



peers™

Paediatric Evaluation of Emotions, Relationships and Socialisation Digital tool to assess social skills and identify social problems

The opportunity

A range of skills such as reading body language and interpreting tone in voice contribute to overall social success. These skills develop rapidly from early childhood and reflect a dynamic relationship between the child and their environment.

1/10 “healthy” children and young people experience social problems, and 6/10 children with mental illness, chronic illness, brain injury, or high social risk suffer such problems. Social problems are a primary characteristic or symptom of autism spectrum disorders, attention deficit hyperactivity disorder, depression, language and learning difficulties, brain insult, epilepsy and a range of other medical and psychiatric conditions. Social problems have also been established as comorbidities or precipitants for later mental health problems, delinquency and criminal behaviour, highlighting the importance of early detection and intervention.

Early intervention by way of individual (pharmacological, behavioural), group or parent interventions, has been shown to be highly effective at limiting the severity and/or progression of social problems. However, while diagnosis of social problems has become an area of significant importance in the clinical context, progress is hindered by (a) the need to closely replicate real-life social interactions to accurately assess social skills and; (b) the current lack of comprehensive assessment tools for this domain.

peers will meet this major unmet need by being the first TGA/FDA approved, evidence-based and clinically-validated, digital social assessment tool for children and adolescents, with future extension to adults. **peers** will enable health professionals and educators to assess the entire social domain of a young person and intervene early with targeted treatment.

peers represents a major advance in psychological testing as it more accurately assesses the social domain by gathering data direct from the child in a highly interactive and engaging way, is easy to use and has in-built automatic scoring and reporting functions which saves the user time and money.

The Murdoch Children's Research Institute (**MCRI**) is a leader in child neuropsychology and child health more generally. We are developing **peers** in collaboration with an international team of clinicians, researchers and key opinion leaders from Canada, the UK and the US. The group behind **peers** has a

successful track record in the development and commercialisation of new neuropsychology assessments, two of which are now distributed by Pearson PLC, the major publisher of psychological tests worldwide.

peers is being built and may be marketed as a regulated medical device. We expect to launch the product in early 2018.

peers is gaining good brand recognition in the clinical, research and IT industries and was a finalist in the 2015 OzApp awards and an award winner in the National 2015iAwards.

The technology

Peers is an iPad application composed of 12 interactive games that test a patient's social functions across a variety of social domains. Upon completion of **peers** a social quotient or “social IQ score” is delivered that will guide professional interpretation and appropriate early intervention measures.

peers is based on well validated social neuroscience theory and is supported by strong proof-of-concept data. The 12 **peers** tests have been created in accordance with the gold standard development procedures inherent in well-established IQ assessment measures.

The key features of **peers** are:

- 1. Increased accuracy** – current assessment practices are subjective with limited disorder specific paper-based tests (with parent/teacher rating scales) utilised which are often unsuitable for children; **peers** has been built for young people and it is the first tool to take a child's cognitive level and motivation into account. **peers** is action orientated, fun and allows for the accurate capture of objective data direct from the child in real-time;
- 2. Increased efficiency** – health professional consults can take over an hour and the professional is required to observe, ask questions, administer a paper-based test (which often come with physical visual stimuli) and then score and write a report after the consult. Routine use of **peers** (either the whole set of tests or an appropriate sub-set of the tests for a particular social domain) will shorten consults whilst allowing the professional to spend more time observing the patient. We conservatively

estimate routine use of **peers** will save each psychologist and speech pathologist \$20,000 per year at the Royal Children's Hospital Melbourne through real-time, automated data capture, analysis and scoring. The **peers** reporting will also be integrated into the electronic medical records system where possible.

3. Simple and intuitive user-interaction – current assessment requires the child to interact with the professional in a meaningful way in a formal setting; **peers** incorporates methods (i.e. a game feel) that is attractive to young people. The portability of the **peers** delivery platform, which allows **peers** to be administered at the bedside, clinic or classroom, also allows the young person to complete **peers** in a suitable and stress-free environment.

4. Low-cost, scalable and interoperable solution – The **peer's** application runs on the Apple iPad tablet device which is the tablet of choice for the clinical market. The advantages of using this technology are numerous and include digital distribution of applications available across most countries in the world through the Apple App Store, strong gamification engine built into the operating system and software development kit and capable of data analytics for comparison of scores with normative data which includes graphs. **peers** will also be integrated with Cloud technologies to facilitate synchronisation of participants between multiple devices and further big data analytics across potentially millions of participants.

A 2 minute demonstration of the current **peer's** app can be found at: <http://www.curvetomorrow.com/>



Applications and market

peers will be a valuable resource across a variety of sectors: child health, mental health, education, employment, recruitment and aged care. It will be relied upon for the assessment of social skills in the 'healthy' population, and in young people where concerns regarding mental illness arise, and across school, hospital, private practice and community settings.

The child and adolescent mental health market is a large one. Mental illness is more common than cancer, diabetes, or heart disease and mental ill health contributes to nearly half of the burden of disease in young people. It is estimated that mental disorders cost the US healthcare system more than \$150 billion annually for treatment, social service and disability payment, lost productivity and premature mortality. A 2013 report in Australia has also shown the overall cost of supporting people with mental illness in Australia to be at least \$28.6 billion (and this estimate excludes indirect costs such as lost productivity).

We estimate the total population available for clinical testing with **peers** is ~ 18 million. Clinical testing with **peers** will be carried out by psychologists and child health professionals (speech pathologists, paediatricians and special educators) working with children, and we conservatively estimate the number of users in the US, UK and Australia at 50,000.

peers will be used as a screening tool for schools, and this market opportunity is potentially even larger. **peers** could also easily be adapted to fit the multimillion dollar adult psychological testing market and recruitment industry in which assessment of social skills are a key priority.

Further information

For more information, please visit:

<https://www.mcri.edu.au/media/5227>

<http://www.curvetomorrow.com/>

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