



## Traumatic Brain Injury Mission – Roadmap

The Medical Research Future Fund (MRFF) Traumatic Brain Injury (TBI) Mission (the Mission) is investing \$50 million over 10 years from 2019-20 to 2028-29 to support research designed to improve the lives of all Australians who experience TBI.

TBI arises from a range of circumstances, including but not limited to single or repeated TBI in the context of family, domestic and sexual violence, older people who have falls, the military, sports, or injury after other trauma. The resulting injuries are diverse in presentation, vary in severity from mild to severe, and can lead to dramatic and often long-lasting negative consequences for patients, their families and carers. TBI can also involve significant health care resources and have a substantial effect on society. Research under the Mission will build the evidence base and drive improvements in TBI care, as well as innovate new strategies for treatment, rehabilitation and community integration.

### Scope

The Mission will invest in research that:

- identifies predictors of outcomes that facilitate personalisation of care following TBI
- develops and assesses interventions that improve lives following TBI
- identifies opportunities for improvement in care
- investigates effective pathways to translate research findings into nationally consistent clinical practice
- identifies best management for people with TBI in the presence of other injuries and comorbidities
- identifies mechanisms for improving public awareness to help people with TBI integrate into the community
- supports evolution of TBI management and care.

### Our goal

To better predict recovery outcomes after a TBI, identify the most effective care and treatments and reduce barriers to support people to live their best possible life after TBI.

### Our mission

To accelerate Australian TBI research that develops and delivers evidence that informs innovative and effective treatments, that substantially and equitably optimise and improve outcomes for people who experience TBI, in partnership with people with TBI, their families and other community support networks..

### Funding principles

Activities funded under the Mission should:

- be, or contribute to, large programs of work of national strategic importance that are informed by the key priority areas outlined in the implementation plan

- foster collaboration and harness resources nationally to deliver improved health outcomes for Australians
- support nationally integrated, coordinated and evidence-based TBI research of the highest quality that leads to the development of standardised and optimised models of care, translation into existing service delivery frameworks and improved outcomes
- support optimised TBI care including in:
  - regional, rural and remote Australia
  - Aboriginal and/or Torres Strait Islander peoples
  - single or repeated TBI in the context of family, domestic and sexual violence
  - older people who have fallen
  - the military
  - sports
  - culturally and linguistically diverse people
- be co-designed in partnership with people with TBI, their families and other community support networks
- include a data governance framework that encompasses accessibility, data linkage and value for money
- integrate with service delivery to inform prevention opportunities, including in vulnerable populations
- encompass multicentre research including rural clinical researchers and Aboriginal and/or Torres Strait Islander researchers, linked with international efforts and in line with world best practice
- support collaboration with other missions, funding bodies and relevant philanthropic organisations to ensure sustainable and continuous improvement in TBI outcomes for all Australians.

## **Priority areas for investment**

Funding will focus on:

- personalising care after TBI, regardless of severity, to achieve the best possible outcomes, including using predictive modelling to improve care pathways and outcomes, and helping to ensure that patients consistently receive best practice treatment and care for TBI
- improving the lives of people with TBI regardless of severity by using better interventions, including new and/or best practice treatments and care applications, and enhanced rehabilitation
- identifying how to reduce barriers to support people to live their best possible life after TBI regardless of severity, including understanding the impact of community awareness on health and psychosocial outcomes, understanding long term outcomes following TBI, and assessing the economic impact of TBI treatments and pathways.

### **Personalising care**

The Mission may support national collaborative initiatives that build the evidence base for the effects of a range of factors on long-term outcomes, including pre-injury, injury-related factors, treatment, management and rehabilitation. This may help predict outcomes following TBI and

inform optimal care, enabling personalisation of care and development of clinical practice guidelines. People with lived experience of TBI, and experts in all areas of TBI research, should be included in the research.

### **Improving interventions**

Rigorous testing of interventions and innovations in care delivery is needed to substantially improve outcomes for people with TBI of all severity. The Mission may fund multicentre trials or national collaborative trials of promising treatments and interventions for TBI of all severity. Trials of interventions that are appropriate for regional and remote Australia, including vulnerable populations, are also needed. For maximum effectiveness, projects need to build on collaborative data frameworks to enable data sharing, linkage and efficient study design.

### **Reducing barriers**

The community lacks awareness about the possible consequences of TBI and the difficulties faced by people with TBI reintegrating with the community. Evidence-based materials need to be made more readily available to clinicians to increase implementation of best practice and optimisation of care for all Australians. The true incidence and cost of TBI to the Australian health care system and community is unknown, and data is needed to inform current and future investment policy. Projects may collaborate with other MRFF initiatives to enhance translation of continuous improvements, and ensure ethical and equitable access to best practice personalised care.

### **Enabling priorities**

#### **Infrastructure**

The MRFF has opportunities outside the Mission to support 'soft' infrastructure, such as data portals, multi-omic platforms and computational bioinformatics. Additional funding may be required to support development and implementation of collaborative data platforms for key data elements, to maximise linkage and enable tracking across the continuum of care for TBI of all severity. Support may also be required to develop infrastructure for biorepositories.

#### **Ethics, engagement and policy**

The Mission includes opportunities to raise awareness of TBI, embed community engagement in funded research projects and inform clinicians about evidence-based best practice. Partnerships with non-government organisations and additional government support from outside the MRFF (including the National Disability Insurance Scheme) will be needed to:

- support research on the ethical, legal and social implications of TBI treatment
- continually raise awareness of TBI in the community
- ensure translation of research findings, service delivery and equity of access to best practice treatments for TBI.

#### **Capacity building and workforce**

Highly skilled researchers trained in the multidisciplinary environment of brain injury research and care are needed to accelerate the development of world-leading treatments. The next generation of TBI researchers will need to be supported.