
AWS
re:Invent
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Integrate and derive insights from multi-modal health data

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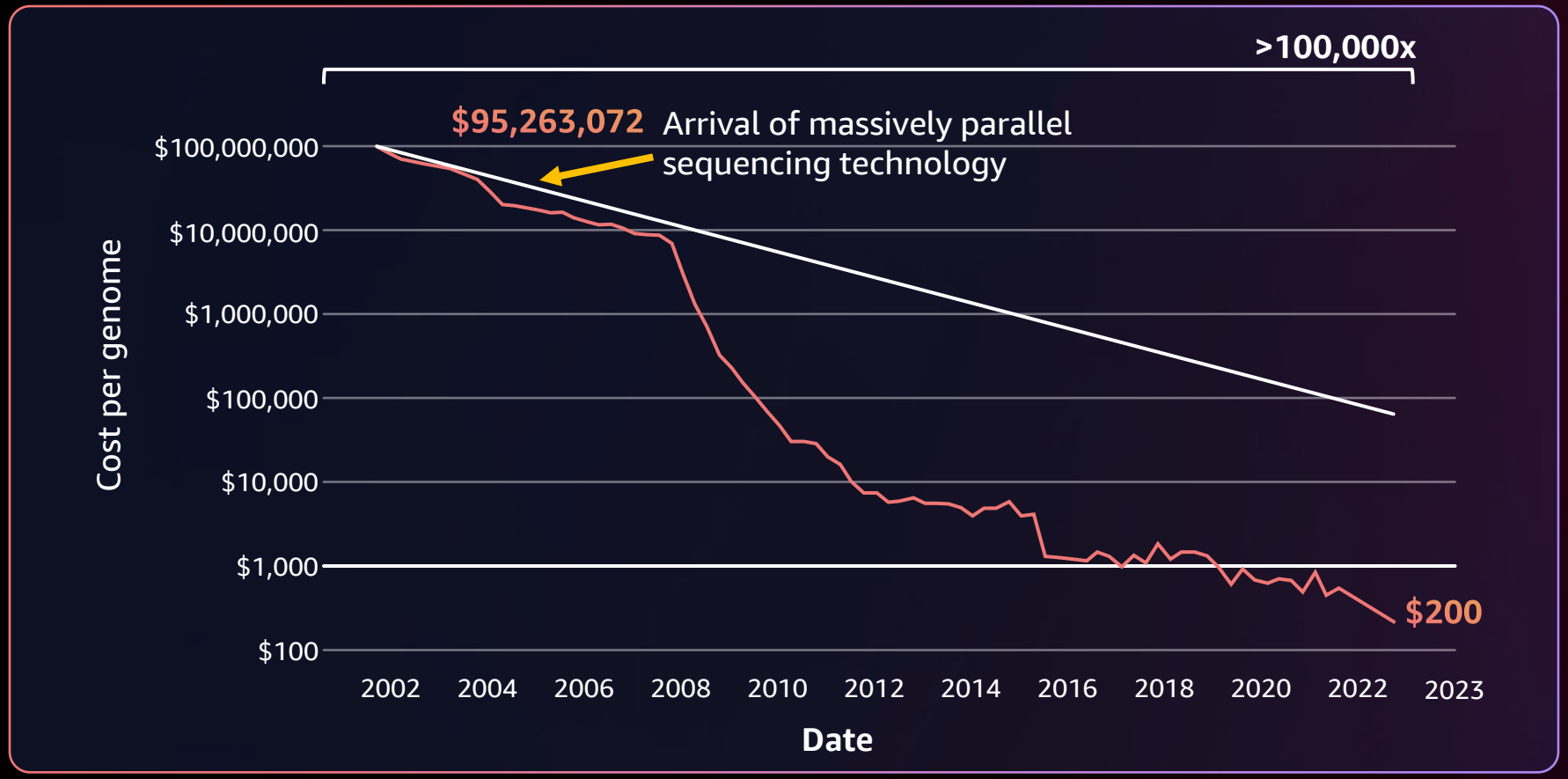
Agenda

- The landscape: Digitization of health data
- New purpose-built services and capabilities
- The case study: Lung cancer
- Demo
- Q&A

Cost per human genome

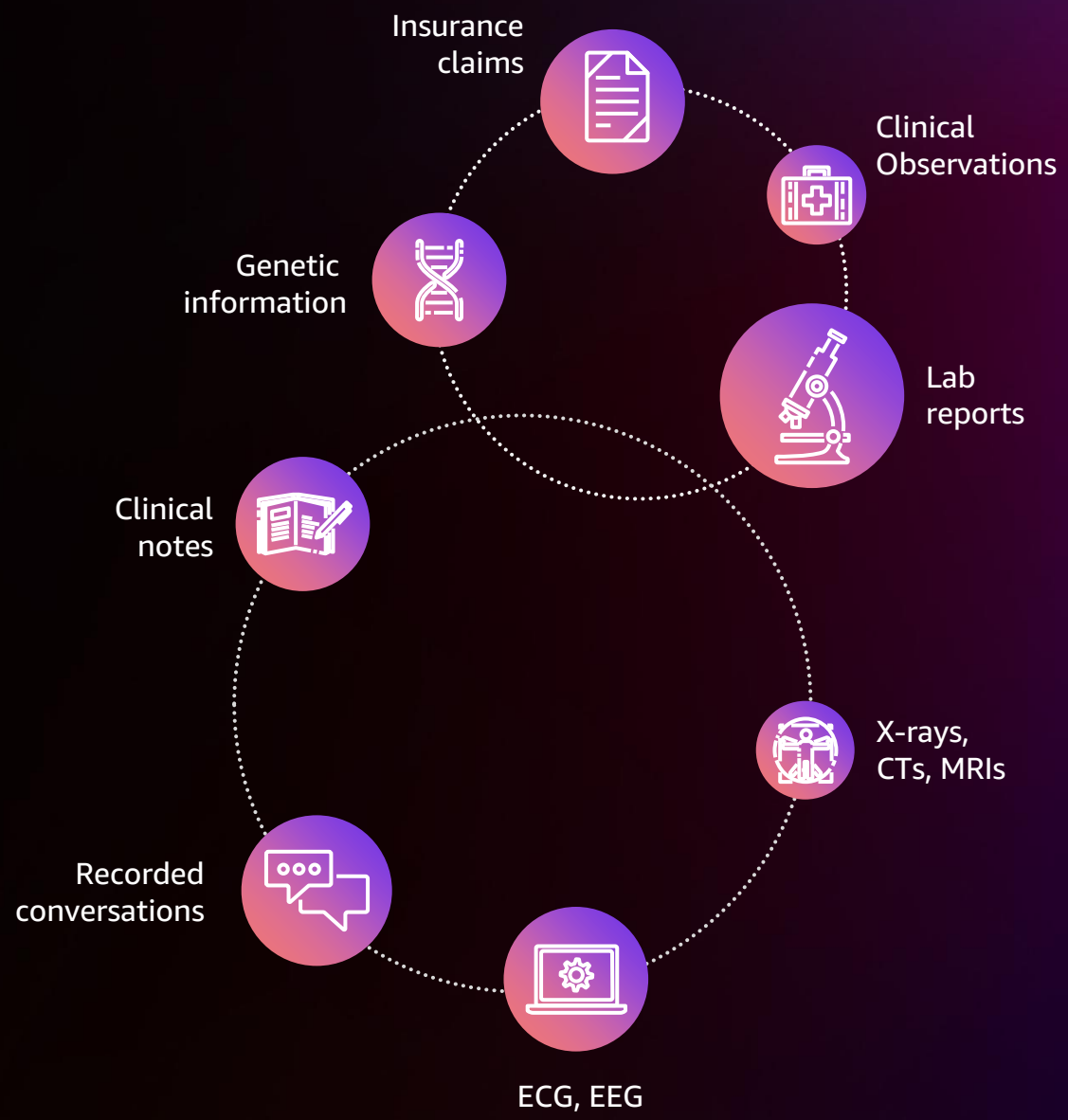


“The good physician treats the disease; the great physician treats the patient who has the disease.”

Sir William Osler

Patients today walk around with thousands of data points collected throughout their health journey

97% of health data goes unused because it is trapped in unstructured data

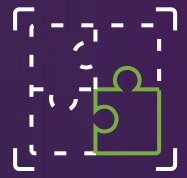


Making sense of multi-modal data

Harness this complex set of multi-modal data to make meaningful progress in precision medicine and advance scientific discoveries

Operate more efficiently

Detect disease early



Design better clinical trials

Track disease progression at individual and population levels

New purpose-built services and capabilities

Combine multi-modal data and generate insights

Helps healthcare and life science organizations transform genomic, transcriptomic, and other omics data into insights

Amazon Omics

New analytics capabilities that offer healthcare and life sciences companies a complete view of individual or patient population health data

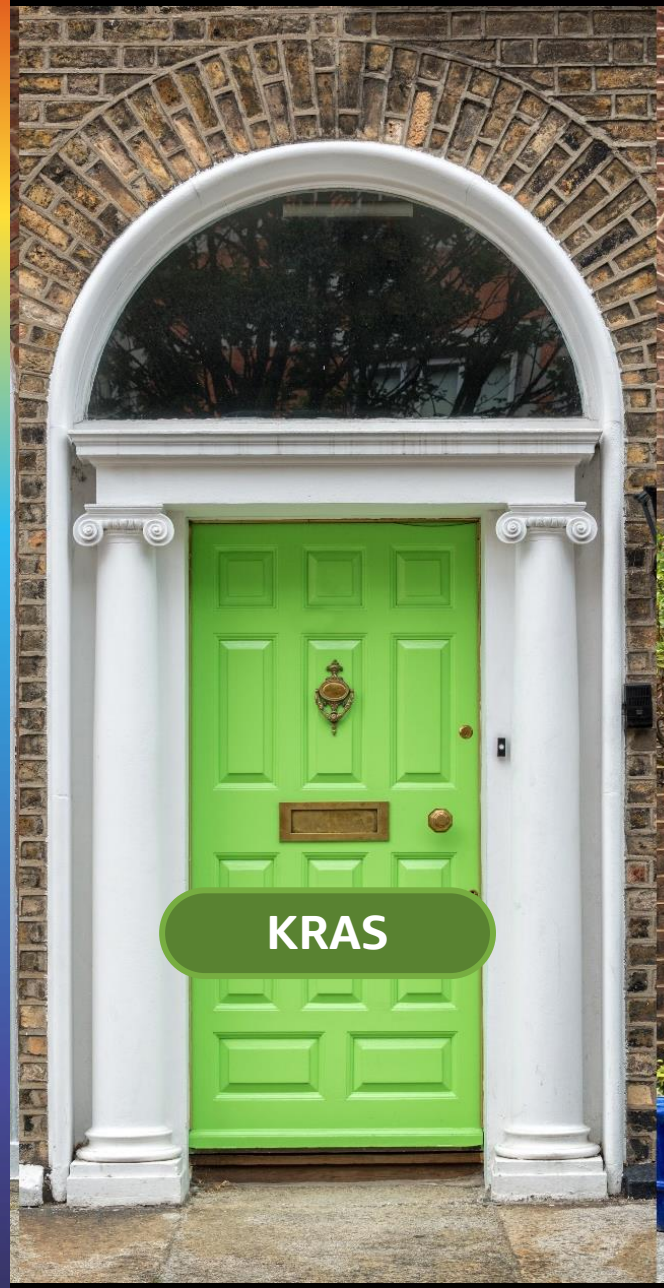
Amazon HealthLake Analytics

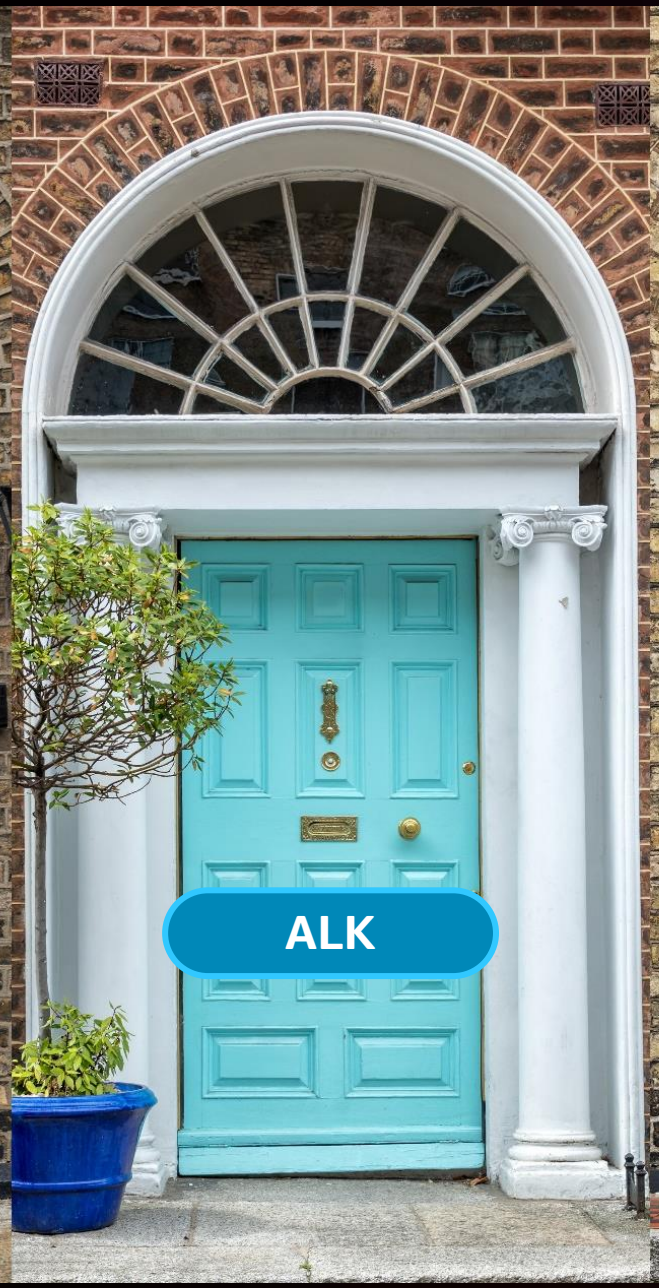
Enables healthcare providers and their software partners to easily store, share, and analyze medical images at petabyte scale

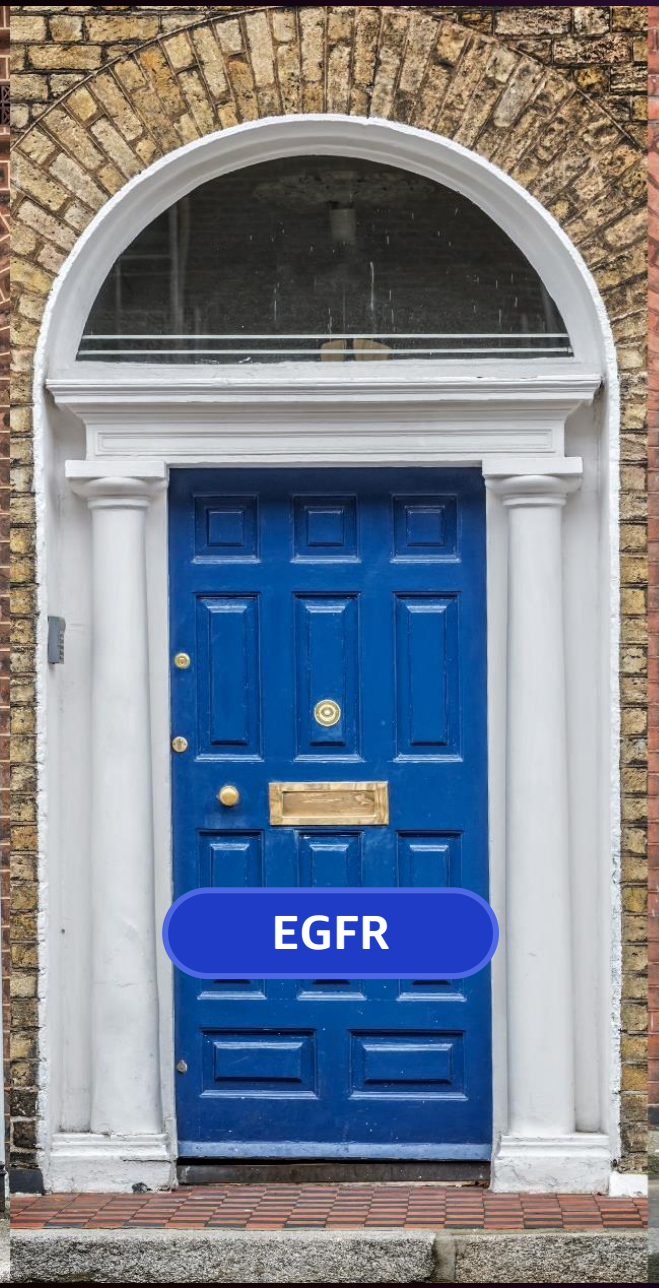
Amazon HealthLake Imaging

Example: Lung cancer

85% of patients with lung cancer have a type known as non–small cell lung cancer

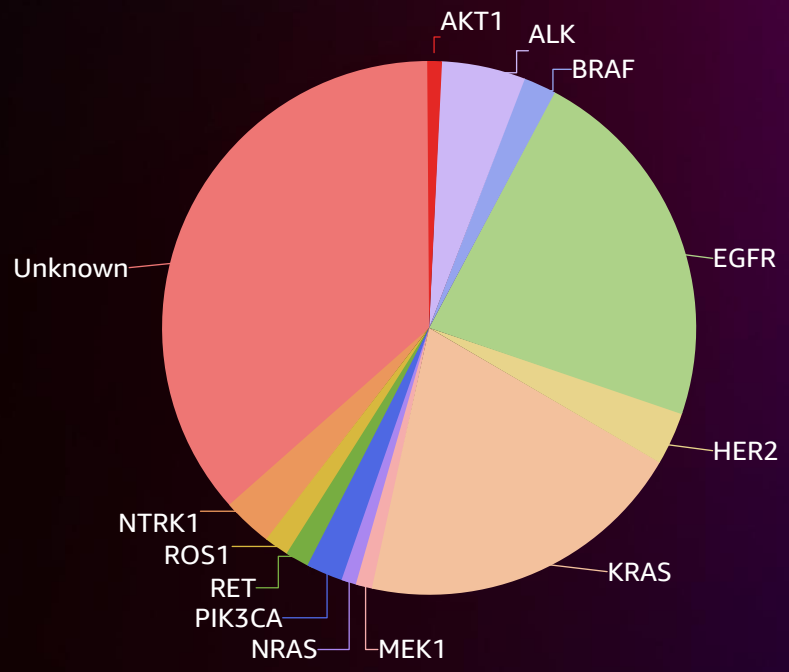






Personalizing cancer diagnosis

Different people's tumors have different biomarkers



Biomarkers commonly found in non–small cell lung cancer

Personalizing cancer care

PDL-1 inhibitors used in NSCLC

Durvalumab (Imfinzi)
Pembrolizumab (Keytruda)
Nivolumab (Opdivo)
Ipilimumab (Yervoy)

EGFR inhibitors used in NSCLC

Erlotinib (Tarceva)
Afatinib (Gilotrif)
Gefitinib (Iressa)
Osimertinib (Tagrisso)
Dacomitinib (Vizimpro)

KRAS inhibitor used in NSCLC

Sotorasib (Lumakras)

Identify sub-groups of patients for whom select drugs are most effective and safe, based on their biomarkers

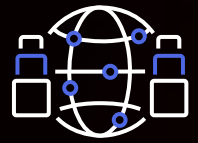
Demo

Piecing together a holistic view

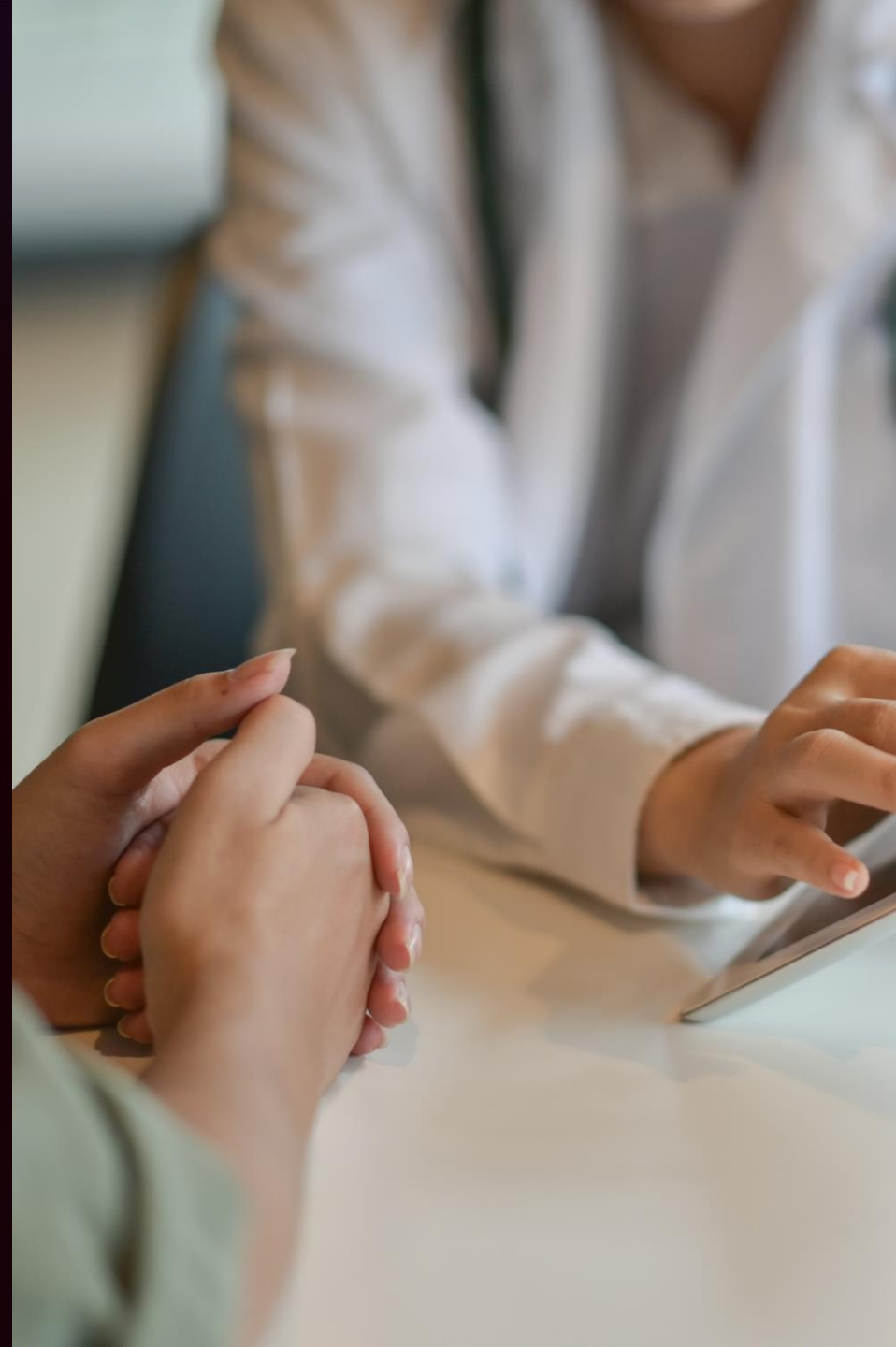
of a patient's entire medical history

Medical record data

Genome and patho-biology of disease (DNA)



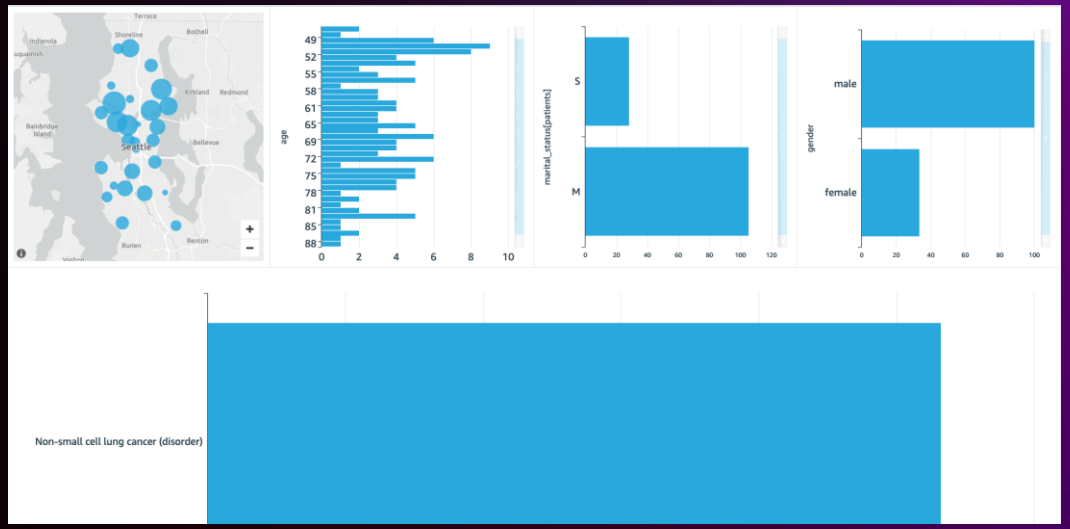
Population data



Amazon Omics

Amazon HealthLake Analytics

Amazon HealthLake Imaging



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1	HG00110	EGFR:1956	Likely_pathogenic|_drug_response	chr7	55174013	G	[C]
2	HG00099	EGFR:1956	Likely_pathogenic|_drug_response	chr7	55174013	G	[C]
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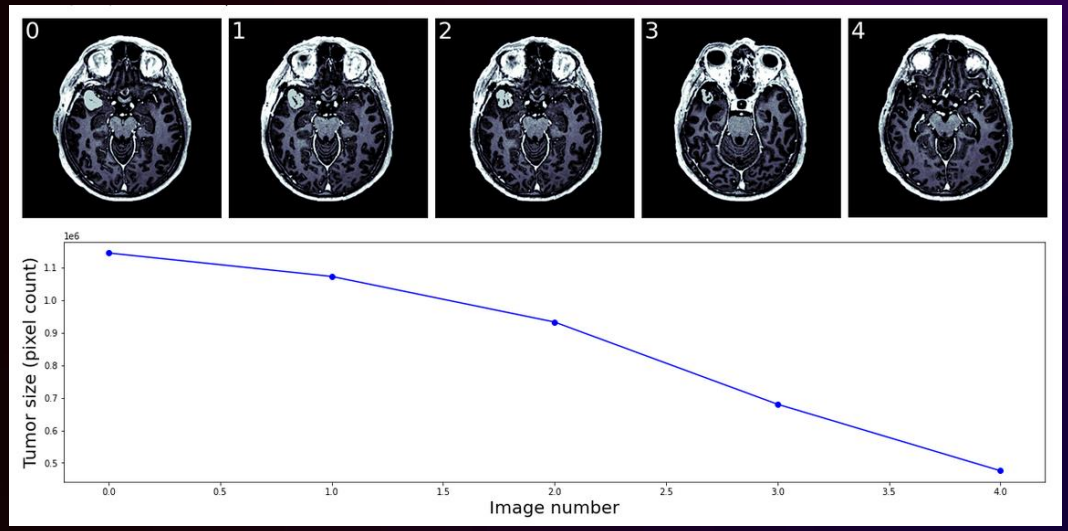

Next steps

Amazon HealthLake

Amazon Omics

Learn more about our purpose-built healthcare and life science services

Learn more about the role of AI and ML in healthcare and life sciences

Thank you!

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