



Dr Alison McLean, clinical genetics advanced trainee

Implementing pharmacogenomics-guided therapy in patients with mental illness

Pharmacogenomics (PG) is the study of multiple genetic variants that influence an individual's metabolism of multiple medications, including many anti-depressants/anti-psychotics. PG-guided drug therapy aims to deliver the right drug at the right dose at the earliest intervention period.

Despite the increasing evidence of the benefits of PG-guided psychotropic treatment, there is limited literature on the outcomes of this approach in the Australian healthcare landscape.

"This project will be the first in Australia to develop, implement, and evaluate a novel model of care to incorporate evidence-based PG-guided therapy for patients with mental illness," explains Dr Alison McLean.

This pilot study is investigating whether PG testing can guide medication choice and correct dosage to avoid side effects and improve the time to remission of symptoms.

Patients with major depressive and/or anxiety disorders, who are new to treatment or whose medication (dose or type) was altered in the last 90 days, will be recruited from the psychiatry inpatient and outpatient services across Australia.

Prioritising PG testing

In 2018, there was a NSW Parliamentary Inquiry into the Management of Healthcare Delivery that highlighted that PG testing is not being adequately utilised in the public mental health system. It also identified PG testing as one of the key mental health priorities and made recommendations that NSW Health actively pursues and funds the increased use of PG testing as a means of improving treatment for patients with mental illness.

"Patients with mental health issues of depression and anxiety will benefit initially from this research, however, it is generalisable to all patients with mental health disorders. This research is timely given the increasing accessibility of genetic testing for patients, with lower costs and faster turnaround times improving the clinical utility of genetic testing," explains Dr McLean.

Advocating for genomic testing

"This opportunity will broaden my research skills to enable establishment of my own interdisciplinary research as a physician-academic in clinical genetics in the future. Over my career, I intend to strongly advocate for the integration of genomic testing into clinical medicine and ensure there is equity of access to genomic testing," says Dr McLean.

After completing her advanced training in clinical genetics, Dr McLean plans to work as a clinical geneticist in the public hospital system.



I hope to be able to continue to research the benefits of mainstreaming of genomic testing to improve health outcomes for patients."

Dr Alison McLean is an Early Career Research Program award recipient and is currently a clinical genetics advanced trainee at Royal North Shore Hospital in Sydney.



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