

Project Status Update

Reporting cycle:	1 Oct 2016 – 30 Jun 2017 (Year 1)	Date:	30/06/17
Designated Charity:	Black Dog Institute		
Funded initiative:	A multilevel Place-based Strategy for Youth Suicide and Self Harm Prevention		
Snapshot overview:	<p>The Youth Centre of Research Excellence in Suicide Prevention is now established, with the objective to reduce suicide attempts and deaths in young people. In accordance with our underlying premise that reductions in suicide rates will only be advanced with better knowledge and technical innovation, we have engaged two research fellows with expertise in youth mental health and technology development and evaluation, to lead two of the key studies outlined in our program of research. These appointments have enabled us to meet the deliverables associated with the following research priorities:</p> <ul style="list-style-type: none">• Develop a text messaging system to provide continuity of care for young people who have been discharged from hospital following a suicide attempt (Study 2), and;• Develop smartphone technology to detect social withdrawal, a known risk factor for suicide (Study 3). <p>Key to our success in the first year of this funded initiative have been:</p> <ul style="list-style-type: none">• Attracting high-quality researchers to lead the identified research priorities;• Integrating these researchers into our internal mentoring and capacity building program, to ensure they are adequately supported and have ongoing opportunity for growth and development;• Engaging with the Black Dog Lived Experience Advisory Panel, and Hands Up (our Volunteer Register) to inform system design, development and testing;• Leveraging our internal IT capacity and capability to support system development and testing. This has minimised research and development (R&D) costs and ensured a nimble approach in line with feedback from consultation with lived experience.• Establishing strong partnerships with key stakeholders in the settings (school and hospital) we wish to influence change and knowledge translation;• Attracting seed funding from external agencies, to support enhancements in the systems under evaluation. <p>A key barrier to implementation of the full program of research has been recruitment of a research fellow to lead Study 1, that is, the development of a digital therapeutic application that delivers cognitive behaviour therapy (CBT) through a smartphone to help manage suicidal thoughts. We anticipate this will be mitigated through the allocation of funds in Year 2. We note the Year 1 funding allocation from FGG was only able to support two positions outlined in our research program plan, not three, as originally intended.</p>		
Key achievements:	<p>Study 2 – Development of a text messaging system to provide continuity of care for young people who have been discharged from hospital following a suicide attempt</p> <ul style="list-style-type: none">• Following consultation with young people through focus groups and via our Black Dog Lived Experience Advisory Panel, the prototype for the text messaging system (Study 2) is complete.• Ethics approval for a pilot in three hospital sites across NSW and QLD was obtained, along with site-specific approvals within each hospital jurisdiction.• The pilot study was prospectively registered as a clinical trial with the World Health Organisation and Australian New Zealand Clinical Trials Registry.• Recruitment is now underway in the Emergency Departments at the Royal Prince Alfred Hospital in Sydney, the Darling Downs Hospital in Toowoomba, and the Royal Brisbane Hospital. <p>Study 3 - Development of technology for smart phones to enable others, including clinicians, to detect social withdrawal, a risk factor for suicide</p> <ul style="list-style-type: none">• Following consultation with young people through focus groups, an app prototype to passively detect social withdrawal using GPS and Bluetooth technologies on both Android and iOS platforms, has been developed.		

- Ethics approval for a feasibility pilot in NSW high schools was obtained.
- A feasibility study has been completed in one NSW regional high school involving 39 students, whereby social connectivity and mood symptoms were measured over a six-week period.
- This study has established it is feasible to obtain sensor and mental health self-report data using the app prototype.
- Further refinements to the prototype are underway in order to improve data acquisition.

Building the **evidence** base: Background literature for Studies 2 and 3 complete, and research protocols developed; ethics approval obtained; consultation complete; design specifications developed; systems developed and tested; initial pilot studies complete and/or underway.

Building sector **capability**: Two research fellows supported; mentoring and development plans in place.

Increasing individual **agency**: Not applicable in Year 1.

Improving **access** to support: Not applicable in Year 1.

Strengthening **early intervention**: Not applicable in Year 1.

No. people supported:

To date, 61 people have been directly supported through the research program and we are on target in meeting our deliverables for this stage of the research program. The vast majority of participants directly supported will be realised once full-scale trials are underway in Years 2 and 3. We anticipate supporting a total of 200 young people in Study 1 (by Year 3 – Year 4), 25 young people in Study 2 (by Year 2 – Year 3), and 140 young people in Study 3 (by Year 3 – Year 4). Upon conclusion of these trials, numbers of people indirectly supported will swell as we translate these digital applications into practice, as outlined in our Knowledge Translation plan.

People supported through the project: ¹	Support provided to date:				
	Directly Supported		Indirectly Supported		Total
	No.	+	Estimated	=	Total
Children & young people	55		-		55
Those who are close to & care for them	-		-		-
Professional service providers	6		-		6

Sixteen young people have participated in the design, development and testing phase of Study 2. At the time of reporting, recruitment of young people to the pilot study was not yet available. There are two staff in each hospital site that have been trained in study protocol and procedures and are directly supporting the research trial. Within Study 3, 39 students have participated in the initial pilot.

Key observations & learnings to date:

Consultation is critical as part of the knowledge translation strategy and successful implementation. Through this process, we have been able to mitigate implementation barriers and improve uptake of programs by individuals.

With specific reference to Study 3, the following observations have been made:

- Due to technical barriers within the school setting and user behaviour, accurate and stable data acquisition has been difficult to maintain. This has impacted on useful interpretation of data collected.
- Larger samples (of complete data) are needed to test the relationship between sensor data and mental health.

¹ Directly Supported = people who are able to be specifically identified as having participated in project activity or having accessed services or supports provided through it. Indirectly Supported = based on demographic or other project estimates rather than being able to be specifically identified as having participated in project activity or having accessed services or supports provided through it.

- Other data modalities, such as accelerometer data, might be a useful adjunctive data point that could be integrated to the next version of the application.

A consequence of these observations has been a focus, over the past six months in refining the app and improving the stability of data acquisition, before the application may be tested within another school setting.

Benefits derived from FGG funding:

Through establishment of the Youth Centre of Research Excellence in Suicide Prevention, in our first year we have:

- Enabled suicide prevention, and in particular, the reduction of suicides and reduction in repeat admission to hospital following a suicide attempt, as a core objective of the University of New South Wales (UNSW Sydney) [Faculty of Medicine Strategic Intent](#). This provides the platform to leverage funds and support through the university's significant research partnerships, such as the Sydney Partnership for Health, Education, Research and Enterprise ([SPHERE](#)) and [Mindgardens](#).
- Successfully obtained funding through the UNSW-University of Sydney Collaborative Partnership in Mental Health, Addiction and Neuroscience Research Scheme to extend the text messaging system in Study 2 to incorporate interventions for comorbid alcohol use and suicide attempt.
- Submitted three applications for funding to external agencies, including the National Health and Medical Research Council, to support the full-scale trial and evaluation of key initiatives.
- Expanded the cohort of Australian researchers with expertise in suicide prevention research through the ongoing capacity building of research fellows in the Centre.

Next steps:

Over the next 6-12 months, the Youth Centre for Research Excellence in Suicide Prevention will seek to:

- Attract a quality post-doctoral candidate to support Study 1 - Development of an online therapeutic application that delivers cognitive behaviour therapy (CBT) through a smartphone to a young person to help manage suicidal thoughts.
- Develop a detailed study protocol for Study 1, and obtain ethical approval for its conduct.
- Conduct a series of focus groups and iterative interviews with young people in order to inform the initial specifications of the CBT app outlined in Study 1, and commence a co-design process with young people to develop an initial prototype.
- Undertake recruitment of young people in three hospital sites in support of Study 2.
- Continue to refine and extend the app prototype which enables collection of social networks via bluetooth sensors with self-reported online and offline peer networks, developed for Study 3, and undertake further trials of feasibility and efficacy.

Project Outcomes Framework:

Change Lever	Objective	Metrics	Target – Full Project	Target – Year 1	Actual Delivery – Year 1	Target – Year 2
Evidence	<ul style="list-style-type: none"> Determine whether, and under what circumstances, social connectedness indicates risk of suicidality, suicide attempt and escalating mental health distress Deliver in a timely fashion, evidence-based smartphone applications shown to have efficacy in reducing suicide ideation and attempts 	<ul style="list-style-type: none"> Correlation between objective social connectedness and mental health outcomes Reduction in symptoms of depression and anxiety Reduction in severity of suicidal thinking Improvement in capacity to cope with suicidal thoughts Number of knowledge translation (KT) outputs 	<ul style="list-style-type: none"> Number of settings (schools, EDs, general practice) enrolled to deliver study programs (target TBC during protocol development) Number of young people engaged with study programs (target TBC during protocol development) Correlation between objective social connectedness and mental health outcomes Reduction in symptoms of depression and anxiety (target TBC during protocol development) Reduction in severity of suicidal thinking (target TBC during protocol development) Improvement in capacity to cope with suicidal thoughts (target TBC during protocol development) Number of knowledge translation (KT) outputs e.g publications, research snapshots, slide shares, social media messages 	<ul style="list-style-type: none"> Protocols for Study 1-3 developed, specifying sample sizes, target settings, primary and secondary outcomes and statistical analysis plan (this will inform full project targets) Knowledge translation plan developed for overall program (this will inform full project targets in relation to KT outputs) Full project targets confirmed by end year 1 Ethics approval for conduct of Study 1-3 obtained Consultation undertaken with young people to inform app design and delivery Specifications for CBT smartphone app (Study 1) quantified and prototype developed Text messaging intervention (Study 2) developed and tested Social connectivity smartphone app developed and tested (Study 3) Two ED sites enrolled to pilot Study 2 Two schools recruited to pilot Study 3 	<ul style="list-style-type: none"> Protocol for Study 2 and 3 developed. Full project targets confirmed for Study 2 and 3. Ethics approval for conduct of Study 2-3 obtained Consultation undertaken with young people to inform app design and delivery for Study 2-3 Text messaging intervention (Study 2) developed and tested Social connectivity smartphone app developed and tested (Study 3) Three ED sites enrolled to pilot Study 2 One school recruited to pilot Study 3 	<ul style="list-style-type: none"> Protocol for Study 1 developed, specifying sample size, target setting, primary and secondary outcomes and statistical analysis plan (this will inform full project targets) Ethics approval for conduct of Study 1 obtained Knowledge translation plan developed for overall program Consultation undertaken with young people to inform app design and delivery for Study 1 Specifications for CBT smartphone app (Study 1) quantified and prototype developed Three ED sites recruiting for pilot Study 2 Feasibility testing undertaken in one school for pilot Study 3

Change Lever	Objective	Metrics	Target – Full Project	Target – Year 1	Actual Delivery – Year 1	Target – Year 2
Capability	<ul style="list-style-type: none"> • Build capacity in suicide prevention research • Extend the availability of effective treatments for suicidal thinking across the health system (Study 1) • Improve aftercare for young people following discharge from hospital (Study 2) • Develop technology that can predict suicide risk (Study 3) 	<ul style="list-style-type: none"> • Number of new researchers with expertise in suicide prevention • Number of research outputs (grants, publications) generated • Ehealth platforms to deliver effective smartphone applications to young people are identified • Number of hospitals delivering text messaging intervention as part of routine care • Model to detect social networks and predict withdrawal as an indicator for suicide risk exists and is integrated in relevant settings 	<ul style="list-style-type: none"> • At least three early career researchers emerge with skills and capacity to lead independent suicide prevention research programs • eHealth platforms to deliver effective smartphone applications to young people are identified for product integration (e.g. stepped care models in primary care; Project Synergy platform) • Young people receive effective aftercare on discharge, as measured by time-to-event analysis (for repeat suicide attempt) • Model to detect social networks and predict withdrawal as an indicator for suicide risk exists and is integrated in relevant settings 	<ul style="list-style-type: none"> • Appoint three postdoctoral fellows to lead research projects • Develop mentoring and development plan to support capacity building 	<ul style="list-style-type: none"> • Two research fellows lead research projects (Study 2 and 3) • Mentoring and development plan to support capacity building developed and implemented 	<ul style="list-style-type: none"> • Appoint postdoctoral fellow to lead Pilot Study 1, and develop associated mentoring and development plan • Development of prototype app for Study 1 • Refinement of technology for Study 2 and Study 3
Agency	<ul style="list-style-type: none"> • Perceived relevance and usefulness of smartphone applications with end-users • Increase awareness and knowledge of available sources of help • Increase rates of help-seeking • Improved wellbeing 	<ul style="list-style-type: none"> • % study participants reporting ownership / engagement with smartphone applications and find them useful • % study participants reporting increased awareness and knowledge of available supports for suicidal thinking and behaviours • % study participants reporting increased confidence or comfort in seeking help for suicidal thinking and behaviours • % study participants reporting improved mental health and wellbeing 	<ul style="list-style-type: none"> • % study participants reporting ownership / engagement with smartphone applications and find them useful (target TBC during protocol development) • % study participants reporting increased awareness and knowledge of available supports for suicidal thinking and behaviours (target TBC during protocol development) • % study participants reporting increased confidence or comfort in seeking help for suicidal thinking and behaviours (target TBC during protocol development) • % study participants reporting improved mental health and 	<ul style="list-style-type: none"> • NA in Year 1 	<ul style="list-style-type: none"> • NA in Year 1 	<ul style="list-style-type: none"> • Pending, these results not anticipated until Year 3

Change Lever	Objective	Metrics	Target – Full Project	Target – Year 1	Actual Delivery – Year 1	Target – Year 2
Access	<ul style="list-style-type: none"> Improve access to effective and quality therapeutic suicide prevention support through smartphone applications 	<ul style="list-style-type: none"> Number of settings (schools, EDs, general practice) engaged to translate programs into practice Number unique users accessing smartphone apps 	<ul style="list-style-type: none"> Number of settings (schools, EDs, general practice) engaged to translate programs into practice (target TBC during protocol development) Number unique users accessing smartphone apps (target TBC during protocol development) 	<ul style="list-style-type: none"> NA in year 1 	<ul style="list-style-type: none"> NA in Year 1 	<ul style="list-style-type: none"> Pending, these results not anticipated until Year 4-5
Early Intervention	<ul style="list-style-type: none"> Improve capacity of individuals and their circle of support (friends, family, school counsellors, mental health professionals) to detect suicide risk Increase proportion of at risk young people to receive help / access therapies 	<ul style="list-style-type: none"> Decrease in number of young people referred to health services for suicidal behaviours Reduction in number of repeat suicide attempts Decreased length of hospital stay Decreased length of psychiatric hospital stay Reduction in suicide-related mortality 	<ul style="list-style-type: none"> Decrease in number of young people referred to health services for suicidal behaviours (target TBC during protocol development) Reduction in number of repeat suicide attempts (target TBC during protocol development) Decreased length of hospital stay (target TBC during protocol development) Decreased length of psychiatric hospital stay (target TBC during protocol development) Reduction in suicide-related mortality (target TBC during protocol development) 	<ul style="list-style-type: none"> NA in year 1 	<ul style="list-style-type: none"> NA in Year 1 	<ul style="list-style-type: none"> Pending, these results not anticipated until Year 3-5

Notes: Nil additional notes

Overall Performance assessment:

Change Lever	Assessment	Comments
Evidence	Below At Exceeding target	<ul style="list-style-type: none"> Study 1 requires dedicated personnel to establish, develop and deliver protocol. Anticipate this can be realised with Year 2 funding allocation. Study 2 is on track and exceeding targets. Study 3 is on track in meeting targets.
Capability	Below At Exceeding target	<ul style="list-style-type: none"> Research fellows have been appointed with available funds, and capacity building / mentoring plans developed and implemented.
Agency	Below At Exceeding target	<ul style="list-style-type: none"> As expected for stage of research program. These change levers will come into play in Years 3-5.

Change Lever	Assessment	Comments
Access	Below At Exceeding target	• As expected for stage of research program. These change levers will come into play in Years 4-5
Early Intervention	Below At Exceeding target	• As expected for stage of research program. These change levers will come into play in Years 3-5

Status against plan for implementation:

On track | At risk | Off track

Status against targeted project outcomes:

Below | **At** | Exceeding target