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What's on Australia's 'scientific mind' in 2023?

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Life sciences sector in Australia has re-aligned its R&D investment towards addressing brain health



At the beginning of 2023, Australia had announced the launch of the country's first multicultural mental health line. This means that people from diverse communities needing mental health support are set to benefit from an Australian-first multicultural mental health phone line service covering up to 30 different languages.

Owing to the pandemic, such initiatives have grown tremendously across the globe addressing people's mental health and brain conditions. Psychology, brain diseases, and mental health are all related to what we call the mind. Although, they each represent different approaches to the ways people think, feel, and behave, they are equally important and need prioritisation.

As a result, we see that the life sciences sector in Australia has re-aligned its focus and R&D investment towards addressing brain health and related conditions such as dementia, epilepsy, Alzheimer's, depression, anxiety and even brain cancer.

Last week, three expert teams in Australia received funding worth $1.5 million to undertake research into causes of dementia through projects funded by the National Health and Medical Research Council (NHMRC).

NHMRC is partnering with the Japan Agency for Medical Research and Development (AMED) to increase the understanding of dementia and improve health outcomes for people living with the condition.

Further, for the first time, a new drug has been discovered by Australian researchers that is the first potentially curative drug for people with epilepsy who are resistant to control with current anti-seizure drugs. Epilepsy affects over 150,000 Australians, and 50 million globally, with one-third struggling to control their condition with currently available anti-seizure medications. These patients with drug-resistant epilepsy have high rates of disability, mental health and thinking problems, and injury and death rates.

Epilepsy is one of the most common and serious disabling brain disorders which is costly to both individuals and their families, as well as the national health budget with an estimated annual economic cost in Australia of $12.3 billion.

In another development this year, Australia-based startup Inventia Life Science has partnered with American pharmaceutical firm Merck to accelerate the drug discovery process by evaluating therapeutic candidates on 3D in vitro models of various neurological disorders, including Alzheimer's disease and Parkinson's disease.

Adding up, scientists from Commonwealth Scientific and Industrial Research Organisation (CSIRO), Australia's national science agency, in partnership with Queensland University of Technology, have used artificial intelligence to develop a world-first benchmark for measuring brain atrophy – or thinning - in neurodegenerative diseases, including Alzheimer's disease.

In another world-first, a clinical trial platform launching in Melbourne is set to transform research into new therapies for brain cancer and deliver more targeted, personalised treatment for patients.

Brain-POP is the first perioperative or 'Window of Opportunity' clinical trial programme for brain cancer, where biopsies are taken before and after treatment to provide critical information on drug activity through small, well-designed studies that guide further development.

Multiple such efforts are being made by the academia, industry and government across Australia, and the world, in 2023 to prioritise brain health which includes cognitive, sensory, social-emotional, behavioural and motor domains, allowing people to realise their full potential over the life course, irrespective of the presence or absence of disorders.

Dr Manbeena Chawla

(manbeena.chawla@mmactiv.com)