

Accelerating the Use of Pathogen Genomics and Metagenomics
in Public Health

A Workshop

*Panel Session 4: Privacy, Ownership,
and Democratization Considerations*

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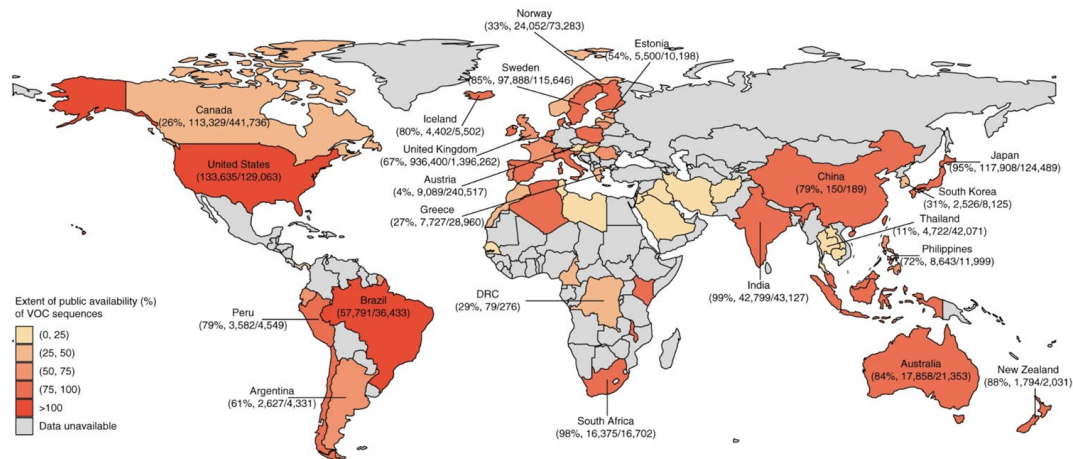
Democratization of pathogen genomics—a longstanding challenge

Common barriers

- Cost
- Perceived value
- Perceived risks
- Technical capacity, access
- Expertise siloes
- Ownership, contribution, attribution

Fig. 3: The extent of public availability of VOC sequences in public repositories.

From: [Global landscape of SARS-CoV-2 genomic surveillance and data sharing](#)



From: *Global landscape of SARS-CoV-2 genomic surveillance and data sharing*, Chen et al, Nature Genetics volume 54 (2022)

Integrated workforce development

PGCoE National Education Program

Curriculum: Gaps & Priorities

**Increase
Awareness &
Buy-In**

*for the value of genomics in
epidemiology*

Reduce Silos

*by providing opportunities for
cross training among workforce
cadres*

**Instincts,
Not Rules**

*empower the workforce to use
foundational theory to make
decisions*

**Teach
Meaningful Data
Interpretation**

*especially in the context of
combining genomic and
epidemiology data*

*From E. Heppenheimer,
PGCoE Lead Education Program content lead*



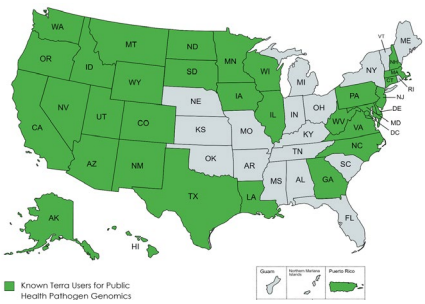
- De-siloing learning pathways
- Generalizing principles, inference, caveats
- Connecting genomic data to decision making



Data handling and analysis capacity

Terra Data Platform enables (genomic) data management analysis in the cloud

- Secure, scalable owner-controlled data management, sharing, collaboration
- Accessible to low/no code users
- Using open source, containerized workflows based on vetted community standards
- Standardized, reproducible, interoperable, auditable bioinformatic analyses



Procurement of reagents and tech support in LMICs

nature index

COMMENT · 2 JULY 2024

Slow, difficult and expensive: How the lab supplies market is crippling African science

Higher prices and longer wait times for basic equipment are hampering research. Here's how funders, governments, institutions and manufacturers can make a difference.

Allen Mukhwana, Oluwaseyi Shorinola, Deborah-Fay Ndlovu and Julius Osaso

- 3-6 mo wait for reagents is not uncommon, often at 2-10x cost
- Logistical challenges and delays, lack economies of scale, supply chain, importation and customs infrastructure
- Tech support often based in other countries, continents
- Use connections in the global north to obtain supplies and support, which shifts the balance of power and exacerbates the problem

BUSINESS INSIDER

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You aren't legally allowed to know which variant gave you COVID-19 in the US, even if it's Delta

Aria Bendix Aug 23, 2021, 8:02 AM



- Most people with COVID-19 in the US are legally prevented from knowing which variant infected them.
- That's because sequencing tests have to be federally approved for results to be disclosed to doctors or patients, and most are not yet.
- Lab scientists say the process of validating the tests for approval is too costly and time-consuming.

Many thanks to the global pathogen genomic surveillance community, these invaluable data resources, and engaged funders

