| CASE STUDY

GROUND-BREAKING ADVANCES IN THE EARLY DETECTION OF AUTISM

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Autism currently affects an estimated one in 70 Australians, however early diagnosis is proving to have major benefits.

The Olga Tennison Autism Research Centre at La Trobe University is leading the way with early detection of the lifelong developmental condition, which is characterised by difficulties in social interaction, communication, restricted and repetitive interests and behaviours, and sensory sensitivities.

Over the past 15 years, the Centre has developed two highly effective tools for the early detection of autism, both leading to ground-breaking advances in reliably identifying children with autism during the second year of life.

Firstly, the Centre developed the Social Attention and Communication Surveillance (SACS) tool, which is the most accurate early autism screening tool in the world with a Positive Predictive Value (accuracy rating) of 81%, which compares to 6% PPV for the next most commonly used tool, the M-CHAT.

Significantly, the SACS tool has been adopted worldwide and has now been translated and disseminated across 12 countries throughout the Asia-Pacific and Europe, including the monitoring of 45,000 infants and toddlers in the Victorian and Tasmanian Maternal and Child Health System, and 700,000 babies in the Chinese city of Tianjin between 2013 and 2020.

Building on the success of the SACS tool, La Trobe University then collaborated with industry partner Salesforce to

incorporate the tool into a mobile app – ASDetect – which is a free application designed for parents to monitor their infants and toddlers for early signs of autism.

Since its launch in February 2016, the ASDetect app has had over 36,000 downloads in Australia alone, and is has been translated into Mandarin and Spanish thanks to a Google Impact Challenge grant.

The evidence-based app is serving to reduce barriers associated with access to timely screening tools for autism – thereby promoting earlier diagnosis – with preliminary data from a current study of parent usage of the app indicating an accuracy of 84% in detecting autism in 11-30-month-olds from a sample of 1,255 children to date.

Importantly, the Centre's research is resulting in sustainable and positive change nationally and internationally for individuals and families impacted by autism, which impacts 2% of the population.

Early detection and the subsequent provision of services is showing to reduce core difficulties and secondary problems that often accompany a diagnosis of autism, thereby helping enhance children's language, cognitive, adaptive and developmental outcomes.

An example of this social benefit is that children identified via the SACS tool and diagnosed by two years of age had lower rates of co-occurring intellectual disability (8%) compared to children diagnosed between the ages of 3-5 (24%). As a result, children diagnosed earlier are more likely to be included within mainstream school settings and require less ongoing support than children diagnosed later.

These social benefits also translate into substantial socio-economic benefits, with early intervention decreasing monetary costs associated with autism across the lifespan.

In fact, Synergies Economic Consulting estimates the total cost of autism in Australia to be between $8.1 billion and $11.2 billion per annum, with early intervention saving Australian society $1.55 million per person over the lifetime through reduced support required at school, increased likelihood of employment, and reduced reliance on supported care in adulthood.

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Individuals with autism are also the largest group accessing the National Disability Insurance Scheme, currently reported at 31% of all presenting cases.

Additionally, all primary healthcare professionals are benefitting from the Centre's research – including MCH nurses, GPs and paediatricians – through upskilling on children's social-communication milestones via the SACS training, empowering them to identify and refer children who are showing early signs of autism.