cost allows us to prove that we’re managing cloud costs and providing visibility across the business. It’s like a real-time bank statement,” says da Silva.

## Establishing visibility across a fast-moving cloud environment

The adoption of VMware Aria Cost enabled UKHSA to transition from the custom-built test, contact tracing and vaccination scheduling solution to a cloud services platform capable of supporting the diverse needs of the NHS. It delivers cost control and the streamlined management UKHSA needs to support a variety of use cases across multiple cloud environments.

“Going forward, we need to dig deep into our cloud activity. VMware Aria Cost enables us to understand direct and indirect costs, configuration and how the cloud platform is used,” says da Silva.



Across AWS and Azure services, VMware Aria Cost identified more than USD \$120,000 savings in the first month and USD \$4,500 of zombie assets. The solution identified and automatically tagged around 1,500 untagged assets, a task that could have taken years to do manually. “I wanted to cost optimize the platform to the extent that there would be zero running costs from our side,” says da Silva. Within six months, this goal was realized when the UKHSA achieved its target of zero running costs for the platform.

This granular level of control will be critical as UKHSA onboards new cloud consumers. VMware Aria Cost creates an effective chargeback process allowing users to track assets and resource usage. Instead of shopping for cloud providers, NHS agencies can now consume cloud resources directly from UKHSA.

“With greater volumes, we can negotiate better rates with different cloud providers,” da Silva says. “And there will be far less bureaucracy dealing with UKHSA Cloud directly. Agencies will have faster access to cloud services.”

This access will be critical to the digital innovation and transformation of UK health services. The COVID-19 emergency accelerated public acceptance of digital application touchpoints, and wider adoption from medical teams for digital workflows. A wave of new applications and digital ways of working will require rapid development and scaling to be effective.

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## Accelerating the adoption of digital workflows across the healthcare system

VMware Aria Cost supplies essential tools to allow UKHSA to create its Cloud Center of Excellence. This organization will allow UKHSA to take a consultative role with NHS agencies, advising where to place workloads, how to identify waste, eliminate process inefficiencies, and apply governance best practices.

“It’s central to having a continuous focus on service and efficiency,” he says. “Our goal is to become a one-stop shop for NHS cloud ambitions.”

For UKHSA, an effective cloud platform is critical for the security of UK health and healthcare systems. “We don’t know the nature of the next health threat,” da Silva says, “but we know our systems are ready for whatever the future may hold.”

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