



Genomics Health Futures Mission – Updated Roadmap

The Genomics Health Futures Mission (GHFM) under the Medical Research Future Fund (MRFF) was established by the Australian Government in 2018, with a \$500.1 million commitment over 10 years. It will improve testing and diagnosis for many diseases, help personalise treatment options to better target and improve health outcomes, and reduce unnecessary interventions and associated health costs.

Rationale

Genomics is already transforming our ability to diagnose conditions and provide targeted interventions, especially for people with rare genetic diseases and cancer. Genomics is also improving the prevention and control of infectious diseases. Continually improving genomics technologies and their applications offers an opportunity to generate individual, public health, social and economic benefits in Australia and globally. To maximise these benefits, new ways of thinking and working are required to develop and disseminate advances in genomic technologies, and to support their timely adoption and implementation into healthcare and disease prevention and treatment.

Scope

The GHFM will fund research to integrate genomics knowledge and technology into clinical practice and public health impact. It aims to:

- ensure Australians live longer and healthier lives through access to genomics knowledge and technology
- deliver improved diagnostics and targeted treatments, including precision medicine
- avoid unnecessary health costs
- improve patient experience and outcomes
- position Australia as a global leader in genomics research

The GHFM will also advance precision medicine for all Australians, while keeping a focus on improving overall healthcare for Aboriginal and/or Torres Strait Islander peoples. This will be accomplished in partnership with Aboriginal and/or Torres Strait Islander peoples to ensure genomics research is scientifically sound, culturally safe, and competent to address inequity in research participation and outcomes.

Our goal

To save or transform the lives of people in Australia through genomic research to deliver better testing, diagnosis, treatment and prevention.

Our Mission

To improve the lives of Australians by accelerating research that delivers more effective testing, diagnosis treatment and prevention; facilitates the adoption of new interventions; and consolidates Australia's international leadership in genomics.

Underpinning considerations

- Research activities will build on existing investments, be informed by the genomics community and the public, and develop aspirational goals for the future of genomics in healthcare.
- The GHFM will support a cohesive and collaborative national approach to the implementation of genomic medicine as standard of care, and create a national clinical and genomic data repository with linkages to national biobanking initiatives.
- Collaboration with philanthropic, industry and international contributions will maximise outcomes, including the translation of genomics research into practice.
- Engagement and co-development with consumers and Aboriginal and/or Torres Strait Islander people will enrich genomics research design, delivery and implementation.
- International collaboration will enhance Australian research efforts and catalyse transformative genomics research globally. Australia will engage in global research as a single cohort.
- Partnerships with industry and engagement with service delivery will promote novel research, facilitate innovation, and realise translation and adoption of safe and effective genomic interventions.
- Coordination of core capabilities common to all GHFM-funded projects will achieve economies of scale, avoid duplication of effort, mitigate risk, and improve project implementation, evaluation and effectiveness.
- The GHFM funds research, it is not intended as a substitute or addition to the funding of healthcare supported by Commonwealth (e.g. Medicare), State/Territory Government or other sources.

Funding principles

Activities funded under the GHFM must:

- be, or contribute to, large national programs of work of strategic importance in key priority areas as outlined in the implementation plan. Research activities are expected to foster collaboration and harness resources across the system to deliver improved health outcomes for Australians
- ensure any research involving Aboriginal and/or Torres Strait Islander peoples is “not about us without us”, reflecting the principles of self-determination, shared decision making and cultural safety
- demonstrate the Ethical, Legal and Social Implications of the research activity
- engage with service delivery, program and policy partners to ensure that research outcomes facilitate the timely adoption of safe and effective genomics technologies
- adopt best practice data management that includes ensuring data is stored for sharing in a data repository, which complies with international genomics standards and all relevant legislation
- enhance collaboration and translation across the research and health systems
- build capacity and leadership of under-represented populations in genomics research and clinical genetics/genomics to facilitate equitable access and engagement in genomics health
- adhere to the MRFF Principles for Consumer Engagement
- align with the MRFF funding principles

Priority areas for investment

Funding will enable:

1. ***Faster and more effective disease diagnosis, prevention and earlier intervention***
 - Rare disease: Improving diagnostic rates for rare genetic diseases that present before birth, in childhood or in adults, and delivering the diagnosis as quickly as possible
 - Cancer: Improving early detection and targeted treatment for the most common cancers to reduce the burden of disease
 - Functional genomics: Promoting diagnostic effectiveness and efficiency through better understanding of the impact of genetic variants
 - Infectious disease: Developing novel methods to reduce the impact of infectious diseases on individual patients and on populations
 - Genomic screening: Improving genomic screening to enable informed decision-making for health
2. ***New targeted interventions that transform individual and population health***
 - Pharmacogenomics: Promoting precision medicine to improve medication efficacy and reduce harm
 - Common and complex disease: Deploying novel methods to understand the genetic basis of complex diseases
 - Gene-related therapies: Developing novel therapeutics by investing in promising early-stage products
 - Co-developing clinical capabilities for genomics applications that can be embedded in practice
3. ***Increased community awareness and engagement, and better understanding of the societal and economic value of genomics in healthcare and practice.***
 - ELSI: Developing a better understanding of the ethical, legal and social implications of genomics, facilitating public trust and public engagement
 - Governance and technology: Developing innovative methods for the ethical and secure governance of genomics data for clinical and research purposes
 - Aboriginal and/or Torres Strait Islander health: Ensuring that Aboriginal and/or Torres Strait Islander people contribute to and control the application of genomics research for the health benefits to their communities
 - Australian Genome Reference Database: Enriching population cohorts to bring the benefits of genomics to all members of our multicultural nation