



AWS in Healthcare

Solutions for healthcare providers, payors,
and health technology companies

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Who are we?



AWS for healthcare mission:

To enable access and delivery of **person-centered healthcare**, drive **improved outcomes** at a lower cost, and **accelerate the digitization and utilization** of healthcare data

Our team:

CHIEF DIGITAL OFFICERS, PHYSICIANS, NURSES,
CHIEF MEDICAL OFFICERS, CLINICAL INFORMATICISTS,
NEUROSCIENTISTS, PHARMACOLOGISTS, PROFESSORS, BIOCHEMISTS,
CHIEF EXECUTIVE OFFICERS, POPULATION HEALTH EXPERTS,
BIOINFORMATICISTS, RADIOLOGISTS, RESEARCHERS, PRINCIPAL
INVESTIGATORS, CHIEF ARCHITECTS, SOLUTIONS ARCHITECTS

18+

Years of experience,
on average, for our team
leaders in the healthcare
and life sciences industry



We are accomplishing this mission by:



Accelerating
healthcare
transformation



Fueling innovation and
unlocking insight



Enabling seamless care
delivery



Enhance national and
regional strategies

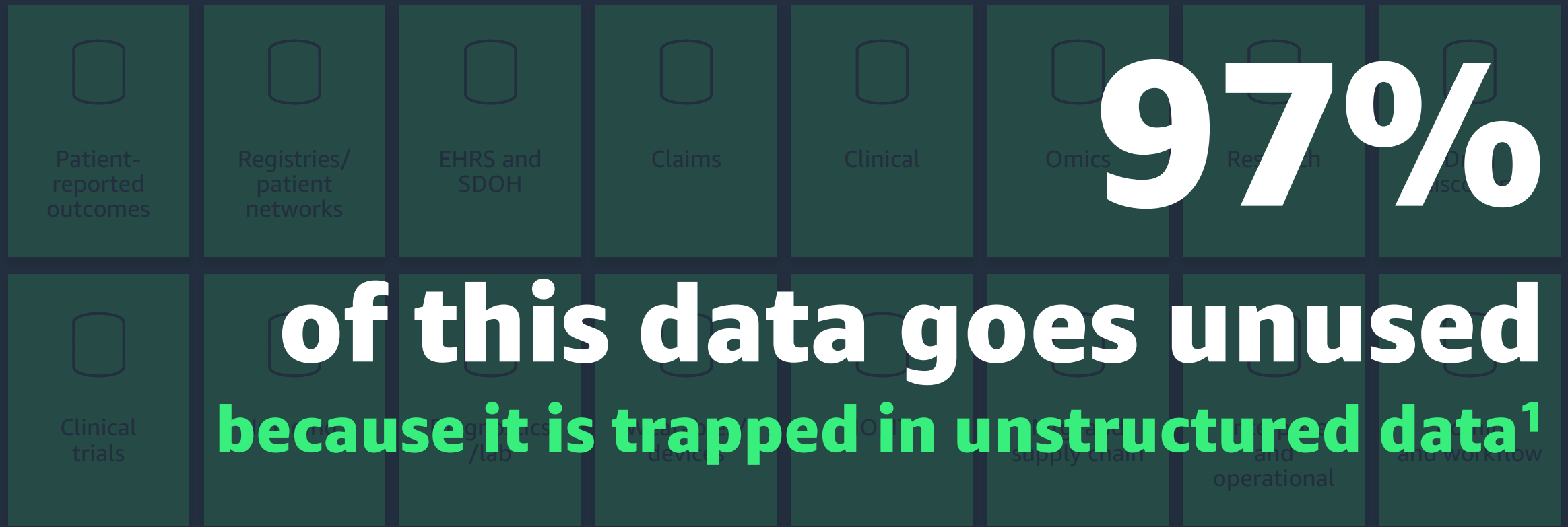
Why Healthcare in the cloud?

The need for personalized healthcare

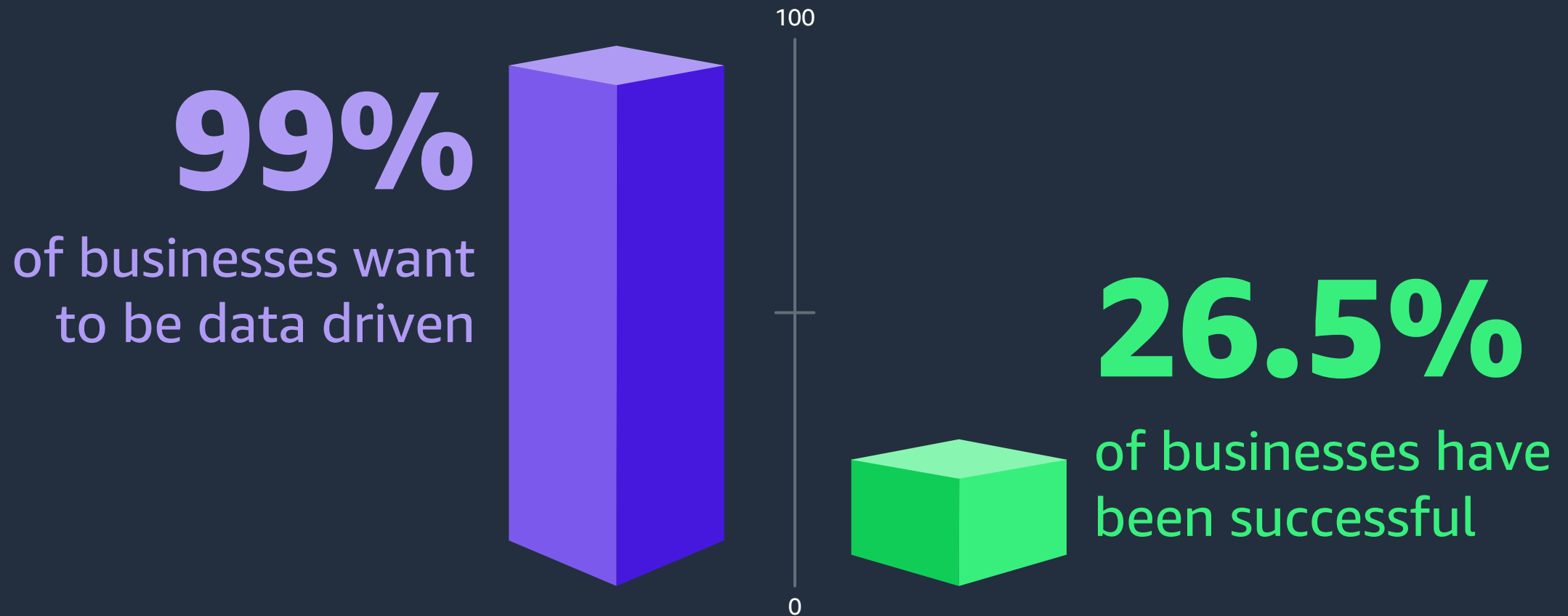
- Lack of personalized care can lead to unnecessary or ineffective treatments
- Clinicians are experiencing burnout
- Patients are expecting a more personal healthcare consumer experience



50 petabytes of healthcare data generated annually by hospitals



Data is a strategic asset for Healthcare organizations



The key to success: a comprehensive data strategy

PROTECT

Ensure data security, privacy, data sovereignty, and regulatory compliance



UNIFY

Data by breaking down silos and with secure, well-governed data access



MIGRATE & MODERNIZE

Data infrastructure with a scalable, trusted, and secure cloud provider



INNOVATE

By inventing new experiences and reimagining existing processes with HCLS industry-specific services

AWS helping to address key personalized healthcare trends

Modernizing the care infrastructure

Improving and accelerating diagnoses

Managing population health

Addressing gaps in care and health inequities

Leveraging the potential of Generative AI



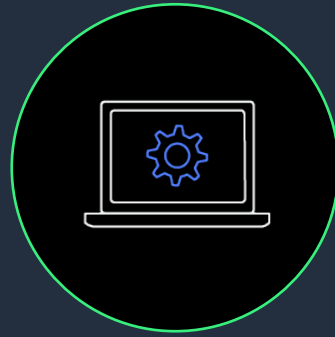
Healthcare industry challenges



Cost



**Workforce
shortage
and skills
gaps**



**Recovery
and
resiliency**

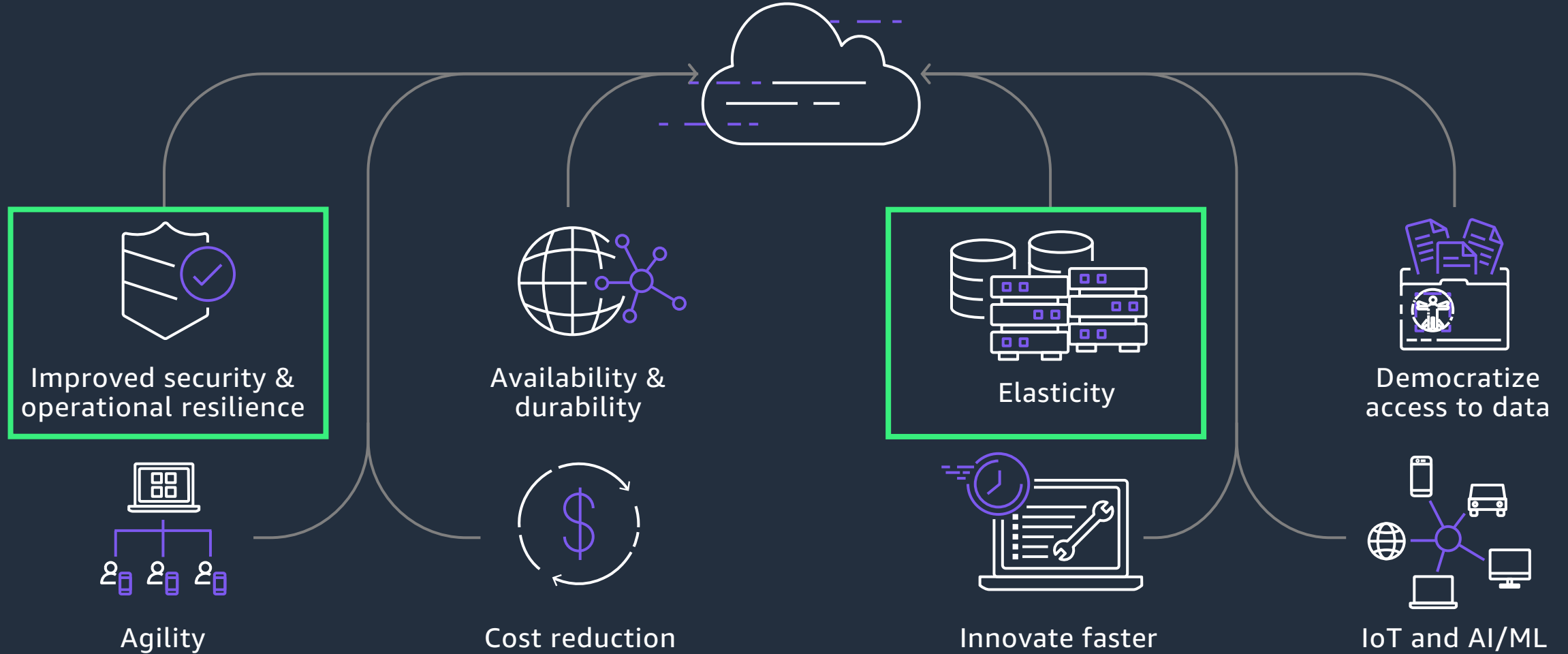


**Security and
privacy
regulations**

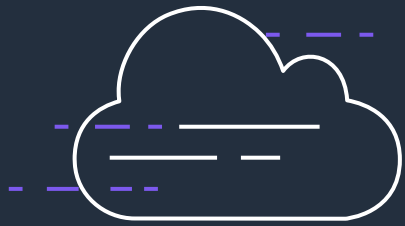


Sustainability

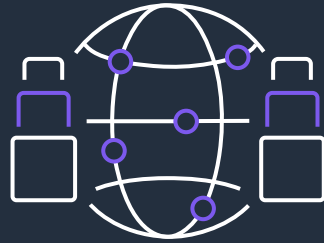
Healthcare in the AWS Cloud



What that means



Performance



Resilience



Security



Innovation

Innovations like Generative AI



Medical Research

Patient to trial matching

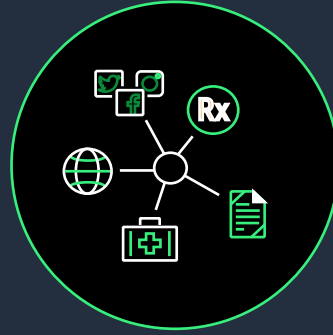
Multi-modal data analysis



Clinical Efficiency

Longitudinal patient records for full patient picture

Automate medical image interpretation



Operational Efficiency

Auto-generate referral letters, clinical coding, and prior authorization

Intelligent document processing



Patient Experience

Patient outcome prediction

Personalize patient discharge instructions and treatment plans



Digital Health

Patient care concierge

Remote care management

Improving patient care with machine learning at Beth Israel Deaconess Medical Center

Challenge:

Beth Israel Deaconess Medical Center (BIDMC) needed a way, within digital health records, to collect, recognize, correctly place documentation in file sections and automate flags of incomplete patient consent, history, and physical forms to decrease errors and processing time for staff.

Solution:

Using AWS machine learning and AI models electronic health records can be shared between facilities, scanned and filed, with flags being automatically sent to staff for follow-up on incomplete forms reducing errors, while alleviating potential surgery delays and staff resourcing bottle necks.

Benefits:

- Created cost efficiencies by reducing staff processing time
- Less re-scheduling and/or delays due to incomplete paperwork



"...using machine learning services like Amazon SageMaker, researchers at BIDMC will build deep learning models that are capable of making highly accurate predictions of where and when space will free up in the hospital for unexpected patients."

[Learn more](#)



Why AWS?

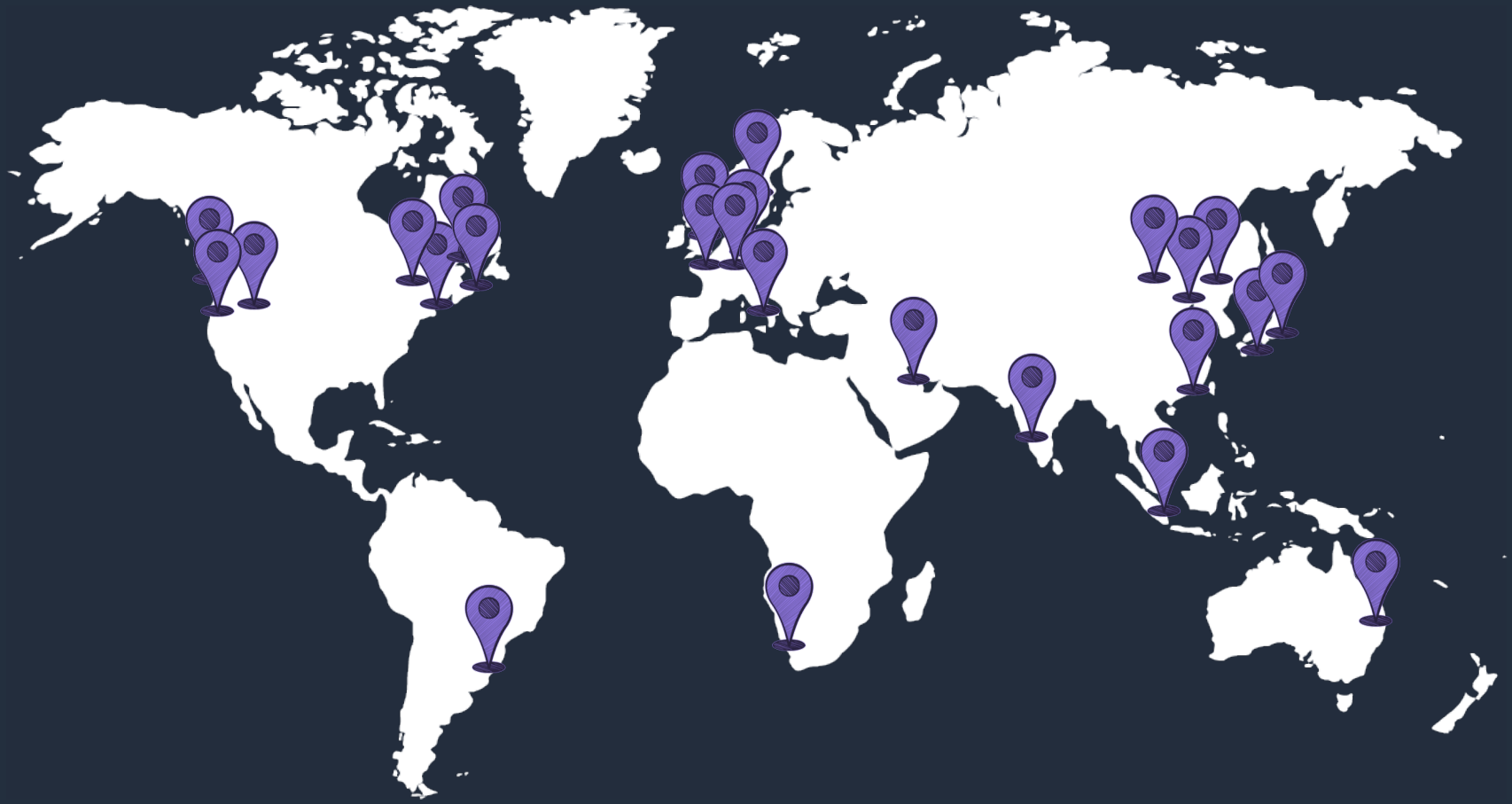


Global footprint

AWS Regions provide multiple, physically separated and isolated Availability Zones which are connected with low latency, high throughput, and highly redundant networking

31 Geographic regions

99 Availability Zones



Security and compliance specifically for healthcare



50+ global compliance
certifications and accreditations

HIPAA

Over 135 HIPAA eligible services

HITRUST

Over 137 HITRUST certified services

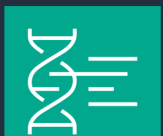


HITRUST



HITRUST
CSF Certified

Healthcare Purpose-built services



AWS HealthOmics

Transform genomic, transcriptomic, and other omics data into insights



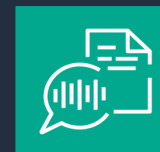
AWS HealthLake

Store, transform, transact, and analyze health data in minutes



AWS HealthImaging

Store, analyze, and share medical images in the cloud at petabyte scale



AWS HealthScribe

Auto-generate clinical notes from patient-clinician conversations

CHOP Optimizes Pediatric Patient Research Using AWS HealthOmics

Challenge:

The Children's Hospital of Philadelphia (CHOP) wanted to address the challenge of making multiomic data jointly accessible with other datasets, and then using technologies like artificial intelligence and machine learning for better diagnosis and treatment.

Solution:

CHOP uses AWS HealthOmics to analyze and generate insights from multiomic data—giving researchers more time for unlocking scientific discoveries to improve pediatric treatment and cure diseases. For patients, this translates to faster diagnoses, better treatments, and improved outcomes.

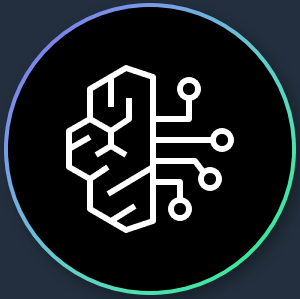
Benefits:

- Improved ability to index information more efficiently
- Facilitate the training of a new generation of physician-scientists and lab researchers in omics research
- Helps researchers get access to searchable datasets in minutes rather than days



“Using AWS HealthOmics, we can have all this data in one database and query it with just a click, saving hours, if not months, of work in finding genes.”

[Learn more](#)



Amazon Bedrock

The easiest way to build and scale
generative AI applications with
foundation models

Choice of leading FMs via single API

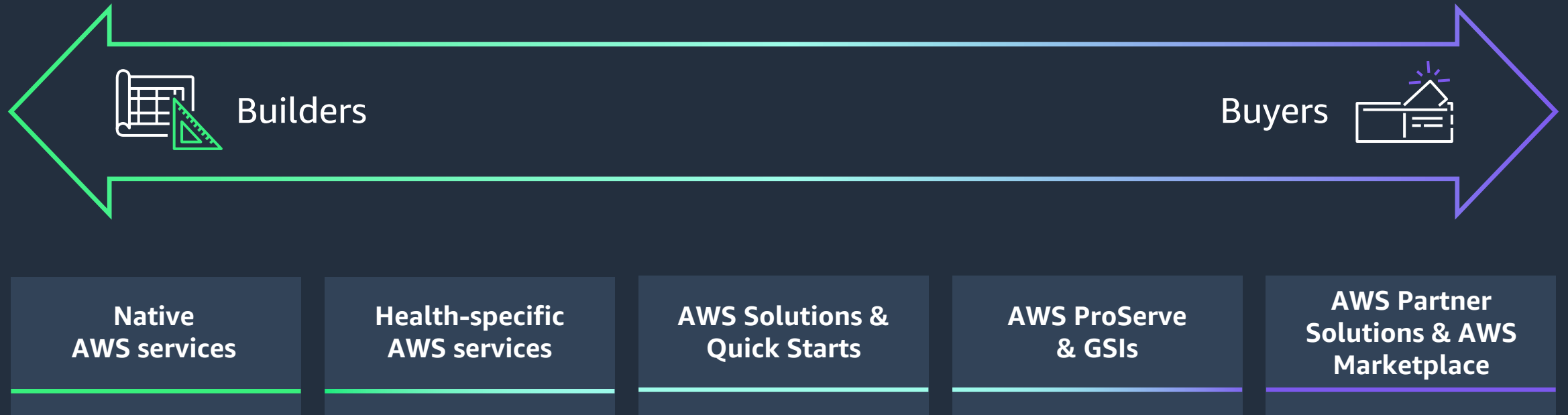
Model customization

Retrieval Augmented Generation (RAG)

Agents that execute multistep tasks

Security, privacy, and safety

Solutions for builders and buyers



AWS for Healthcare: making it easier



Clinical systems

- Electronic Health records
- Medical Imaging
- Clinical Genomics



Analytics & AI/ML

- Quality Metrics Reporting
- Disease Prevention
- Population Health
- Operational Optimization



Patient, clinician & member experience

- Patient Engagement
- Virtual Care
- Clinician Engagement



Medical research

- Medical Research



Finance & operations

- Enterprise Resource Planning
- Revenue and Claims Management



Core health IT

- Security & Regulatory
- Interoperability
- Disaster Recovery
- Migration
- Virtualization

Tufts Medicine migrates its entire digital healthcare ecosystem including Epic infrastructure to AWS cloud

Challenge:

Tufts Medicine was looking for ways to create a seamless environment for patients and care teams, supported by technologies that make it simple to access and navigate services, provide tools to manage illness, and minimize wait times.

Solution:

Tufts Medicine is migrating its entire digital healthcare ecosystem to create a digital platform on AWS. This platform consists of the infrastructure for Epic, as well as a complex integration of more than 300 supporting healthcare and business applications. Tufts Medicine's went live with Epic on AWS and an initial set of third party applications in April, 2022.

Benefits:

- Tufts Medicine is the largest organization to run the entirety of their Epic infrastructure on the AWS cloud
- Tufts Medicine can save as much as 20% each year (~ \$3 million) through this cloud-based modernization
- Tufts Medicine will improve provider and patient experience, bolster the security and reliability, and enable delivery of more personalized medicine

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."

[Learn more](#)



Modernize with confidence and innovate with ease



Deliver personalized healthcare



Drive patient, clinician, and member satisfaction



Achieve efficiencies in healthcare management and operations



Leverage the cloud to realize costs savings



Accelerate innovation



Unlock the value of data



Confidently respond and recover

Q&A





Please Provide Your Feedback

Thank you!

Bryan Marsh

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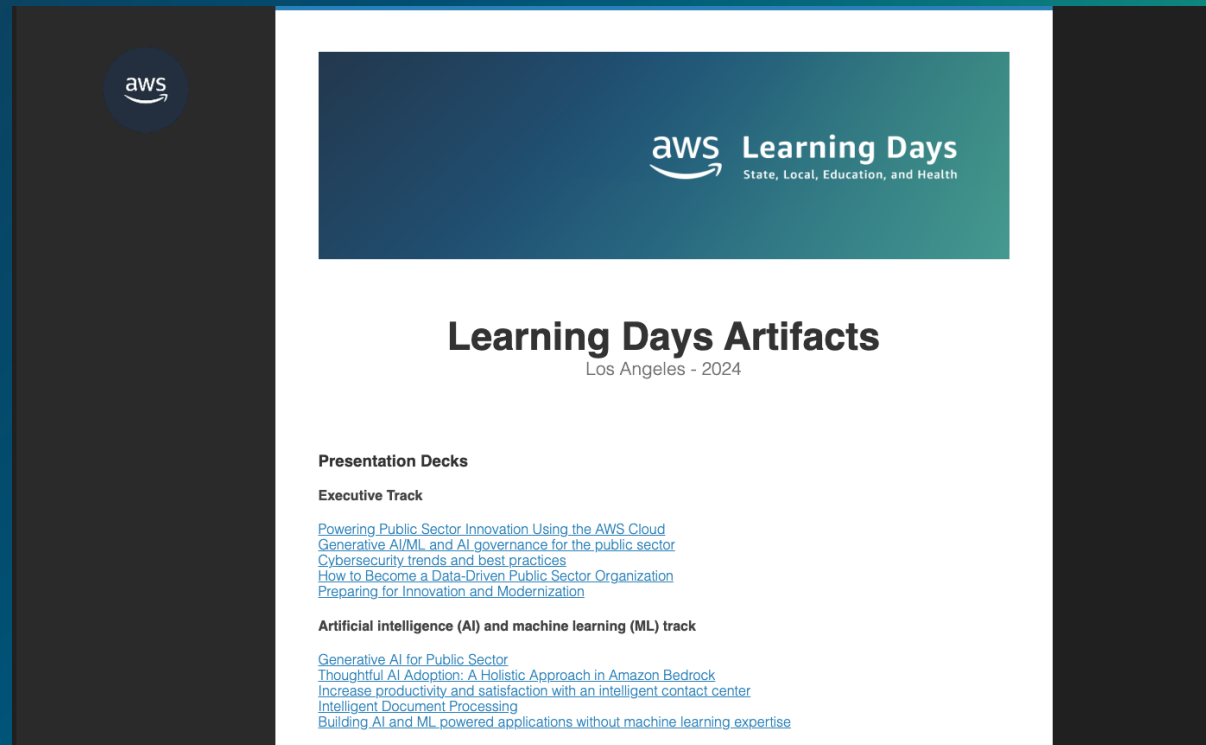


Step 1: Select Healthcare

Step 2: Select AWS in Healthcare

Learning Day Content

<https://sanfrancisco2024.awslearningday.com/>



Appendix