LONDON SCHOOL of HYGIENE &TROPICAL MEDICINE

Whole Genome Sequence Resource

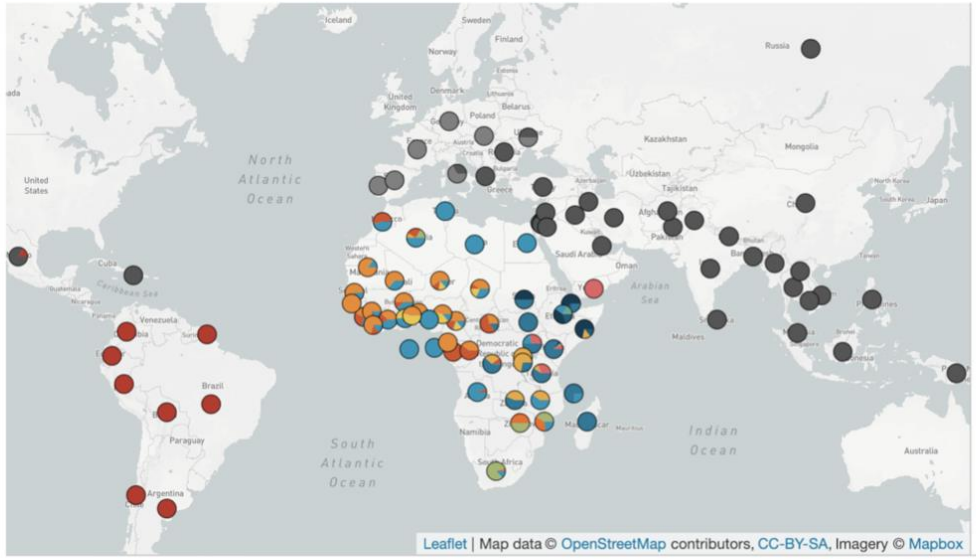
Nick Thomson

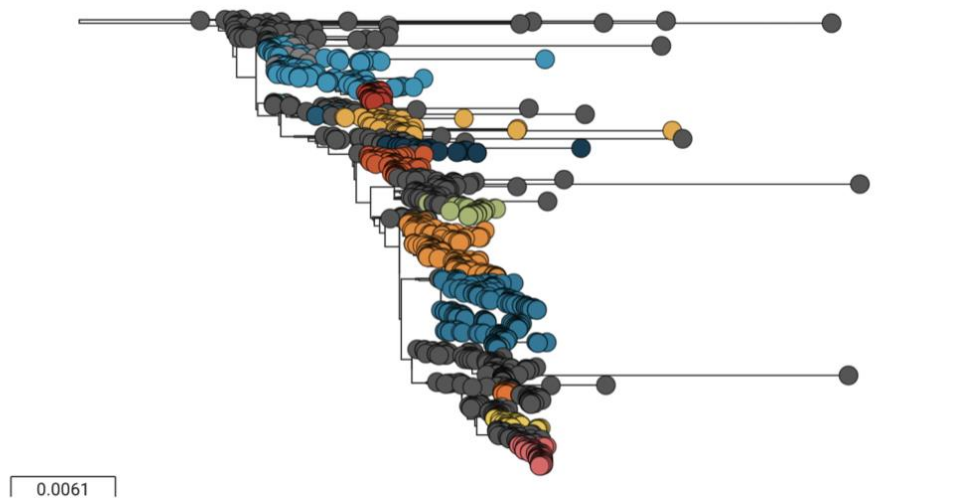
15th April 2019

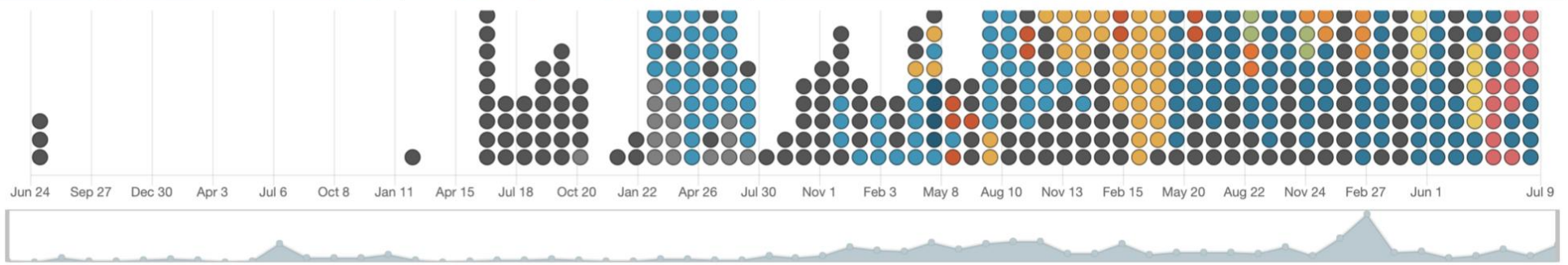
wellcome sanger institute

Microreact - Global cholera

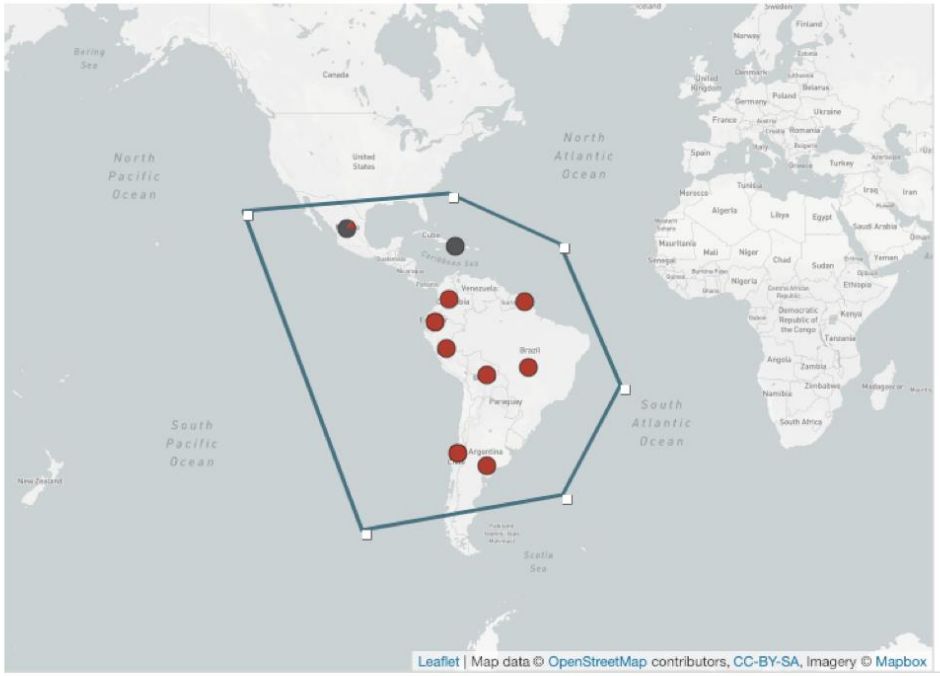
https://microreact.org/project/globalcholera

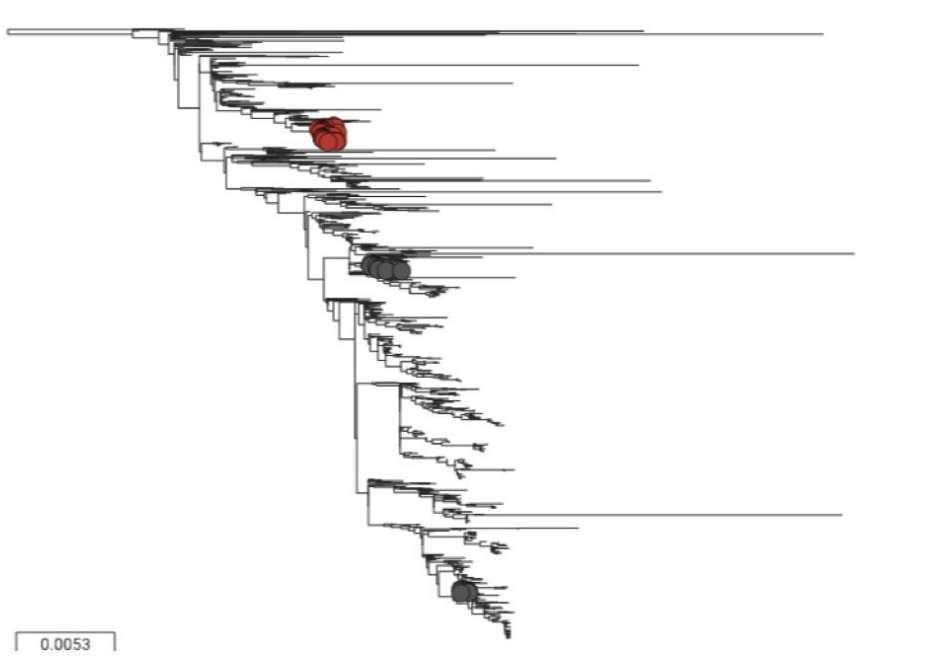


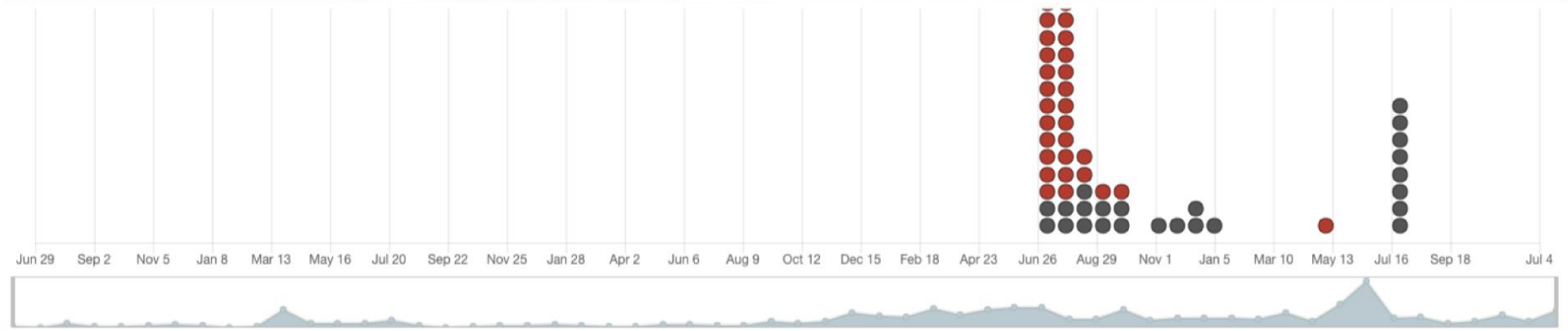




Microreact - Latin American samples







Centre for Genomic Pathogen Surveillance

Pathogenwatch

A global platform for genomic surveillance.

- Fast predictions of resistant genotypes and clustering.
- Real-time analytics and genomic epidemiology.
- Facilitates processing, clustering and exploration of whole genome assemblies.

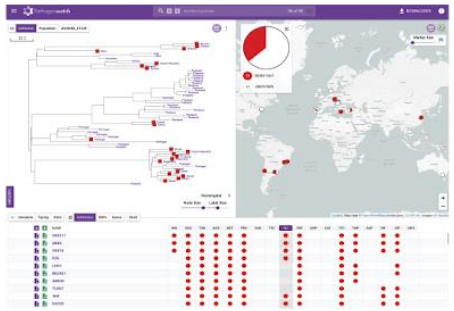
http://pathogen.watch

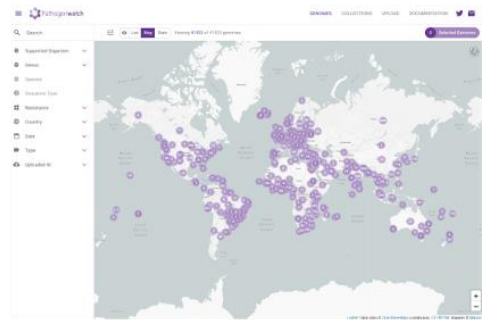
Analyse data from anywhere

or

linked epi metadata

Pathogenwatch





Genome Report
Risk Markers (eg AMR)
Typing

Collections
Risk Markers (eg AMR)
Genome Neighbors

Global analytics
Trends

Individual

Population

1

2 3

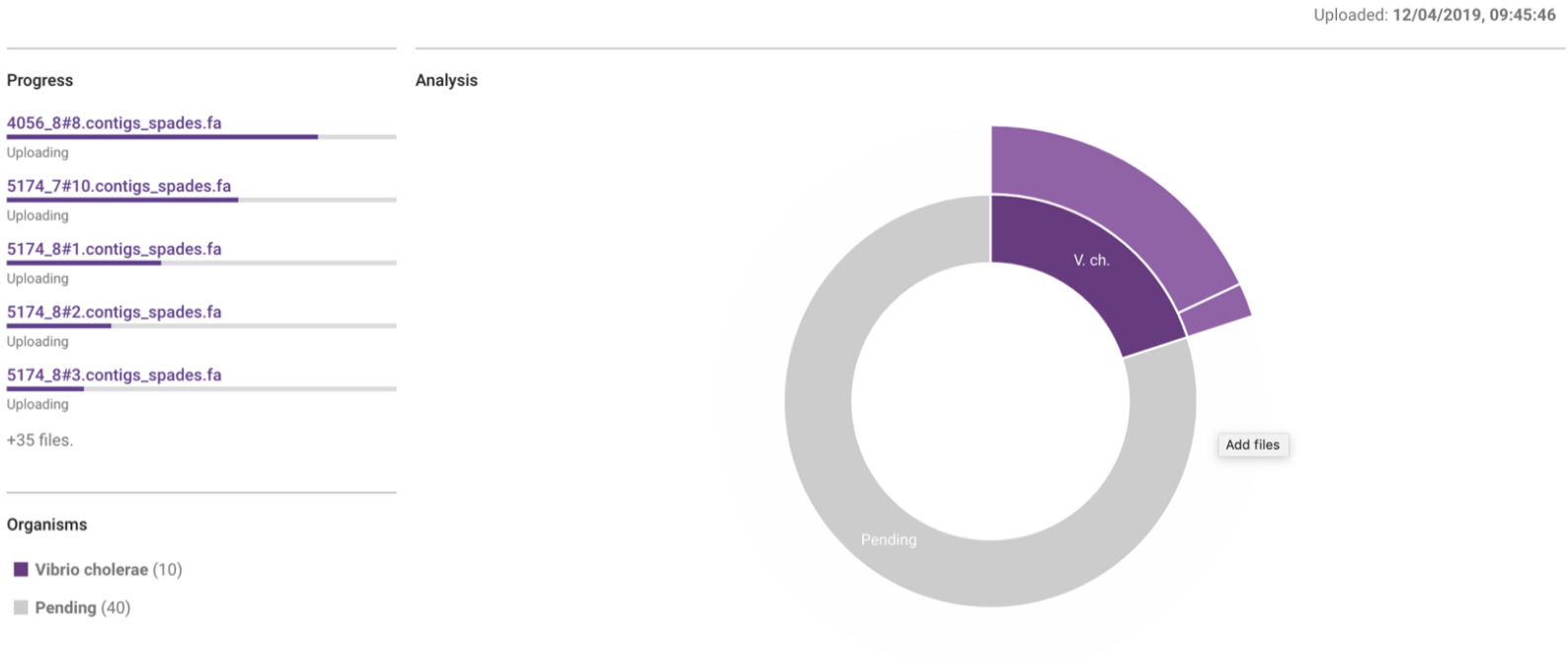
3

Use Cases

Uploading Genomes to Pathogenwatch

https://pathogen.watch/upload

Needs genomes in FastA format & metadata in csv format (including filename, GPS location (if available), sampling date and other available data



Drag and drop files to begin.

Genomic Data

One or more **assemblies** in multi-FASTA format with one of the following extensions:

.fa, .fas, .fna, .ffn, .faa, .frn, .fasta, .genome, .contig, .dna

Please ensure that there is **one file per genome**.

Settings

Enable Compression

Recommended for slow connections.

Upload Files Individually

Recommended for unstable connections.

Metadata

Files in CSV format with the extension **.csv**.

Files should contain a column **filename** containing the names of genome files uploaded at the same time.

To make full use of metadata, we strongly recommend including the following columns:

latitude, longitude, year, month, day

When providing a date, month and day are optional. Additional metadata may be included and will be saved.

CSV Templates

General

Salmonella Typhi

The Centre for Genomic Pathogen Surveillance (CGPS)

About

Groups

Tools and Data

Partners

Programmes and Facilities

Our mission is to inform pathogen control strategies and interventions on a local, national and international scale.

About the Partnership

Through our global research partnerships with the US CDC, the European CDC, the World Health Organisation and Food and Agriculture Organisation, National Institutes of Health and Public Health England we are helping lead the fight against high risk microbial pathogens with a focus on antimicrobial resistance (AMR) – one of the biggest threats to global health security.

We achieve our mission through a combination of structured population surveys and whole genome sequencing to generate high quality openly available surveillance data and identify high risk clones; by developing software tools and technologies that make data visualisation and interpretation accessible to all; and by investing in capacity building across low- and middle-income countries (LMICs), helping to train future leaders of new national and emerging surveillance programmes.

Learn more at the CGPS website.

Meet the Team

Our international and diverse team brings together expertise in data modelling, software development, epidemiology, bioinformatics and machine learning, genomic technology, Good Financial Grant Practice (GFGP), training and capacity building.

External site

- Centre for Genomic Pathogen Surveillance

Contact

cgps@sanger.ac.uk

Meet the Team

Go to

Professor David Aanensen
Director

Provides data and tools for local and international utility, focusing on AMR and genomic surveillance.

Dr. Monica Abrudan
Postdoctoral Fellow - Data Modelling

Focuses on the occurrence of high-risk antimicrobial resistant clones.

Dr. Khalil Abudahab
Principal Software Developer

A full-stack developer who enjoys engineering software for data visualisation and integration.

Dr. Silvia Argimón
Genomic Epidemiologist

Analyses pathogen populations to understand the global spread of AMR.

Dr. Sophia David
Postdoctoral Fellow - Epidemiology

Primary focus on carbapenemase-producing Enterobacteriaceae, a group of bacteria that can resist last-

Richard Goater
Principal Software Developer

Leads development on the centre's visual outputs, and works on all layers of the software stack.

Harry Harste
Finance Implementation Manager

Manages teams, budgets, financial and operational systems, policies, processes and procedures.

Jonathon Hawkins
Software Developer

Specialist in building robust data portals, automation, and utilising AWS to provide real-time reporting.

Bacterial Genomes: Accessing and Analysing Microbial Genome Data

04 February - 09 June 2019

Online, FutureLearn platform

Use computational tools to investigate microbial genomes