



AWS FOR HEALTHCARE

# Accelerating the future of personalized healthcare



# Table of contents

<b>Introduction: The need for personalized healthcare</b> .....	<b>3</b>
<b>Clinical systems: Modernizing mission-critical applications in the cloud</b> .....	<b>5</b>
<b>Analytics and machine learning: Unlocking the value of health data</b> .....	<b>7</b>
<b>Patient, member, and clinician experience: Creating powerful experiences across the care continuum</b> .....	<b>9</b>
<b>Medical research: Bringing medical research to the point of care</b> .....	<b>11</b>
<b>Finance and operations: Balancing personalized healthcare with the bottom line</b> .....	<b>13</b>
<b>Core health IT: Providing secure access to healthcare data</b> .....	<b>15</b>
<b>AWS: Charting a path to personalized care</b> .....	<b>17</b>

# The need for personalized healthcare

For healthcare organizations, the challenge of providing patient-centered care amid ever-increasing costs has never been greater. Inefficiencies are driving up operational expenses while reducing reimbursements and revenue. The lack of personalized care can lead to unnecessary or ineffective treatments and even costly readmittances. And keeping health information secure and private adds yet another burden to the bottom line.

**But while the challenges are great, so are the opportunities.** Technology presents an extraordinary opportunity to reshape the healthcare industry with tools that can help organizations manage data, optimize workflows, and increase clinical effectiveness. Digital innovations such as artificial intelligence (AI) and machine learning (ML) have already set the course for a revolutionary new era of personalized medicine. And the explosion in virtual care options, such as telehealth, attests to the desire of clinicians and patients for more efficient, personalized experiences, often at lower costs.



# AWS for Healthcare: A trusted partner for patient-focused healthcare

AWS offers the broadest and deepest portfolio of cloud services and purpose-built partner solutions that empower healthcare organizations to accelerate the digitalization and utilization of their data, improve patient outcomes, and lower healthcare costs. For the last 15 years, healthcare organizations have collaborated with the dedicated AWS team of healthcare professionals and industry experts to speed the pace of innovation, identify opportunities for efficiencies, and provide insights that help clinicians create personalized care plans for their patients.

## Portfolio of healthcare solutions

Learn more about solutions for healthcare from AWS and AWS Partners >



Clinical Information Systems



Analytics & AI/ML



Patient & Clinician Experience



Medical Research



Finance & Operations



Core Health IT

Featured partners and customers  
accelerating innovation from  
benchtop to bedside

Anthem

HOUSTON  
Methodist

**NHS**  
Digital

**PHILIPS**



*"The holy grail is to use prescriptive analytics to offer actionable insights to individuals through their devices, encouraging behavior change and offering advice that's deeply personal to them..."*

*SVP of Strategic Technology Solutions & CIO, Cambia Health Solutions*

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# Modernizing mission-critical applications in the cloud

A reliable, performant infrastructure is the foundation of patient-centric care. Inefficient or outdated systems place administrative burdens on clinicians, distracting them from their mission of improving patient outcomes.

A truly modernized infrastructure is one that gives healthcare providers the tools and insights they need to deliver the best possible outcomes efficiently and cost-effectively.

Technology can help achieve that goal with cloud-based solutions that take the place of legacy systems. AWS provides the infrastructure—processing power, servers, storage, etc.—to run mission-critical clinical applications, such as electronic health records (EHRs) and picture archiving and communication systems (PACS), in the cloud with unmatched reliability, security, and data privacy.

## Customers transforming the future of health with AWS

### TuftsMedicine

*"We are creating a frictionless and culturally competent care environment for patients, physicians, and the entire care team by migrating our entire digital healthcare ecosystem to the AWS Cloud. This enables our Tufts Medicine team to integrate data-driven intelligence into everyday health and care that is more secure, resilient, and simple to use."*

Chief Digital Officer & CIO, Tufts Medicine

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*"We don't want to have to worry about patching servers and following exploits and that kind of thing... That's all off-loaded onto the AWS teams. That frees us up to do science, which is what we want to do."*

Cloud Development Manager, Nationwide Children's Hospital

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# Transforming clinical systems infrastructure with AWS

AWS and AWS Partners are helping healthcare organizations such as [Philips Healthcare](#), [UC San Diego Health](#), and [Tufts Medicine](#) transform their clinical processes with solutions that reduce costs, automate core processes, and improve performance across the healthcare spectrum.

**AWS makes it easy for organizations to leverage technology that will enable them to:**

- Modernize electronic health record systems
- Access cost-effective, scalable data storage
- Leverage data and provide insights to improve clinical decision-making and predict health events
- Ensure data liquidity across organizations
- Drive efficiencies with advanced capabilities such as speech recognition and voice assistance
- Protect sensitive data and adhere to regulations

With solutions from AWS and AWS Partners, healthcare organizations can modernize their clinical systems infrastructure, helping to free clinicians of administrative burdens and allowing them to focus on delivering the best overall experiences for their patients.

## Dive deeper

Explore clinical systems solutions from AWS and AWS Partners, including [Electronic Health Records](#), [Medical Imaging](#), and [Clinical Genomics](#) ›



## Featured partners



# Unlocking the value of health data

Unlocking insights from data can fundamentally change the way patients are diagnosed and treated and speed the discovery of new treatment options. It's no wonder that the ability to capture, share, and deliver data is becoming a high priority for the global health industry.

But processing vast amounts of data from disparate sources poses several challenges for healthcare

organizations. They need the capability to quickly process and manage data, as well as derive insights from that data from any location. Machine learning (ML) can address these challenges. With its ability to leverage big data and predictive analytics, ML can help healthcare organizations optimize clinical and business operations and improve patient and clinician experiences.

## Customers transforming the future of health with AWS



*"The Rush Population Health Analytics Hub will be a key tool to inform meaningful interventions and assess progress on the clinical and social determinants of health. In this way, the assistance from AWS advances our mission to lower the death gap and continue to build health equity."*

*CEO, Rush University Medical Center*

**[Read the case study ›](#)**

# Stepping into the future of AI/ML-enabled healthcare with AWS

Leading healthcare organizations such as [Anthem](#), [Change Healthcare](#), and [Rush University Medical Center](#) have adopted AWS analytics and machine learning capabilities to derive actionable insights from their health data. With its robust machine learning platform, AWS can help organizations modernize their care infrastructure to accelerate innovation, improve decision-making and diagnostics, and even manage population health challenges. And, tools such as document classification, natural language understanding, and speech-to-text technologies

can simplify and automate processes, resulting in more efficient operations, reduced hospital waste and costs, and improved patient outcomes.

With its secure and reliable cloud platform, deep understanding of healthcare industry regulations, and consistent data transparency and control, AWS has earned the trust of healthcare customers. Today, AWS is empowering healthcare organizations to leverage analytics and machine learning to solve their most complex challenges and provide truly personalized care.

## Dive deeper

Explore analytics and AI/ML solutions from AWS and AWS Partners, including [Quality Metrics Reporting](#), [Operational Optimization](#), [Health & Disease Prediction](#), [Health Datasets](#), and [Population Health](#) ›



## Featured partners





# Creating powerful experiences across the care continuum

With patients, members, and clinicians all pressing for more efficient and personalized healthcare experiences, organizations are faced with a two-sided challenge: They must satisfy everyone's expectations while also dealing with operational overload, staff shortages, and clinician burnout. By leveraging the same customer-centric technologies that Amazon.com used to transform ecommerce, organizations can now meet evolving customer expectations and reduce friction at every major touch point of the healthcare journey.

## Customers transforming the future of health with AWS



*"The cloud-based protocol manager solution lets us disseminate these good practices... to all the sites within our region or globally. We do all this to get the best picture we can for our patients and to have optimized, patient-specific care."*

*Associate Professor of Radiology, University of Wisconsin-Madison*

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# Improving patient, member, and clinician experiences with AWS

AWS and AWS Partner solutions are helping to improve experiences for leading healthcare organizations such as [Children's Health Orange County](#), [Houston Methodist](#), and [MedStar Health](#). AWS helps customers improve healthcare experiences and support essential healthcare operations such as:

- Streamlining the exchange of patient information for better-coordinated care
- Creating real-time omnichannel engagement to drive personalized experiences
- Providing online and remote channels for easy, convenient access to care
- Increasing clinical efficiency with real-time speech recognition
- Ensuring the reliability, security, and privacy of health information

With tools that drive innovation throughout the healthcare ecosystem, AWS for Health is enabling better experiences for the patient throughout their healthcare journey, all over the world.

## Dive deeper

Explore patient and clinician experience solutions from AWS and AWS Partners, including [Virtual Care & Patient Engagement and Clinician Experience](#) >

## Featured partners





# Bringing medical research to the point of care

If the future of healthcare will be defined by precision-targeted therapeutics and personalized care plan options, new approaches to medical research will be key to making that future possible. Researchers will need transformative technologies that can process complex data at high rates, extract insights quickly, automate workflows to accelerate time to diagnosis, and provide leading-edge therapeutics at the point of care.

Migrating compute-intensive projects to the cloud to handle complex data at higher rates of production and consumption is dramatically improving business agility, streamlining research, and driving innovation, all of which are helping to improve the quality of healthcare for people around the world.

## Customers transforming the future of health with AWS



*"To establish this paradigm shift, from a primarily manual review of morphological features by experienced experts, to an objective, algorithmic approach using molecular genetics-based features, MLL partnered with the Amazon ML Solutions Lab to tackle this extraordinary feat. This work will lead to more cure and prolonged lifetime of all patients."*

*CEO, Munich Leukemia Lab*

**Read the case study ›**

# Empowering the next generation of medical research with AWS

Offering an extensive cloud infrastructure and the broadest range of compute, storage, and database options, AWS enables organizations across the health industry to optimize performance and costs—from benchtop to bedside. With AWS, researchers can quickly analyze massive data pipelines, store petabytes of data, and advance research using leading-edge technologies like AI/ML and Quantum.

Solutions and services from AWS and AWS Partners enable research teams to:

- Automate manual workflows
- Streamline the transfer of information between teams and partners
- Facilitate secure collaborations across datasets and across the globe
- Use analytics to maximize data liquidity
- Create integrated and secure research environments

## Dive deeper

[Explore healthcare and research solutions from AWS and AWS Partners ›](#)



## Featured partners

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**Deloitte.**



**slalom**

**virtusa**



# Balancing personalized healthcare with the bottom line

Healthcare organizations face the perennial challenge of controlling costs while putting the interests of patients, members, and clinicians first. Finance and operations departments charged with organizational forecasting, planning, and budgeting bear the responsibility of optimizing efficiencies while increasing revenue. To do this, they must proactively look for ways to restructure costs and keep them aligned with operational expenses. This will require new, efficient ways to manage the resource planning process as well as the processing of medical and claims data quickly and accurately.

To meet these challenges, healthcare organizations are turning to transformative technologies—tools that can manage large amounts of data and surface insights that allow finance and operations teams to quickly identify trends, productivity gaps, and opportunities for improvement.

## Customers transforming the future of health with AWS



*"We've seen much stronger performance for our database-backup workloads with the Amazon EBS st1 volumes, and we're also saving 75% on our monthly backup costs."*

*Director of Cloud Operations, Infor*

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*"After deploying SAP S/4HANA Finance on AWS, we produced our first quarterly reports 50% faster than with our old financial reporting system, which was largely manual."*

*Deputy CIO, Union Medical Healthcare*

**Read the case study ›**



# Streamlining finance and operations with AWS

AWS provides the compute power and capabilities needed to streamline workflows and help organizations meet their specific business and compliance requirements. Purpose-built solutions from AWS and AWS Partners can help operations and finance teams modernize with game-changing tools that enable them to capture financial data in real time, produce system-wide reports at a moment's notice, and have real-time visibility into how their decisions are impacting business operations.

With AWS, healthcare organizations can accelerate their transformation to a reliable, scalable, and secure cloud platform—helping them achieve new levels of efficiency and value.

## Dive deeper

Explore finance and operations solutions from AWS and AWS Partners, including Enterprise Resource Planning and Revenue & Claims Management >



## Featured partners





# Providing secure access to healthcare data

In the healthcare industry, where every second is critical, IT downtime can impact data access and cause interruptions in operational performance, resulting in patients not receiving the care they need when they need it. Healthcare providers need to have absolute confidence that their core IT is reliable and secure. That means having immediate access to data from any location at any time. It means being able to deploy a disaster recovery plan, maintain data security and compliance, and ensure maximum availability of their clinical workflows.

## Customers transforming the future of health with AWS



*EHR on AWS migration and configuration changes reduced CalvertHealth's RTO (recovery time objective) from 72 hours to under 2 hours—a 97 percent improvement. "...it lets us focus on more important things."*

*CIO, CalvertHealth*

**[Read the case study >](#)**



# Achieve efficiency and reliability with AWS

AWS and AWS Partner solutions help address core health IT challenges, enabling healthcare organizations to operate securely in a highly regulated global industry. Utilizing purpose-built solutions on the most reliable, secure, and trusted cloud platform, healthcare organizations can deploy disaster recovery plans, address fluctuating storage needs, ensure data access regardless of location, and improve operational performance system-wide.

AWS offers a comprehensive portfolio of services and solutions to modernize key areas of healthcare IT and operations, including:

- Security and compliance: AWS solutions offer unmatched protection of healthcare data to meet and even exceed global regulatory standards
- Cloud migration: Migrating operations to the cloud enables organizations to benefit from a trusted, reliable infrastructure without having to maintain physical data centers
- Interoperability: Eliminating data silos enables data-driven decision-making throughout the healthcare journey
- Virtualization and disaster recovery: Minimize downtime and data loss, mitigate damaging cyberattacks, including ransomware, and quickly recover from failures and server corruptions

Leading organizations, including [Centers for Medicare and Medicaid Services \(CMS\)](#), [Children's Health Orange County \(CHOC\)](#), and [NHS Digital](#), have modernized their core health IT by migrating mission-critical operations to the AWS Cloud. The result: improved business continuity, cost-efficiency, and performance across the healthcare workflow.

## Dive deeper

Explore core health IT solutions from AWS and AWS Partners, including Security & Compliance, Cloud Migration, Interoperability, and Virtualization & Disaster Recovery ›



## Featured partners





# Charting a path to personalized care with AWS

The era of personalized healthcare is here. At the intersection of clinical discoveries and cutting-edge technologies, healthcare organizations around the globe are innovating around a key component—the patient. These innovations are powering a personalized health movement, from customized, genome-informed medicines to technologies that bring medical care to their fingertips no matter where they are.

Targeted, individualized care improves patient outcomes and heralds a revolution in healthcare delivery. Industry leaders are leveraging the breadth and depth of AWS to deliver better, more efficient care, from diagnosis to aftercare.

See how health organizations are using AWS solutions to drive precision medicine and therapeutic development with a secure and flexible infrastructure designed for today's ever-changing healthcare needs.

**Learn more about AWS for Health ›**