Australian Government
Department of Health

Medical Research Future Fund

Genomics Health Futures Mission

Roadmap

Theme
Research missions

The Genomics Health Futures Mission (GHFM) is investing $500 million over 10 years in genomics research under the Medical Research Future Fund (MRFF). 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.

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 disease. 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 genomics technologies, and to support their timely adoption and implementation into health care and disease prevention.

Scope

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

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

The GHFM will also advance precision medicine in partnership with Aboriginal and/or Torres Strait Islander people to ensure genomics research that is scientifically sound, culturally safe, and competent to address inequity in research participation and outcomes.

Our goal

To save or transform the lives of more than 200,000 Australians through genomic research to deliver better testing, diagnosis and treatment.

Our mission

To improve the lives of Australians by accelerating research that delivers more effective testing, diagnosis and treatment; 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 health care
- 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
- Consumer engagement and co-development 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 of 25 million individuals
- 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

Funding principles

Activities funded under the GHFM should:

- support excellent, innovative research through competitive and transparent peer- reviewed processes
- sponsor early-stage development of novel and emerging technologies
- enhance collaboration and translation across the research and health systems, particularly across other MRFF initiatives
- promote engagement with service delivery, program and policy partners to facilitate adoption of safe and effective genomics technologies
- leverage funding to maximise outcomes through collaboration with philanthropic, industry and international contributions, including the translation of genomics research into practice
- foster a world-leading and dynamic genomics research sector in Australia
- build capacity and leadership of under-represented populations in genomics research and clinical genetics/genomics to facilitate equitable access and engagement in genomics health
- align with the MRFF funding principles

Priority areas for investment

Funding will enable:

- faster and more effective disease diagnosis, prevention and earlier intervention
- new targeted interventions that transform individual and population health
- increased community awareness and engagement, and better understanding of the societal and economic value of genomics in health care

Diagnosis, prevention and early 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

Targeted interventions

- Pharmacogenomics: Promoting precision medicine to improve medication efficacy and reduce harm
- Common and complex disease: Deploying innovative 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 the primary health care sector

Community awareness and understanding

- 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