Wales Gene Park...
helping Wales build an infrastructure for Next Generation Sequencing that supports *genomic medical research* in the era of **Precision Medicine**

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Health and Care Research Wales • Future-proofing research in Wales
Thursday 25th October 2018
Genomic medicine: healthcare that relies on a deep understanding of the patient’s genome.
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Requires technologies to sequence DNA and specialist IT, aligned with suitable information governance.
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Diagram:

- Patient → Sequence → Process → Outcome

- Diagnostic
- Therapeutic
- Prognostic
Genomic medicine: healthcare that relies on a deep understanding of the patient’s genome.

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Research centres

Clinical Trials Units

Research Units

School for Social Care Research

Support and Delivery

Infrastructure Support Groups

Wales GENE PARK PARC geneteg CYMRU

Our mission
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• to promote and facilitate Welsh medical genetic and genomic research and its application to improve health and wealth in Wales.
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- to promote and facilitate Welsh medical genetic and genomic research and its application to improve health and wealth in Wales.
- to engage the public and health professionals to improve understanding of the opportunities and challenges arising from genetics and genomics.
Genomic editing and transgenics

Work package 1
Genomic editing and transgenics

Genomic Facility
Genomic editing and transgenics

Genomic Facility

Education and Engagement
Genomic editing and transgenics

Work package 1

Genomic Facility

Work package 2

Education and Engagement

Work package 3
Genomic medicine infrastructure
Genomic medicine infrastructure

Sequencers
Genomic medicine infrastructure
Genomic medicine infrastructure

- Sequencers
- Compute
- Storage
Genomic medicine infrastructure

- Sequencers
- Compute
- Storage
- Networking
Genomic medicine infrastructure

- Sequencers
- Compute
- Storage
- Networking
- Supporting infrastructure
Genomic medicine infrastructure

- Sequencers
- Compute
- Storage
- Networking
- Supporting infrastructure
- Information governance
“Working together to harness the potential of genomics to improve the health, wellbeing and prosperity of the people of Wales.”
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Develop internationally-recognised medical and public health genomics services in Wales.

Actively seek out partnerships that can strengthen genomics and precision medicine services and research in Wales.

Develop internationally-recognised research in genomics.

Develop the NHS and research workforce in Wales.

The strategy recognises that data and resources need to be shared between healthcare and research if the promise of precision medicine is to be realised.
The data challenge
Genomic data?
Activity
data

Sociological
data

Imaging
data

Other ‘omic
data

Electronic health
records

Genomic
data

Activity
data

Environmental
data
The resourcing challenge
NOW

AWMG
Genomics IT

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Genomics IT
SHARED HUMAN GENOMICS RESOURCES?

NOW

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NHS

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SHARED HUMAN GENOMICS RESOURCES?

NOW

AWMG Genomics IT

FUTURE?

Wales Gene Park Genomics IT
• A key challenge for Wales is how to invest sustainably in research infrastructure that complements and aligns with equivalent planned healthcare resources.
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Future?

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