



# CritiCall Ontario Migrates Vital Healthcare Support to AWS with Datavail

Learn how CritiCall Ontario moved vital healthcare services into the cloud without disrupting services as its on-premises systems were reaching end of life.

## Overview

Canadian healthcare organization [CritiCall Ontario](#) provides an around-the-clock, phone-based emergency consultation and referral service for hospital-based physicians in Ontario. Two of its main technical systems are the PHRS (Provincial Hospital Resource System), which allows hospitals to update and monitor resource availability in critical and non-critical care units, and the CCIS (Critical Care Information System), which provides near real-time data on every patient admitted to critical care units in Ontario's acute care hospitals. A key component of these services is Health Level 7 version 2 (HL7 v2) messaging, which comprises a standardized set of workflow events for the transfer of clinical and administrative data between healthcare applications. This capability was originally running on Microsoft BizTalk middleware, which was coming to end of life in 2024. With the help of [AWS Partner Datavail](#), CritiCall was able to migrate these services to Amazon Web Services (AWS).

## Opportunity | Changing Mandate and Aging Systems Required a New Approach

Caring for patients who require urgent or emergent care in Canada's most populous province requires being able to quickly match patients and resources. CritiCall Ontario is central in making that happen. In addition to running the PHRS and CCIS, it provides daily updates to Ontario's Ministry of Health.

CritiCall was running its systems using on-premises infrastructure but found itself fast approaching the limits of the system. More urgently, this deployment model was soon not going to be an option. Microsoft's BizTalk middleware couldn't support some features of the HL7 messaging protocols, but, more importantly, the system was coming to end of life. CritiCall needed to change the way it was operating without disrupting services in a province with a population of more than 14 million residents. It needed a scalable solution that would simplify the collection and sharing of healthcare data.



## About CritiCall Ontario

[CritiCall Ontario](#), based in Hamilton in the Canadian province of Ontario, is a one-number-to-call, around-the-clock emergency consultation and referral service for hospital-based physicians in Ontario caring for patients who require urgent or emergent care beyond what their own hospital can provide. It assists hospital physicians by facilitating consultations with medical specialists and/or referral decisions for urgent and emergent patients to appropriate levels of care within Ontario and outside of the province if necessary.

## AWS Services Used

- [Amazon Aurora](#)
- [Amazon Fargate](#)
- [Amazon S3](#)
- [Amazon CloudWatch](#)

## Benefits

- 2-day update timeline reduced to minutes per update
- 30 million HL7 health data messages per year supported
- 9 user-specific dashboards created
- 4-day switchover from old to new systems



With the end-of-life update inevitable, the organization chose to modernize its architecture to run on AWS, rather than perform a lift and shift. This would improve ways of working, consume fewer resources, and enable CritiCall to use more advanced HL7 capabilities that were not supported on BizTalk.

“We’re the point of truth of data in the province,” says Isabel Hayward, executive director of CritiCall Ontario. “We have to get a patient in front of a surgeon or specialist within 4 hours when they’re at risk of losing life or limb. Looking at what we used to do 5 years ago and what we’re being asked to do now, it is very different — we have to be more agile. We needed a system that would give us that adaptability.”

## Solution | CritiCall and Datavail Migrate to Cloud, Gain Speed and Flexibility

CritiCall had an established relationship of about 15 years with AWS Partner Datavail, which approached the company with a suggestion on how to manage its need to modernize. The [AWS Migration Acceleration Program](#) (MAP), which provides both financial credits and AWS support, meant that CritiCall could migrate without requesting dedicated funding from the Ministry of Health. And because Datavail already understood CritiCall’s business and how it worked, it was a good fit.

“Because it’s for healthcare and such a large system, they were very careful about it,” says John Zheng, a solutions architect at Datavail. “But the chance to modernize and the benefits of MAP made it make sense.”

That support was valuable for CritiCall in optimizing its architecture and workflow. “Part of the deal was that AWS did a whole analysis of all of our systems in the flow, which was like a gift,” says Hayward. “We had the expertise of AWS and Datavail helping us understand the business and help us get to the cloud in a very seamless way.”

For both PHRS and CCIS, CritiCall uses [Amazon Aurora](#) to run MySQL, which provides unparalleled high-performance and availability at global scale. The organization also uses [Amazon Fargate](#), a serverless, pay-as-you-go compute engine that lets users focus on building applications without managing servers and enables users to monitor applications through built-in integrations with AWS services. “This was not lift and shift—it was transformative,” says Zheng. “They now have a serverless database and a serverless containerized service.”

[Amazon Simple Storage Service](#) (Amazon S3) provides an object storage service offering industry-leading scalability, data availability, security, and performance. And CritiCall gains a big-picture view by using [Amazon CloudWatch](#), a service that monitors applications, responds to performance changes, optimizes resource use, and provides insights into operational health.

Through careful planning, Datavail and CritiCall were able to migrate with only short, planned interruptions in services. “We kept systems running in parallel, so we could keep services running as the new system was built, and we’ve been able to do so securely,” says Rohit Nayar, manager of IT and security at CritiCall Ontario. “We did the switchover in 4 days. We’re secure, because we don’t share any computing, or any memory, in a public space —this is all in our own space. And running on AWS means we have resilience because of the multiple availability zones, so we don’t have to worry about a data center failure.”

## Outcome | Control and Flexibility Prepare CritiCall for Future

CritiCall and Datavail are in the final stages of the migration and are optimizing the system to get the highest level of benefits.

The system is on track to handle a combined total of 30 million HL7 health data messages annually between PHRS and CCIS with the ability to scale as needed. Additionally, CritiCall now has control over the administration of its service. “Previously, when we needed something changed, we had to contact the data center with a request,” says Nayar. “That would take 1–2 days to process and come with a financial cost. Now, my team can make any changes we need immediately. We’ve gone from days to minutes.”



The benefits extend beyond the IT department, however. “The business intelligence benefits are significant,” says Hayward. “It helps me, my team, and other business users get a better understanding of what is happening. And for our users in the hospitals, they’re seeing benefits too. For example, CCIS produces 15 different, complex reports and 9 dashboards specific to various stakeholders.”

With the migration nearly complete, CritiCall is looking at additional ways AWS can help the business, such as using [Amazon Connect](#) to modernize its call center. “We’re looking at what Amazon Connect can do to make our call center more effective,” says Hayward. “We’re looking at AI to automate processes, and how AWS can support that. Once you’re on AWS, the possibilities increase.”

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## About the AWS Partner

Based in Colorado in the US, Datavail provides database, application, analytics services, and consultancy to customers around the world. As an AWS Advanced Tier Consulting Partner with more than 1,000 professionals, Datavail helps clients design, build, and support cloud-native data and application solutions. Through its expertise as an AWS Microsoft Workloads Services Competency Partner and Amazon RDS Delivery Partner, Datavail assists businesses in transformation and migration.

