AWS Ramp-Up Guide: Public Health

For Epidemiologists, Public Health Informaticians, and Bioinformaticians

This guide collects cloud-computing learning resources relevant to the needs of a public health organization - specifically for applied epidemiologists, public health informaticians, and bioinformaticians.   The **Epidemiologist** path is designed for public health staff who use information systems, survey tools, and other mechanisms to collect qualitative and quantitative data relevant to epidemiologic studies and public health surveillance. They analyze those data with a variety of open source and licensed solutions. The **Public Health Informatician** path focuses on staff who establish information systems to collect and store data, and transform those data into information for decision-making. The **Bioinformatician** path assumes that these data scientists of the laboratory are building data systems to manage genomic sequencing pipelines, building the pipelines themselves, and performing other analytics with laboratory, epidemiologic, and clinical data.

Share your opinion of this Ramp-Up Guide!

Learn the Fundamentals of the AWS Cloud

Learning Resource	Duration (_hrs_)	Type
AWS Cloud Practitioner Essentials...or...	6.0	Digital Training
AWS Technical Essentials	4.0	Digital Training

For Epidemiologists...

Analytics in the Cloud

Learning Resource	Duration (_hrs_)	Type
Data Analytics Fundamentals	3.5	Digital Training
Getting Started with AWS Glue	1.0	Digital Training
Getting Started with Amazon QuickSight	1.0	Digital Training
AWS Foundations: Machine Learning Basics	0.5	Digital Training
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Reduce burden in public health with artificial intelligence (AI)

Learning Resource	Duration (_hrs_)	Type
Twitch Series: AWS Power Hour Introduction to Machine Learning for Developers	1.0	Digital Training
Twitch Series: AWS Power Hour Amazon Textract	1.0	Digital Training
Twitch Series: AWS Power Hour Amazon Comprehend	1.0	Digital Training
Twitch Series: AWS Power Hour Amazon Connect & Amazon Lex	1.0	Digital Training
Introduction to Amazon Pinpoint	0.2	Digital Training
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For Public Health Informaticians...

Modern data analytics for public health

Learning Resource	Duration (*hrs*)	Type
Data Analytics Fundamentals	2.5	Digital Training
Getting Started with AWS Glue	1.0	Digital Training
AWS Foundations: How Amazon SageMaker Can Help	0.5	Digital Training
Getting Started with Amazon QuickSight	1.0	Digital Training
Introduction to Amazon Simple Notification Service	0.2	Digital Training

Networking and Security

Learning Resource	Duration (*hrs*)	Type
Introduction to Amazon CloudFront	0.2	Digital Training
Introduction to Amazon API Gateway	0.2	Digital Training
Machine Learning Security	2.0	Digital Training

Data transfer and storage

Learning Resource	Duration (*hrs*)	Type
AWS DataSync Primer	1.0	Digital Training
Amazon Simple Storage Service (Amazon S3) Cost Optimization	1.0	Digital Training

Data management and analysis

Learning Resource	Duration (*hrs*)	Type
Data Analytics Fundamentals	3.5	Digital Training
Getting Started with AWS Glue	1.0	Digital Training
Introduction to Amazon Athena	0.2	Digital Training
AWS Foundations: How Amazon SageMaker Can Help	0.5	Digital Training
Getting Started with Amazon QuickSight	1.0	Digital Training

For all Public Health Roles...

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Additional Resources	
Learning Resource	**Type**
What is Cloud Computing?	Video
What is AWS?	Webpage
Modern Data Architecture	Webpage
What is a data lake?	Webpage
AWS Glossary	Webpage
Generate ML predictions directly in Amazon SageMaker Canvas	Video
Create your RStudio on Amazon SageMaker licensed or trial environment in 3 easy steps	Blog
Extract Health Data - Amazon Comprehend Medical - AWS Online Tech Talks	Tech Talk
Understanding and achieving a modern data architecture (re:Invent 2022)	Video
Enabling agility with data governance on AWS	Video
U.S. Census brings nationwide count to the AWS Cloud	Blog
Registry of Open Data on AWS	Webpage
AWS state and local government public health cloud resources	Webpage
Simplifying Permissions & Governance in your Data Lakes	Video
Geospatial ML with Amazon Sagemaker	Video
Implement RStudio on your AWS environment and access your data lake using AWS Lake Formation permissions	Blog
Automatically extracting email attachment data to reduce costs and save time for local public health departments	Blog
Extract Health Data - Amazon Comprehend Medical - AWS Online Tech Talks	Tech Talk
Easy Genomics Solution for Public Health Labs	Blog
Part 1: Introducing Amazon Omics—from sequence data to insights, securely and at scale	Blog
Part 2: Automated End-to-End Genomics Data Storage and Analysis using Amazon Omics	Blog
Amazon Omics Workshop End-to-End	Workshop