

# Melbourne Genomics Health Alliance



## Leading Victorian hospitals, research and academic institutions joined forces in 2013 to form the Melbourne Genomics Health Alliance.

Our collective aim is to use global genomics knowledge to inform individual care for Victorians. We see Victoria as the place for genomic innovation, investment and jobs.

Our work has shown that genomic medicine means **answers** for thousands of Victorians with unexplained medical conditions; **skilled jobs** across multiple fields of health and technology; and a **world-class health system** that can face the challenges of the future.

Genomics paves the way for precision medicine: healthcare tailored to each of us as individuals. Linking genomic data with other health data is fundamental to our work.

# First, we put genomics to use in real-world clinical care.

Eleven clinical projects (2016-2020) showed when genomic testing was a better approach than usual care – and when it was not.



**Overall:** 19x more patients received an informative result from genomic testing than from usual care.



**Cancer and rare disease:** 42% of patients received an informative result. Of those, half had a change in care because of it. Without genomic testing, only 5% of patients would have received a result.



## Babies with genetic conditions:

Rapid genomic sequencing delivered results up to 10x faster for critically ill babies. More than 1 in 2 of those babies received a diagnosis. 1 in 2 of those diagnosed received more precise care.



## Antibiotic-resistant 'superbugs':

33% more superbug transmissions were detected through genomic sequencing of microbes.

*Evidence from our studies is available at [melbournegenomics.org.au](https://melbournegenomics.org.au).*

## While laying the foundations for genomic medicine.

### Preparing the workforce

Our program has attracted genetic counsellors into Victoria from interstate and overseas, increased the number of medical scientists skilled in genomics, and attracted graduates into clinical bioinformatics. From 2016-2020, our training and courses enabled **1,506 health professionals** to better deliver genomic medicine.

### Building the systems

When we began, there were no clinical-grade systems to support the end-to-end workflow of a genomic test. So we built our own.

Our system, GenoVic, combines market-leading analytics tools with custom-built bioinformatics pipelines and variant curation tools. Five pathology laboratories now use GenoVic to provide accredited genomic tests and manage patient data.

### Informing policy and funding

Results from our clinical projects have supported multiple applications for Medicare Benefits Scheme funding. Paediatricians can now use the Medical Benefits Scheme to order whole exome tests for patients with suspected complex genetic conditions.

Economic evaluations of our projects identified significant cost savings and cost benefits to the health system from genomics. The Victorian Government provided \$35M to further expand our work in the 2021-22 State Budget.

The Melbourne Genomics collaborative model has been recognised as the international gold standard for incorporating genomics into healthcare, informing similar initiatives in Australia and other countries such as Hong Kong, Canada and England.

See how GenoVic works at [melbournegenomics.org.au](https://melbournegenomics.org.au)

# Now it's time to make genomic medicine a reality for all Victorians.

We are working with the Victorian Government and healthcare providers on a final, four-year program (2021–2025) to embed genomics in the State's health system.

These are our current projects.

## Genomics in practice

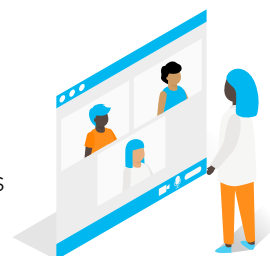
These projects will see more Victorian health services ready and able to offer genomics.



- **Children with undiagnosed genetic conditions**  
Ensuring children with these conditions can access genomic testing
- **Superbugs**  
Sequencing antibiotic-resistant microbes to track and prevent their spread
- **Cancer**  
Using genomics to inform targeted therapy for solid cancers
- **Supporting hospitals to implement genomics**  
Developing tools to support decision making and change management
- **Clinical change**  
Funding innovative solutions to real-world challenges of using genomics in patient care
- **Testing new technologies**  
Addressing barriers to onboarding new technologies in medical laboratories
- **Funded genomic tests**  
Demonstrating which tests provide the most value for patients and the health system, to inform funding and policy decisions

## Genomic workforce

Genomics will be part of many professions in Victoria's current and emerging workforce.



- **Those using genomic testing**  
Supporting clinicians to build the skills to use genomics in their practice
- **Those conducting genomic testing**  
Meeting demand for a laboratory and data science workforce skilled in genomics
- **Enduring genomics education**  
Enabling professionals to keep their knowledge up to date in a changing field

## Genomic information management

These projects will take the GenoVic clinical system forward and support the ethical use of genomic data for clinical care and research.



- **Innovation pathways**  
Ensuring GenoVic keeps pace with new developments in genomics
- **Data access and reuse**  
Enabling clinical data in GenoVic to be re-used to improve the health of patients, underpinned by rigorous governance
- **Privacy and security**  
Ensuring GenoVic continues to meet industry-wide cyber security standards
- **Service delivery**  
Evolving GenoVic as a mature clinical product, supporting a growing number of users

# What this means for Victoria



## Patients have timely and equitable access to testing

More Victorians will get accurate answers and improved care.



## Genomics enables health system efficiencies and savings

This can be measured not only in the reduced costs of tests, but in shorter hospital stays and better quality of life.



## Victoria attracts and retains a highly skilled genomics workforce

Genomics will open up new career pathways and skilled jobs in clinical practice, research, bioinformatics, software development, policy and so much more.

# Governance and funding

Melbourne Genomics is guided by an expert Board, comprising leaders of our 10 member organisations, together with an Independent Director and an Independent Chair.

Our current program to 2025 is a shared investment: \$35M from the Victorian Government and a \$10M investment from Alliance members.

## Talk to us about ...

Genomics projects and collaborations  
Genomic data management

Workforce development and training  
Our clinical genomics system

## [melbournegenomics.org.au](http://melbournegenomics.org.au)

enquiries@melbournegenomics.org.au | Twitter: @MelbGenomics

Alliance members



Supported by

