UK Health Security Agency

Technology Opportunities to Support the Genomics Programme

UKHSA Conference 2023

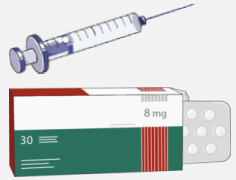
Genomics Programme

Overview

What this work is

Pathogen genomics is the study of the genetic material of micro-organisms that cause infectious diseases. It generates lots of data.

When this information is combined with other scientific, clinical, public health, environmental health data and research, we can better understand the pathogen.



This informs how clinicians and public health specialists use or develop vaccines, antibiotics and respond appropriately to outbreaks.

Key outcomes we are expecting as a result of this work

1. Transforming UKHSA services based on **scientific evidence, clinical and public health priorities and horizon scanning** intelligence for new and emerging threats.
2. Delivering standards, frameworks and guidelines that **will ensure quality and comparability** in the end-to-end delivery of pathogen genomics.
3. Establish **robust governance and decision-making processes** in collaboration with public health functions, laboratory services and data and analytics, bringing together oversight and expertise across genomics' end-to-end processes.
4. Delivering a **sustainable, resilient infrastructure** for data, informatics and analytical architecture.
5. Retaining talent and **empowered local workforces** through upskilling and training with development opportunities.

Technology Opportunities

✓ Delivered
⏳ In progress
■ Not started

Year one – stabilisation:

⏳ • Build the expertise in the team by recruiting High Performance Compute (HPC) engineers.
⏳ • Build the resilience of the infrastructure supporting Genomics by refreshing the network hardware, strengthening the network and increasing resilience.
⏳ • Conduct a review of the architecture supporting Genomics to identify areas for improvement, feeding into Year two deliverables.

Year two – development:

■ • Deliver a cloud ingress environment.
■ • Deliver HPC development and test environments.
■ • Support the delivery of a new pipeline for Bioinformatics.

Year three – preparedness:

■ • Maintain and improve the technology supporting the Genomics.