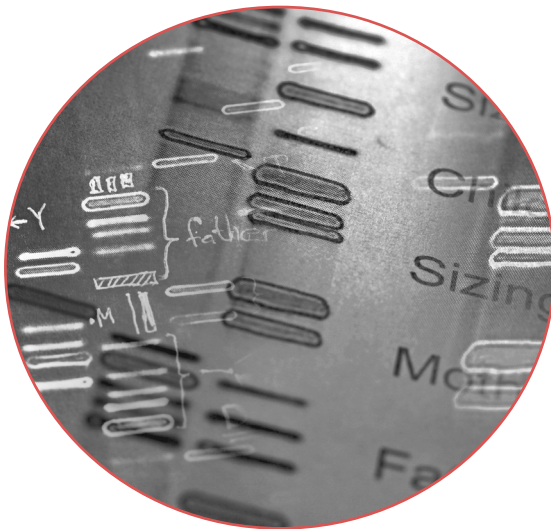


## Arkivum for Healthcare: Case Study

North Bristol NHS Trust and Bristol Genetics Laboratory

Bristol Genetics Laboratory has implemented the cloud-based Arkivum Service to facilitate the storing of gene-sequencing data and digital imaging from the 30,000 genetic investigations it conducts annually.

The Bristol Genetics Laboratory is based at the new, state-of-the-art laboratories in the Pathology Science building at Bristol Southmead NHS hospital. It delivers routine genetic testing services to the South West region, a population of approximately 5 million, as well as providing specialist, and highly specialised services to the rest of the UK and internationally.



“

*Big data is becoming a very real challenge for all genetics laboratories, not just Bristol Genetics Laboratory. Over the next two years, we'll generate more than 30TB of data from NGS services alone. The true value of that data is not yet known so we need to store it for the very long-term to be able to access and interrogate it over time as new data analysis techniques are developed.*

Eileen Roberts, Consultant Clinical Scientist,  
Bristol Genetics Laboratory

”

### The Challenge

Bristol Genetics Laboratory (BGL) is currently generating gene-sequencing and digital imaging data from the more than 30,000 genetic investigations it is conducting every year on a wide range of sample types using a range of molecular and cytogenetic techniques.

Many of these investigations, including those conducted using its Illumina NextSeq and MiSeq next generation sequencing (NGS) platforms, are resulting in a massive increase in size and volume of data sets (exacerbated by the fact that as the testing gets cheaper, clinicians are requesting more tests and thus increasing diagnostic yield).

Other significant drivers for a centrally managed long-term data archiving service were to:

- Invest in the as yet unknown long-term value and potential to be derived from genomics data.
- Reduce backup costs by removing these large volumes of data from the backup window
- Reduce the load on the stretched NHS IT departments that have their own cost and efficiency lowering drivers
- Deliver a system that had the potential to be used by a range of Trust departments such as Radiology, R&D, patient health records etc. - all of which had a disparate range of storage, security, and compliance requirements.

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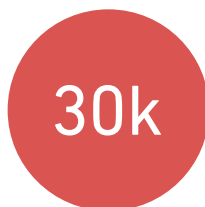
## The Solution

In-house, NHS Trust IT sourced solutions were explored initially but ultimately discounted because they would have required significant internal investment in IT infrastructure and resources such as data centre space, data archiving expertise, and the ability to scale the solution as data volumes increase.

### Cloud-based service

Having overcome organisational reluctance to lose control of the data and concerns about having patient identifiable data stored off-site and in the cloud (albeit in a private one), BGL implemented the cloud-based Arkivum Service that is initially providing 20TB of long-term data archive storage.

The number of genetic investigations the Bristol Genetics Laboratory conducts each year.



### NHS IG Toolkit and N3 network

The Arkivum solution, based on an appliance located at BGL's premises, stores and actively manages multiple copies of each data file in its geographically disparate UK-based data centres. As a result, the BGL system is fully compliant with the stringent requirements of the NHS Information Governance (IG) Toolkit. It is delivered via the North Bristol NHS Trust N3 data network portal to assure the highest standards of data security.

Arkivum's N3 connectivity set the solution apart from storage providers such as Amazon that are unable to provide N3 compliance.

### 100% Data integrity

In addition to the data centre copies of the data, the system also stores an off-site / offline escrow copy lodged with a third-party and it is this data architecture that enables Arkivum to provide a 100% data integrity guarantee that assures the long-term trustworthiness and authenticity of the BGL data that has retention periods measured in multiple decades.

## The Benefits

### Scalability

By outsourcing the provision of the data storage solution to Arkivum, BGL have ensured that scaling to larger storage volumes can happen rapidly and without the need for any further capital outlay. With data volumes rising through more diagnostic analyses being run because the cost of the analyses is coming down, and the fact that BGL is providing services more widely and expanding its testing portfolio, this is an important benefit for a very likely scenario.

### Efficiency

BGL are seeing significant efficiency savings from the automated ingest of data from local infrastructure to the Arkivum Service. These automated processes replace manual ones that were being carried out by range of different sections that each had their own requirements - and that had to be carried out by a competent person (because it was very important to get it right) thus making it a costly operation.

### Managed and reduced costs

With the system being based on an Arkivum appliance, it benefits from low capital outlay with further costs being managed and known upfront, without a need for three yearly NHS IT infrastructure reviews. Significant cost savings are also being made in that the NGS diagnostic data has been taken out of the costly backup window. In addition, extra capacity can be added for minimum outlay with no need for local infrastructure procurement.

### About Arkivum

Arkivum provides specialised best-of-breed long-term data safeguarding and archiving solutions, designed to respond to today's compliance and governance requirements. Arkivum works with institutions across multiple verticals, all of which generate high amounts of mission-critical data that needs to be preserved for many years to come.



### Talk to us

To find out more about our solutions and to start securing your data today and for the future, please contact us on 44 (0) 1249 405060 or email us at [info@arkivum.com](mailto:info@arkivum.com).

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