



The 100,000 Genomes Project

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The 100,000 Genomes Project



Four main aims

Infectious Disease

Rare Disease

Cancer

1. To bring benefit to NHS patients

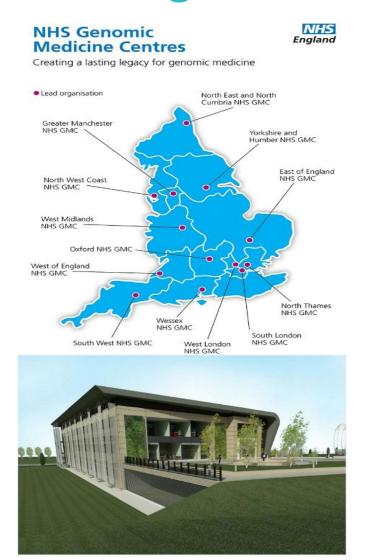
2. To create an ethical and transparent programme based on consent

3. To enable new scientific discovery and medical insights

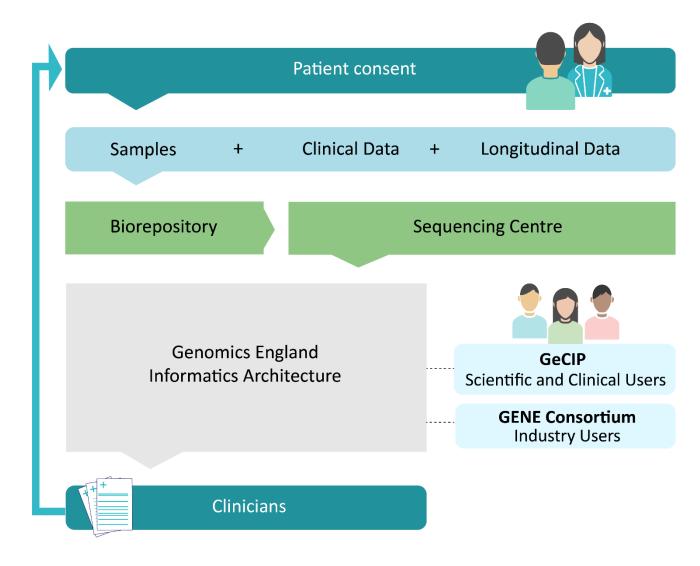
4. To kickstart the development of a UK genomics industry

Genomics England Structure





NHS Genomic Medicine Sequencing Centre





100,000 Genomes Project: Opportunities – Sample Diversity

- Routine collection of samples through NHS clinics
- Single consent for clinical diagnostics and research
- Collection of additional samples for:
 - Additional DNA Epigenetics
 - Stabilised Tissue & blood transcriptomics
 - Plasma, Serum cell free DNA & metabolomics
- Serial samples in time, multiple samples in space
- Collection of high quality clinical data
 - Clinical follow-up data
 - Data linkage: life-course data
- Re-contact patients



The Principal Partners



NHS England & NHS Genomic Medicine Centres

GeCIP Domains

Genomics England

Illumina

Industry Partnerships

Key Operational Features



- Genomics England a company wholly owned by the Department of Health
- ▶ Sequencing 100,000 genomes
- Clinical service, major research project and NHS transformation
- Focusing on cancer, rare disease (and infection - Public Health England)
- Based on consent
- Linking phenotypic and medical record data with genome data
- ▶ 13 NHS Genomic Medicine Centres
- Data held in a secure and monitored

- **environment** with strictly regulated access for researchers including industry
- Genomic medicine education programme lead by Health Education England is embedded in the NHS to upskill the workforce
- Over 2000+ scientists and clinicians engaged through disease-based
 Genomics England Clinical Interpretation Partnership (GeCIPs)
- Additional funding through MRC, the Wellcome Trust

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